Jarmo VALKOLA

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This is a referee publication. The referees were professors Beá-ta Thomka (University of Pécs), and Kristian Feigelson (Paris III/ Sorbonne-Nouvelle).

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## COGNITION AND VISUALITY

*Cognition and Visuality* is a theoretical introduction into the cognitive science related to art and its comprehension. Cognitive science is an interdisciplinary way of scientific thinking, which has its implications to the aesthetic theories. Cognitive science has its links with philosophy, and deals seriously with aesthetical questions because of the importance of mental processes and recognition in visual perception. Jarmo Valkola argues that observers think, perceive, feel, interpret, and apply knowledge of the world when viewing and making sense of the works of art. This study integrates psychological and aesthetical approaches and concepts to understand the complex processes of art and its interpretation. Through different cinematic examples it is possible to study artistic originality, and they are cognitively interesting examples of pictorial orchestration of images and sounds in a creative way.

# COGNITION AND VISUALITY

## PREFACE

The roots of this publication lie in the longstanding collaboration between the author and the department of Hungarology at the University of Jyväskylä. This collaboration begun already before the years 1999-2001, when the author was holding the position of professor of Art Education at the same University. The collaboration started with courses on Hungarian Cinema, and expanded into seminars and symposiums on the same field. The most memorable of those were the research project called Hungarian Contemporary History in the Light of Hungarian Film, which had its closing symposium in the year 2000 at the University of Jyväskylä. This project included partners from five different European Universities. The second very memorable symposium happened during the 5th World Congress of Hungarian Studies in Jyväskylä in the year 2001, when the author was organizing a specific Cinema Symposium around Hungarian cinema. Still another fruit of this expanding collaboration was the Théorème special issue on Hungarian cinema – *Cinéma hongrois:le temps et l'histoire*, sous la direction de Kristian Feigelson avec Jarmo Valkola, postface de Jean-Pierre Jancolas, Presses Sorbonne Nouvelle, Paris 2003 – with a seminar in Paris n June 2003.

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Jyväskylä, May 2004.

Jarmo Valkola

# 1

# THE COGNITIVE
# MIND AND
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## REFLECTIONS ON COGNITIVE SCIENCE

The term *cognition* refers to all processes by which the sensory input is transformed, reduced, elaborated, stored, recovered, and used. It is concerned with these processes even when they operate in the absence of relevant stimulation as in images and hallucinations... it is apparent that cognition is involved in everything a human being might possibly do; that every psychological phenomenon is a cognitive phenomenon.[1]

The more a science is concerned with causes, the more instructive it will be: for an instructor is one who explains the causes of a thing... the most knowable things are first principles and causes, for it is through and from these that other things are known, and not they through the particulars falling under them. The most authoritative science, reigning supreme over subsidiary, is that which knows for what purposes every act takes place, i.e. the final cause, the good in each particular instance, and in general *summum bonum* in nature as a whole.[2]

Science is not the piecemeal accumulation of facts; rather, it is a struggle between competing theories. And it is not true that science arrives at one answer, although elementary science may give this kind of impression. As the work on the philosophy of science has shown, it is a profound mistake to think of science as beginning from a kind of theory-neutral observation.[3] Rather, science is saturated with theory, so that the most realistic way to see the transition from one view of, say, gravity to another is as the replacement of one battery of theoretical concepts by another. It is the question of paradigm shifts.[4] What distinguishes the work of different scientists is not what they have done, but merely the theories they have brought to bear through their experiments. Especially then when the theories and observations are concept-mediated. One might say that hypotheses of science serve as

chunks for conveying large amounts of information economically, and that object perception is the chunking of bits of sensory information so that we *see* objects.[5]

The concept of criticism is one widely used. Criticism is a kind of noticing, the recognition of aesthetically relevant features of art works.[6] If criticism is a kind of noticing then it does not follow that there are general rules applicable across categories of works of art, or that there are any otherwise specifiable foundations upon which critical judgement is based. One notices features of aesthetic value, and one learns to do so because one has an appropriate background in the art. So, to take criticism as a kind of noticing is to reject a view of criticism as somehow approaching works of art with no preconceptions, or with no peripheral knowledge and experience of the critic. It is a question of idea of criticism as a perceptual process.

The aim of criticism is to understand or to grasp the meaning of the work of art.[7] Criticism is, in an interesting sense, a perceptual process. By this is meant that criticism should not be modelled as an approach to works of art armed with rules or sets of criteria for aesthetic excellence that are then applied. Criticism should be modelled as a kind of survey of both large- and small-scale features of the object in question. Criticism is also a matter of scrutiny. This kind of thinking amounts to the idea that criticism consists on scrutiny of the work of art. And this kind of view conceives of scrutiny as an essentially perceptual process.[8] Art criticism can lend support to different kinds of efforts to go beyond the artistically straight and narrow by providing evidence that creativity is a dynamic and forward moving process. Criticism can help to lay the groundwork for a deeper understanding of the importance of art in human life.[9]

The viewer brings in general truths about the work of art and knowledge of some of the prevailing conventions of art. The critic brings with him a great deal of information external to the particular work under scrutiny. These levels might be general truths about the world, and art world, prevailing conventions of art, and so on. The internal truths of a single work of art must be gained from looking at the work. This kind of contrast between the internal and external is central to the scrutiny view of criticism. So, the internal truths passing into critic's cognitive stock must go through perception.[10] The critic may understand things, and the internal truths of the work, but he must acquire that understanding by looking at the work, and in no other way.

That is why the need for internal processing is strong if we are to describe the subjective aspects of a narrative flow, including feelings, emotions, and aesthetic effects. These kinds of perceptions happen in the invisible body/mind interior, and belong to the subjectivity of the spectator. This is something, which the viewer has to construct by a series of cognitive acts.[11] To whatever extent cognition, broadly construed, turns out to be relevant to the explanation of social behaviour, emotion, psychopathology, or physical skills, the cognitive scientist will be interested.[12]

Judging reality depends on the modularity of the mind, on the potential for parallel processing by separate function centres in the brain. Mental representations of a fictional or real object have the same *local reality* in the mind, but the global module that judge reality-status prevents us from mistaking the fictional for the real and also allows us to experience emotions evoked by the local simulations.[13] The spectator's role is *perceptual*.[14] Understanding works of art is centrally a perceptual process than an inferential one. There is no significant step between how we perceive the work, and how we understand it.

Understanding is rooted in scrutiny of the aesthetic surface of the work. Perception supplies premises for an inference of the meaning of the work of art. A certain cognitive stock allows the construction of critically relevant evaluations, from which the judgement of meaning can de deduced. Meaning and coherence are constructed not only in different ways, but also on different levels within the reception. Written and image-based discourses are exceptionally rich sources of information from which a spectator can extract meaningful and coherent experiences on a wide variety of levels.[15]

Cognitive science is committed to the reasonable view that the mind is a representational system, that is, an intentional system that transforms, processes, stores, and retrieves information about the world. This representational system is a rich one, consisting of a priori structures, processors, and categories, which we use to create an orderly *picture* of the world. As the picture is enriched and revised throughout our lives we become continually better at anticipating reality. Cognitive scientists perform their transcendental inferences by generating hypotheses about mental processes, gathering relevant data from human subjects, and thereby refining or rejecting the initial conjectures.[16]

The arts are cognitive and a matter of active thinking. The symbol system approach to cognition identifies the different arts as each being a different symbol system, and thinking in the arts as processing, or conducting operations on, the symbols of one of these systems. This establishes the arts as cognitive. It also establishes them as unique because each art medium is a different symbol system, and therefore thinking within each symbol system is a unique kind of thinking.

Over the past 30 years cognitive science has revolutionized our understanding of mental processes. At the heart of this discipline is a

central dogma, which plays a role analogous to the doctrine of atomism in physics, the germ theory of disease in medicine, or plate tectonics in geology. This central dogma is the 'Computational Theory of Mind': which means that mental processes are formal manipulations of symbols, or programs, consisting of sequences of elementary processes made available by the information-processing capabilities of neural tissue.[17] Mental processes are operations by which the individual mind infuses *meaningfulness* and *coherence* into a fragmented and non-meaningful objective world, generating holistic chunks of phenomenal entities (e.g., objects, events, intentions, and causes).[18] *Understanding* is the general term for these processes, and features an ongoing interaction between an organism and its environment. Understanding other people is one of the fundamental human problems. We know much less about our ability to understand other minds than about our ability to understand the physical world. One currently prevalent theory of the evolution of cognition suggests that the capacity to understand, and so manipulate, our conspecifics was the driving force behind the development of distinctively human intelligence.[19] Understanding is the way the world presents itself to us, and this is the result of the massive complex of culture, language, history, and bodily mechanisms that blend our world what it is.[20]

Individual claims about what our representations are about are frequently made in the cognitive science literature, but still we don't know enough to theorize about the semantics of our mental representation system in the sense that linguistics provides us with the formal semantics of natural language. We can still infer that the semantics of our mental representation system must have certain characteristics. We can talk about human cognitive capacities, which are intentional, and can be pragmatically evaluated, and are productive. Cognitive science is not only interested in the content of mental representations, but also in where this content comes from, because for a mental

entity or state to be a representation, it must not only have content, but also it must be significant. A significant representation can produce an interpretant state or process in the subject, and this state or process is related to both the representation and the subject in such a way that, by means of the interpretant, what the representation represents can make a difference to the internal states and behaviour of the subject.[21] The interpretant of a mental representation for a given subject consists of all the possible computational consequences, including both the processes and the results of these processes.

For example, the so-called "picture theory" has a very long history, going back to Plato or even Democritus, and until quite recently it was almost universally accepted.[22] All versions hold that having visual imagery involves having entities, in the head or in the mind, which are like, or functionally equivalent to inner pictures. These pictures are thought of being composed of copies or remnants of earlier sense impressions, complexes of visual sensations, which were they picture like. Picture theory came under severe philosophical attack in the middle years of the last century for being committed to an implausible, Cartesian view of the mind. However, Kosslyn has succeeded in showing that his computational version of the picture theory is both coherent and empirically credible.[23] Tye seems to have convincingly demonstrated that it is coherent given the assumption that computational data structures of some type are proper model for conscious and intentionalistic mental contents.[24] Cognitive science's attempt to explain intentionality by positing mental representations creates a problem, because mental representations are usually taken to be symbols. A symbol in the traditional semantic sense involves conventions, both with respect to its meaning and respect to its syntactic type. So, conventions themselves also involve intentionality, and that's why it is not so simple to explain intentionality by positing mental representations or mental symbols.[25] Usually, the single images and

scenes symbolize something larger. Basically a symbol is an everyday, straightforward method of expression. A word is a symbol for a thing, and a concept is a symbol for a process or an experience. The point of words, and concepts are obvious enough. They separate the response to a thing from the thing itself, they emphasize certain features of the thing, and they facilitate new analyses and new connections. The substitution of the symbol for its subject helps to emphasise certain characteristics of the subject. The symbol enriches the context, but also, the context influences the symbol. A sign might have a fairly precise meaning, while symbol has a less definable meaning, and a vast wealth of associations. The obvious meaning of a poetic symbol is often very different from its associations. One has to bear in mind that every symbol exists only as shown, because it is heavily influenced by every nuance of the artist's style. A symbol is not just something which one adds to the story. The story itself is a symbol, and so are the various situations, and other elements in the narrative.

Most discussions of cognitive theory conflate the notion of a mental (intentional) content with that of a computational representation, failing to distinguish the computational mentalism dogma from the view that brain function may best be understood and simulated computationally. The computational theory of mind has led to rapid progress because it has given a precise mechanistic sense to formally vague terms such as 'memory', 'meaning', 'goal', 'perception', and the like, which are indispensable to explaining intelligence. Dudley Andrew touches this same regard: . . . we are now witnessing American film theory audaciously tendering a psychological model, often set explicitly against psychoanalysis, labelled cognitive science.[26]

Cognitive science is based on a non-behaviouristic, psychological framework of research. To understand visual phenomena, behaviour, or language, we need to understand the mechanisms and structures

by which these activities are processed by the human mind and brain. Aspects of cognitive research and thinking have their roots in Gestalt psychology and phenomenology.[27] Cognitive science has several philosophical implications. For example, people often lack knowledge of underlying mental processes; we are not adept at identifying causes of our behaviour and mental states.

The mind is in cognitive sense a system of many different special purpose processors, most of which have no idea what the others are doing. Research in cognitive science indicates that people are prone to a wide variety of characteristic reasoning and judgment errors. It is interesting to notice that to whatever extent a person is capable of achieving self-knowledge, rationality, and an accurate picture of the nature of the mind as a whole, it will require much more than peering inward with our mind's eye and applying natural knowledge and reasoning abilities. The co-operative working of the different systems of the brain supplies humans with information processing, and provides active and plastic adaptation to the environment. It is a complex of functional systems, organized according to plans and programmes created by the social history.[28]

## THE ESSENTIALITY OF MENTAL PROCESSES

Cognitive schools have tried to describe the way in which perception and meaning are structured by human mental structures and mechanisms. In Gestalt thinking, for example, grouping means that the 'whole' is more than the sum of its parts. 'The whole' is a description of the result of the interaction of the parts. It means that we establish a phenomenon, a concept, or a schema, for which the associated features and aspects are its determiners. We can give conscious salience to the 'determiners', by asking what is understood by a given concept, or by trying to reveal the underlying network of

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associations. Psychologists have investigated the activation of network of associations by investigating associative priming, the way in which one phenomenon activates an associative network and by that facilitates mental operations on the items in the activated network.[29] In a way, Gestalt psychology was an extension of Helmholtz's constructivist ideas. Where the behaviorists insisted that psychology was simply the study of how objective stimuli come to elicit objective responses, the Gestaltists pointed to simple demonstrations casting doubt on the idea that objective stimuli even exist. Although many of the idea were in the area of perception, they were also extended to memory, and problem solving.[30]

The essentiality of mental processes is typical for cognitive approach. Mental structures are involved in the process of perception itself, and this idea can be found in many cognitive theories, which take the testing of mental structures as central to the perceptual process. Top-down and bottom-up processes are used by many constructive theories. Gestalt psychology is interested in perceptual organization, which means how we unite things and elements into patterns or objects. Gestalt psychology wants to determine the concepts through which we organize parts into a whole, and make conclusions like a shape is more elementary and easier to remember than background. A shape is seen in front of a background, and a shape is like formless material, which seems to stress behind the background. The contours that seem to differentiate the shape from the background seem to belong to the shape. All gestalt solutions are not generally accepted but many of the problems proposed by Gestalt psychology have still current value. Perception is an active and constructive process. Perception does not come straight from sensory information but is more likely a combination of the interaction between sensory information, internal hypotheses, expectations, and knowledge. So, the sensory information forms a basis for larger processes.

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There is a long-standing tradition in philosophy that perception (especially touch and vision) gives undeniably true knowledge. Philosophers have generally sought certainty and have often claimed it, whereas scientists are more used to modify their theories by new data, have been more flexible. Still, many scientific instruments have been developed because of the limitations of the senses and the unreliability of perception. It is worth asking why we have both *perceptions* and *conceptions* of the world. Why is perception separate and in many ways different from our conceptual understanding? It is because perception works very quickly whereas conceptual thinking is much slower because it might take years to form adequate concepts. Knowledge and ideas are in a way timeless, and it does not seem possible to think that perception could use all of our previous knowledge because it works so fast. Still, there is a special intelligence in perception. It can be argued that the development of distance perception freed organisms from the tyranny of reflexes, and was the necessary precursor of all intelligence. The special intelligence of perception has been widely discussed. An earlier account portrayed sensory perception differently as a passive un-distorting view through which the mind accepts sensations which were considered to be sense-data of perception. On this kind of account sense-data may be selected according to need or attention; for vision the brain (or mind) has little to do except select and pick up features of the ambient array of light.

R. L. Gregory thinks that perception is not determined only through sensory information. Perception is a dynamic *process*, which includes a search for interpretation based on sensory information, and the usable knowledge concerning the properties of objects in question. This knowledge is maintained by earlier experiences, which are born through sight and through the information gained by senses. In Gregory's thinking objects have past and future, because an object transcends experience and becomes an embodiment of knowledge and

expectation.[31] It is very difficult to give an answer to that how we perceive the reality. One must learn to differentiate between different reactions, born and learned. The behaviourist model is too restrictive to study perception, because perception is experience based on worldly objects.[32] The senses cannot produce direct perception of the world, but instead they offer proofs of testing hypotheses of what lies in front of us. A perceived object is a hypothesis, suggested and tested by sensory data.[33]

## THE IMMEDIACY OF PERCEPTION

Perceiving objects is a kind of problem solution. Sometimes eye and brain can make false conclusions, and then we see a hallucination or an illusion. Perception and thinking are not totally different processes, because especially many sided figures and images will proof that perception includes delicate processes even in the basic level.[34] It has been long known that in perception there is a likelihood principle, and in perception there are also unconscious inferences. Perception includes unconscious conclusions, and the whole perceptual processing includes many complicated mental processes, which we are not aware of.[35] Julian Hochberg thinks that perception includes unconscious conclusions as well, and through that it is possible to explain, for example, illusions.[36]

When a person watches a view he or she gains information through fixations and eye movements. Eye movements are necessary for details, because we can clearly see only those details that are very near to the point we are looking at. Eye movements are also important, because the impression of depth comes through certain features that function as local depth cues. Eye movements are not arbitrary, but instead every eye movement seems to be in forehand decided. Eye movements are guided by the expectations, and those expectations

will arouse on the basis of what we have learned to expect in certain situations, and what we have learned about the regularities of forms and shapes. This is also underlined by Neisser, and he thinks that eye movements are guided by received information, and that we are not totally aware of the order of eye movements and fixations.[37]

A person gathers visual information through eye movements, which he or she then fits into a schematic map to produce a unified perception. A schematic map is the program of possible samplings of an extended scene, and of contingent expectancies of what will be seen as a result of those samplings.[38] A schematic map is a matrix of the mind's time and space expectations, which integrates different glances into one perceptual structure. When we are watching a view, most of it is not in the retina, but in the mind's eye. The view has been stored in encoded form, and not as a mental mirror image. A sudden glance can be a sensation, a schematic map can be an image, and perceptual structure can function as perception.[39] A schematic map is not just a visual storage or passive afterimage, but an active director of the whole perceptual process. Eyes are directed to what may be needed next, and to checking current perceptions.

According to Neisser, not just reading, but also listening and watching are skilled functions that happen through time. They are all dependent of earlier structures, which are called schemes. They are internal parts belonging to a perceivers perceptual cycle. Those parts can be changed by experience connected with the perceptual material. Schemes direct perception, and at the same time they can be changed during the perceptual process.[40] Because we see what we are looking at, the schemes together with the valid information control the perceptual process. Perception is a building process, where the perceiver actively explores the surroundings by moving the eyes, head, and body, so, that one can gain all the possible information. In

every moment the perceiver forms expectations, and tests it. New information can change the original scheme, and a new scheme can guide future perceptions. Schemes are expectations or anticipations through which the past influences the future. This whole perceptual process is a perceptual cycle.[41] The theoretical foundation of the cognitive approach lies in schema theory. "Schemas (or schemes) are complex types of cognitive structures representing generic social experiences and cultural knowledge. They contain the common and characteristic features of similar phenomena, for example similar objects, events, situations or discourses... they exist in the minds of individual subjects as psychic structure, but they are linked to the socio-cultural and historical realities. Schemas are developed from daily life experiences which in their turn reflect socio-cultural circumstances at a certain point of history."[42]

Perception is not just a recognition of previous assumes, but it produces new *knowledge* for the organism, and although a perceiver might have some expectations when he or she gains information, these expectation can be fixed and modified during the perceptual process. The difference between a skilled and unskilled perceiver is not that the former would ad something into the stimulus, but in this that a skilled perceiver can gain more information about the object. A skilled perceiver can realize features and higher structures that are not noticed by others. In a way the schemes of a skilled perceiver are more developed, so, they can receive broader information, and they can handle more complicated information. Learning through perception can affect a schematic map, so, a perceptual learning can affect what we are looking at, and how we remember what we see. Neisser uses the concept *a cognitive map*, which means a kind of space and orienting schema, and he thinks that perception is a process where there are many different perceptions. These perceptions change original schemes and every person has his or her own schemes due to a

personal life. It is a testing of hypotheses, but these hypotheses are strictly bordered, very general and not very specific by nature.[43] Two different criteria are often used to attribute to people map-like organization of spatial knowledge. One is when spatial inferences about the direction and distances among locations can be made without direct experience. The other is when it is possible to take mentally a different perspective on an entire spatial layout. This can be done by imagining oneself in a different position with respect to a layout.[44] It is possible to think of cognitive maps as databases, and the term cognitive map is often being used more and more metaphorically.

Nowadays also art scholars are beginning to acknowledge the cognitive dimension of art and are questioning what should be taught. What can we learn about works of art and how can we make connections between information, one's own life and the world we are living in? For example, discipline-based approach in art education has emphasized the point, that works of art present us with intricate meanings, and to understand such meanings requires abilities to explain them. Therefore, one aim of a discipline-based art education is to develop students' ability to interpret works of art on a more challenging and sophisticated level. Still the current ideology and practice in art education are embedded in contradictions and often appear to vacillate between modernist and postmodernist theories of art. Many art educators continue to use modernist works of art from which to teach. It is due to the easiness to use modernist theories as a foundation and understanding of the work of art.[45]

## FROM PERCEPTION TO RECOGNITION

When we view a scene, the world seems to be filled with objects that have particular shapes, colours, and material properties. The primary source of information that we use to acquire information about our

world is visual, which relies on the light reflected off of object sur-
faces to a point of observation. Our knowledge of object structure,
and aspects of our visual world, is determined by the structure of the
surfaces of objects, since it is there that light interacts with objects.
Compositional features like centres of interest may be graphic rather
than scenic, in a sense like abstract paintings can have them. The
spectator's attention is easily pre-empted by focal points, like a con-
figuration of strongly contrasted colours, or a nexus where many line
converge at sharp angles. Colour and composition can compete, and
graphic structures are always vulnerable to non-pictorial priorities,
such as literary content.[46] Movement is a primary graphic feature,
because it is so conspicuously concrete. It is somehow assumed to
be more realistic than the static spaces within which it occurs. The
movement in an image is real, but only in the sense that everything
else in the image is real. As a representation of another movement, it
is not often realistic, and when it happens to be realistic, no special
consequences flow. The human mind is biologically pre-programmed
to accord a high priority to movement. Pictorial organisation can in-
tensify effects palpable in real-life vision. Although movement in itself
is completely abstract, different factors can give movement a kind of
character, which interacts with other elements. Movement resembles
all the elements of concrete form in suggesting a range of dynamics,
and it is highly responsive to dramatic or semantic elements.

It is said that perception is usually dependent of concepts. When we
perceive something, we also perceive it as some one. Perceiving relies
on knowledge of the world around us. It might be difficult to separate
knowledge of the world, knowledge of semiotic form, and knowledge
of meanings, because far from being separate levels, zones, or disci-
plines each implies the others. Knowledge of semiotic form is part of
our wider knowledge, which can only be a knot of all these things. If
one replaces paradigms like separate levels by models like interacting

subsystems, then coherence and correspondence will stand revealed as synonyms for the same co-ordination. Certain knowledge is not always necessary, and it is surprising how well probabilistic inference can repair deficiencies in knowledge. The majority of traditional psychological theories investigate perception as recognition of something, and there are also methods through which we can observe the different phases of perception. Nowadays there is also talk about direct perception. We observe other things more than others, and what is in the centre of the focus, is usually seen clearer. This relates to the function of the eyes. For example, Ulric Neisser suggested some years ago that there are three different ways of perception: direct perception, recognition and interpersonal perception.[47] We perceive objects through different phases. In the first pre-attentive stage of processing, stimulus will be divided into primitives. In the second focused attention stage of processing these primitives are united into a whole.[48] For example, Bela Julesz thinks that the differentiation of textures depends on local features, primitives that he calls textons.

These textons will form textures, and they don't have to be totally identical to form groups.[49] The different parts of perception will be differentiated through different textures. In the pre-attentive stage of processing the textons will be united into textures quickly and automatically. After this there will be a recognition of patterns and objects The process will happen in the bottom-up style during the first phase, and later on also from top-down. Also Anne Treisman thinks that in the pre-attentive stage of processing there will be perceptual organization and differentiation of the textures. She thinks that different perceptual laws organize visual views into homogenic areas and elements. This phase is a beginning one, from which we are not aware of.[50]

Also Michael Tarr believes that a perceptual organization will happen in the early stages of visual processing, and it is needed for the development of more complex representations.[51] Perceptual organizing has two ways of processing, the grouping of and separation of features. The different perceptual laws will describe more thoroughly this organization, and they function although all the possible information concerning the view in question is not available. Treisman thinks that essential grouping of features will happen during the slower, focused attention stage of processing. This stage selects and integrates features into certain positions. Focused attention stage of processing is also needed to form a temporary object representation or object file from a certain object, and it will be fulfilled constantly, for example, when the object changes through movement.

Attention can be intentional, even prefigured. If some things draw our attention, this can be unintentional. Attention is an aspect of consciousness., but not a synonym with it. If the attention is divided, then a temporary representation includes those features that characterize the whole structure of different elements as a group. There might be two ways of looking: one for the perception of local forms, and the other for larger perception. Selective attention is the factor that leads to the perception of details, and one can consider the larger, global perception as a very general process, which includes even then perception of all those things that are beyond our attention.[52] The recognition of objects will happen then, when temporary representation will be measured with the patterns in the memory or with the descriptions that have taken place with the previous objects in mind. Sometimes during active perception the representation that is all the time fulfilling itself will change into something else. Then the recognisable object might change into another that is more appropriate.[53] The perception and recognition of objects takes normally more than just the right selection and listing of features.

Normal perception takes place between earlier knowledge, and sensory information gained through perception. The most significant consequence that deals with the grouping of features and parts is that there will be emergent features, which are directly perceived. One can perceive directly the parts or groups formed by them, and these are the emergent features.[54] Also other tests have proven that a target may be recognized based on very little information. They show that a spectator in front of an image with a previously unseen view can through one fixation extract enough information to understand it.[55] This is very essential for the viewing of art, and its objects.

Irving Biederman's theory *recognition by components* is a constructive one, because he says that in the first phase of perception the objects are divided into basic elements that are then unified, and the gathered wholes are then recognized by comparing them with the representations in memory. Three-dimensional objects are recognized through volumetric elements that are called *geons*.[56] Geons are basic materials of perception, and by combining them it is possible to build up many thousand objects. Geons can be perceived at least from five easily recognisable properties of object line: collinearity, curvilinearity, symmetry, parallelism, and cotermination of segments. Our visual system differentiates those properties from the two-dimensional retina image, and they are strong proofs that the three-dimensional world has the same properties.[57]

The perceptual laws (like the Prägnanz law) have a significant role in the formation of geons. If the basic elements can be perceived, and the perception of objects is based on basic elements, then the object can be recognized. The recognition can happen very easy when there is enough information to recognize the geons of the object. When geons are found the ordering of them are compared with the representation in memory.[58] The crucial thing is that all the geons are

perceivable, because they can be recognized quickly through some of them. Of course, the whole object will offer a more optimal possibility to recognize geons, and the object. This is important because if object recognition would happen with a large amount of information, the process would slow ready for mistakes. Through practical experience we know that object recognition is a very quick and precise process. On can also assume that the recognition of very complex objects last longer than the recognition of simple ones, but because the recognition of objects happens through simple basic elements, the complex objects will be as quickly recognized.[59] Because object recognition is based on geons from different perspectives, the whole object is quickly recognized nevertheless what the perspective would be.

There is also point of views that object recognition is bound with the perspective. The recognition of an object through a new point of view or perspective is more easier because in the mind exists already a storage of representations with different point of views. When we have seen an object through many perspectives, the recognition of it is not bound to a certain perspective [60] In David Marr's computational theory the process of seeing includes different phases through which the retinal image will change into three-dimensional representation. The first phase leads into a primal sketch where visual system's main function is to recognize the properties of two-dimensional image. The recognition includes the changes of light sources and highlights, and the primary analysis of local, geometric structures. At the same time, a group of basic elements is identified, and many perceptual laws are being adapted.

The second phase leads into a 2 ½ D sketch, the visual system processes information, which was included in the primal sketch. The goal is to reach a representation concerning the depth and direction of

surfaces. 2 ½ D sketch is an internal representation of the physical world, and it is reached through top-down process. After this the 2 ½ D sketch in formation will be changed into a 3-D model representation, which is a three-dimensional vision of the world. The recognition of objects will happen when 3-D model representation is compared with a list in memory of 3-D model descriptions. When an appropriate model is picked up from the list, it is possible to make a better analysis concerning the representation.[61] The importance of the theory lies in the assumption that perception is born out of analysing the information of the retinal image. Relatively simple sensations are affected top-down by the prevailing perception, or hypotheses, of the objects before eyes. Top-down knowledge of specific classes of objects also has clear perceptual effects.

Knowledge can work downwards to parcel signals and data into objects. As knowledge changes, the parcelling into objects may change, both for science and perception. For example, the criteria for recognizing and naming the various features of a machine as separate depend very much on our knowledge of functions. It is a question of the importance of upward and downward processing in perception and science, the complex interplay of signals, data, and hypotheses. Unravelling this is essential for understanding the strategies and procedures of perception and science.

A profound difference between perceptual and conceptual objects is that perceptual objects are always concrete ones, while conceptual objects of science may be abstract ones. The perceived objects have spatial extension, and they may change in time, while conceptual objects cannot be sensed, may be unchanging and spaceless, and yet have the status of objects in that they are public. Although concrete objects may have features that are abstract, as we believe especially

from scientific knowledge.[62] According to Gregory, there are differences between perceptual and scientific hypotheses.[63]

Firstly, perceptions are from one vantage-point, and run in real time, but science is not based on a particular viewpoint. That is why perception differs from conceptions by being related to events in real time from a local region of space, while conceptions have no locale and are essentially timeless. So perception is far more limited in range and application than conception. The basis of empiricism is that all conception depends upon perception, but conception can break away from perception, and create a new world. Secondly, perceptions are of instances, and science is of generalizations. We perceive individual objects, but we can conceive generalizations and abstractions. Thirdly, perceptions are limited to concrete objects, while science also has abstract objects. The contribution of inferences and assumptions to sensing even simple makes the distinction between concrete and abstract objects difficult and perhaps impossible. Fourthly, perceptions are not explanations, but concepts can be explanatory. Scientific hypotheses are closely linked to explanation. Perceptions have far less explanatory power, but might have some. Fifthly, perception includes awareness, and the physical sciences exclude it.

This is striking difference between hypotheses of science and perception. Sensations are involved in perception, but awareness, or consciousness has no place in the hypotheses of physics. Much of human behaviour controlled by perception can occur without awareness: consciousness is seldom if ever necessary. There are marked similarities and important identities between hypotheses of science and perceptions, however the differences are extremely interesting. It may be that developments in artificial intelligence might provide new conceptions. In a way, perceptions are like hypotheses, conclusions of unconscious, and inductive inferences, so, the concept of the nor-

mal meaning of frequently repeated perceptions can come about with immutable certainty, lightning speed and without any meditation. By frequent repetition of similar experiences one can attain continually recurring connections between very different perceptions. Meanings can be built up inductively, from many different sources, and both for language, and for perceptions. In this process, our ideas of the physical form of objects happen inductively, by combining visual experiences from different viewpoints. At any given moment on sees the world from one viewpoint, and from one angle. In that sense each shot on the screen corresponds to a glance, but the succession of shots is very unlike a succession of glances. The human eye operates on very different mental principles like a camera, and our glances shift to focuses of attention within a vaster field of peripheral vision, and this field constantly interrelates the glances within it at the same time as our short-term memory co-ordinates the series of glances in a serial, and on-going way.

The perception as a whole is based on many different systems, which are partly independent modular systems. As mentioned before, perception includes three basic forms and systems: direct perception, interpersonal perception, and representation. There exists also many other modular systems like memory system, motoric control system, and the system of writing, which are in collaboration with each others, and that's why quite hard to separate. For example, direct perception is only one form or system of perception, and it is innately prepared, and concerned with pariental pathway.[64] In direct perception the spectator is active, and can get the kinetic depth effect. In visual experience, depth effects are created by the nervous system and the mind.[65] Many cognitive functions are dependable on mental representations: we have to identify targets through the information stored in our memory. This kind of recognition might change from very simple cases into very complex ones. In art one example of a

complex one would be like recognition of a Rembrandt painting. Recognition is always determined by the past: to recognize something we have to notice the similarities between the actual information, and the information of some earlier moments. The effect of the past into cognitive processes is a very complicated issue, which can't be explained just through information storage. In learning there is an interaction between experience and earlier understanding. The recognition of single objects depends usually on the perception of certain characteristics, and textures. In everyday experience, all these three forms and systems of perception will function smoothly together.

## PERCEIVING OBJECTS AND ART

The different theories, and scientific approaches to perception have open up horizons in this field. A broader view of perception can see these different approaches as complements of each other, and help us with a better understanding of the whole process. The perceptual laws and other gestalt psychological principles can help and guide us how to organize perceptions into unified patterns and objects. The perceptual laws describe the effects of certain innate, and very early learned schemes into the organization of perception. Gestalt psychologist thought that these organizing principles have a physiological basis, and so they would be innate ways of organizing perception. If we think that there are innate and learned schemes, we can see the unification of many perceptions, although our experiences and interpretations of them might be very different, but still in the background there is a common information, which has been picked from the same targets.

The innate psychological schemes seem to be sometimes flexible. In the studies concerning many sided and complex image interpreta-

tions, there is a perspective according to which the primary organi-
zation of perception might happen in several ways. So, the innate
schemes are not always stiff but can produce different shapes on the
same material basis. Different perceptions are consequences of dif-
ferent schemes that will change during lifetime, and in the percep-
tion of art this seems that the same work of art looks different while
to be watched during different periods of life. Perception functions
remarkably fast, because unexpected events do happen. We have per-
ceptual hypotheses and conceptual hypotheses of the world, and they
are different, and might work on different time-scales.

Different visual models, descriptions, and representations are partly
learned, because they are based on earlier experiences. All learned
schemes are not models or representations, because they can deal
with the ways and principles of perception. The different visual mod-
els, descriptions, and representations are linked with the basic system
of perception, recognition. Very brief glances are relatively immune
to the effect of learning, but learning can affect the schematic map,
which is a learned model or representation of an object. Perception
is related to conception by perceptually guided activities requiring
understanding. The reality is made by private hypotheses of percep-
tion, and shared hypotheses of conception.

A learned perceiver of art has developed better schemes, models,
and representations, and can take in more information, and can find
out more complex connections between elements and things like an
unskilled perceiver. Because learned schemes can be models and rep-
resentations of objects, they can be endlessly formed. Learned and
innate schemes might have different roles in different situations, and
they function in different phases of perception by completing each
other.

The innate schemes do not lead straight into the recognition of an object. They work more as organizers of perception. The learned schemes have a role in recognition. They are models, descriptions, and representations. The learned schemes can be guiding models of action. It is possible that the differentiation between learned and innate schemes is purely theoretical, and actually it is a question of combining the two. The perceptual laws itself do not bring in the desired effect, it is produced by learned models, descriptions, and representations. Because of the learned representations, certain shapes can gain more meanings than others, and can be based on previous knowledge of the world it is possible to form expectations that will guide to a proper interpretation.

The different models and representations are kind of hypotheses, and not often very accurate representations of the views in front. The hypotheses of representation have formed through experience, which brings in new expectations guiding our perceptions. While observing complex images the existence of learned representations is more clear, because in front of them it is possible to gain different interpretations and meanings. While recognizing targets inside the images one has to deal with more interpretational processes than in perceiving the reality. Through associations one can link unseen features into familiar objects.[66]

For example, in face recognition one can quickly perceive the essential and structural features of a face. The recognition of a familiar face happens through the distinctiveness of a face.[67] Face recognition requires holistic recognition, which has its advantages also in object recognition. Instead, the recognition of letters is more like part-based recognition, useful in object recognition but not in face recognition. There is also a perspective according to which it is not possible to recognize objects without the cultural context surround-

ing them. One can think that the influence of the past into human beings cognitive processes is much more complicated process than just a hint some processes, which store information. We learn to perceive things through human communication, and the produced knowledge will move on to new situations as models, ways, and principles of action.

Perception is, in a sense, pattern recognition but not in the sense of recognising a simple template, like the visual equivalent of a paradigm. It is more like the ability to compare and contrast similarities and differences, and co-ordinate them as variations. Such a co-ordination is not conscious in the sense that one spells it out in his or her mind, nor even in the looser sense that it is under voluntary control, or that one can easily become conscious of it. Rather it is in the pre-conscious area, a zone of mental operations, which are sometimes easy, sometimes difficult, and often impossible to render conscious. The mind has many levels and sub-systems of which some are low-level reflexes, or sequences of motoric instructions. Others are perceptible but normally they interest us very little. Much of our complex, higher-level thinking is preconscious too. One rarely can spell out every stage in an associative chain. Most reconstructions of associative chains are done by retrospective hypothesis, and they never explain the omission of equally available alternatives, and they can hardly cover more than one aspect of such search procedures. The mind sets out from several aspects of a task in situation simultaneously, and what it offers as a solution to these multiple requirements is the product of convergence from every feature of context, content, function, and goal. The model of multiple, simultaneous operations allows one to understand the brain's remarkably efficient compromise between speed and heterogeneity. Rather than following old association chains, the brain must have far more efficient systems for cross-indexing and excluding information. For most of these operations,

consciousness is unnecessary, and full articulation in consciousness would consist of impossible slowness. Most of the conscious thinking takes the form of vague awareness, where the vagueness stands for a pre-conscious knowledge, which can often be so quickly retrieved, that one thinks of it as having been conscious all the time.

### THE NATURE OF VISUAL THINKING

According to Rudolf Arnheim perception itself is cognitive, to see is to perform operations on visual materials. The cognitive operations called thinking are not the privilege of mental processes above and beyond perception but the essential ingredients of perception itself. It is a question of active exploration, selection, grasping of essentials, simplification, abstraction, analysis and synthesis, completion, correction, comparison and problem solving. These are the ways that the mind treats cognitive material at different levels.[68] Each of these operations is a component of intelligence and of perception. Take, for example, the fundamental operation of selection. If one is to select some aspect of a visual situation for attention, and for further processing, then one must select a particular shape, colour, patch, or line. The same is true of all such operations, which are thereby shown to be indisputably both cognitive and conducted from the very beginning in visual terms. That is why Arnheim called them *visual thinking*.

A difference between passive reception and active perceiving is contained in elementary visual experience. Arnheim insists that although a retinal projection is given, it is not the essence of perception. That given world is only the scene on which most characteristic aspect of perception takes place. The perception takes place through glances, directed by attention, and focusing the narrow range of sharpest vision on different aspects.[69] It is an active concern of the mind. Perception also consists in the formation of *perceptual concepts*. Vision

deals with the raw material of experience by creating a corresponding pattern of general forms, which are applicable not only to the individual case at hand but to an indeterminate number of similar cases.

Arnheim does not want to point out that perceiving is an intellectual operation. What he wants to say is that there are striking similarities between the elementary activities of the senses and the higher ones of thinking and reasoning. The same mechanisms operate on both the perceptual and the intellectual level so that we need terms like concept, judgment, logic, abstraction, conclusion, computation, to describe the work of the senses.[70]

Perceiving accomplishes at the sensory level what in the realm of reasoning is known as *understanding*. Much of human inference depends not on deduction, but on inductive probabilistic reasoning under conditions of uncertainty. Everyday inductive reasoning and decision making is often based on simple judgment heuristics related to ease of memory retrieval and degree of similarity.[71] Gregory has the same kind of concept on perception. He thinks that perception can't be deductive thinking, because perceiving things is not only a human operation. That's why it is more inductive thinking, and for this reason we can, for example, experience perceptual paradoxes.[72] Thinking can be inductive, and it presupposes selection and choosing. The visual concept of the object derived from perceptual experiences has three properties. It conceives in itself the image, where the object can be seen as three-dimensional, of constant shape, and not limited to any particular projective aspect.

That is why a person's visual concept of the object is based on the totality of observations from any number of angles. It is still a *visual* concept, and not a verbal definition obtained by intellectual abstraction. Sometimes intellectual knowledge helps to form a visual concept.

Object's certain and essential feature will appear best from different angles. Visual concepts must be distinguished from so-called eidetic memory images, which make it possible for some people to project upon an empty surface an exact replica of a scene they have perceived before. We can compare them with afterimages, although they can be scanned by eye movements, and this is not possible with afterimages. According to Arnheim, eidetic images are substitute percepts and as such mere raw material for active vision. For example, the problem of surface perception is difficult because the visual system is confronted with the problem of untangling the different physical causes of the images on our retinas, and filling in missing information when only portions of a surface are visible. Much progress has been made in understanding how the visual system infers surface structure in some simplified images, but still much remains to be done before we have a full understanding of how our visual system works.[73]

## SCHEMES OF THE MIND

Eidetic images are not constructs of the formative mind like visual concepts.[74] The visual concept of anything that has volume can be represented only in three-dimensional medium, such as sculpture and architecture. If we want to make pictures on a plane surface, all we can hope to do is to produce a translation, to present some structural essentials of the visual concept by two-dimensional means.[75] Also Gombrich point out that an image is translation or transformation but this transformation has to be reversed to obtain the required information.[76] In talking about visual concept and perception, it is not only a question of image perception but of perception in general. For example David Marr and Irving Biederman think that representations and descriptions of the mind are object-centred. So, a visual concept is not just a reflection of some aspect.

One can call Arnheim's visual concept a representation or scheme of the mind, which is a three-dimensional model composed through experience, and not a scheme related to the organization of perceptions and of principles concerning with the perception. Arnheim believes that by investigating the drawings of children, we can find out what and how they will perceive things? The early drawings of children show neither the predicted conformity to realistic appearance nor the expected spatial projections.[77] So, children actually draw visual concepts. Earlier it was suggested that children are technically unable to reproduce what they perceive.

The nature of cognition is adaptive, because perception, memory, and reasoning do not operate simply for their own sake. Much of our cognitive apparatus evolved to serve basic functions of life, and human cognition involves intricate systems for motor control, and learning. Arnheim thinks that the drawings of young children show incomplete motor control.[78] The lines are yet accurate enough to indicate what the drawing is supposed to be like. Other theorists have maintained that children aim at making straight lines, circles, and ovals because these simple shapes are relatively easy to draw. This might be true but does not indicate what mental process induces children to identify complex objects with geometric patterns. We cannot interpret them as simplified projective images.[79]

The mental life of children is intimately bound up with their sensory experience, and if the child's mind contains any non-perceptual concepts of roundness, straightness, or symmetry, how would they be translated into visual shape?[80] If they are derived from visual experiences, should we believe that the primarily raw material is processed into non-visual 'abstraction', to be translated back into visual shape for the purpose of image making. Because visual perception is based on optical projection, the sense of sight was deemed incapable of

conveying a truthful image of what three-dimensional things really look like. Nevertheless if we realize that to apprehend a shape of an object by touch is in no way simpler or more direct than apprehension by vision. For example, to experience space kinaesthetically, the brain must create that experience from sensory messages that are not spatial, and kinaesthesia involves the same kind of task as vision.[81]

A grown up person selects visual interpretations concerning different objects on the basis of visual information at hand. Other senses, like touch, will affect our perceptions, but they do not determine the perception.[82] Perception does not consist of photographically true recording of something, but more like reaching out for the structural features of something. In perceiving an image one perceives actively the structural features of an image. The human mind can be forced to produce replicas of things, but it is not naturally geared to it. Since perception is concerned with the grasping of significant form, the mind finds it hard to produce images devoid of that formal virtue.[83] An artist may start his or her work based on an idea, which is then worked out through some vague scheme, and then gradually fixed with new ideas. If an artist tries to reach out something, which corresponds to real perception, then what kind of scheme or mental representation is there to be fixed? One can think that the concept of a scheme might be different when applied to perception of reality than to representation of it.

Perception depends on active, psychologically based processes. It is accepted that stored knowledge and assumptions actively affect all kind of perception. Perception consists of forming visual concepts, and mental representations, and making an image is like producing representational concepts on the basis of visual concepts. These concepts and representations are structures consisting of essential and special features. This means that although a mental representation of a mind or a visual concept contains more information about

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an object than what we can perceive from one perspective, it still is a simplification of the object.[84] Phenomena of this kind find their explanation in what gestalt psychology describes as the *basic law of visual perception*: Any stimulus pattern tends to be seen in such a way that the resulting structure is as simple as the given conditions permit.[85] Simplicity can be defined by means of information theory: The smaller the amount of information needed to define a given organization as compared to other alternatives, the more likely the figure will be so perceived. Both a psychologist and an artist must come to realize that the perceptual experience of looking at a figure cannot be described as the sum of the perceived components.[86] Objective and subjective simplicity do not always run parallel. A perceiver may find a sculpture simple because he or she is unaware of its intricacy, or find it confusingly complex, because he or she has little acquaintance with even moderately elaborate structures.[87]

It appears that we have a tendency to see things as wholes. What is seen in a particular area of the visual field depends strongly on its place and function in the total context. Of course, the structure of the whole may be modified by local changes. This interplay between whole and part is not automatic and universal. A part may or may not be influenced by a change in the total structure. This illustrates just that any visual field behaves as a gestalt.[88] If attention is focused, we can see details, but when attention is split, we perceive more about whole than its parts. So, the quality of attention reflects the nature of perception. Even though well-organized figures cling to their integrity and complete themselves when distorted, we should not assume that such figures are always perceived as undivided, compact masses.[89]

Shape is not the only factor determining the splitting of visual field. Similarities and differences in brightness and colour can be even more decisive. The appearance of any part depends, to a greater or lesser

extent, on the structure of the whole, and the whole is influenced by the nature of its parts. Arnheim thinks that no portion of a work of art is ever quite self-sufficient.[90] Picasso, after experimenting with sketches of rather complex hands and figures for his mural *Guernica*, made them much simpler in the final work. Every painting, sculpture or film carries meanings. Whether they are representational or abstract, they are about something. An image can present a visual statement, and the simplicity of art objects involves not only their visual appearance in and by itself, but also the relation between the image seen and the statement it is intended to convey. For example, simplicity requires a correspondence in structure between meaning and tangible pattern. Gestalt psychologists call this *isomorphism*, a requirement for design in the applied arts as well.[91] A visual concept is something that comes through visual, and not verbal thinking. Generally, the models, descriptions, and representations stored in memory are usually visual.

## COGNITIVE VARIATIONS IN PERCEPTION

There are two kinds of perceptual thinking, which Arnheim distinguishes as *intuitive* and *intellectual cognition*.[92] Intuitive cognition takes place in a perceptual field of freely interacting forces., through which the perception of an image is born. This interaction is very complex field process, of which very little reaches consciousness. An example would be, how one apprehends a work of art like painting. The observer perceives the various components of an image, the shapes and colours and relations between them. The final outcome becomes conscious as the perception of a painting. A great deal of thinking and problem solving goes on in intuitive cognition. Through intellectual cognition an observer isolates items and relations among items from the perceptual field in order to establish the particular nature of each. Intellectual processes follow each other in linear succession.

By gradually solidifying the perceptual concepts gained from direct experience, the mind acquires the stable shapes.

Our perceptual movements, whether obviously physical, like eye-movements and re-focussing, or more elusively mental, like movements of attention, are physiological by nature. As co-ordinations of mental and physical operations they involve physical tensions, which scientific psychology has so well described, and which mainstream aesthetic theory has treated in terms of tension, balance, rhythm, and all the other elements of pictorial composition, and its abstract and concrete significations. Images seem to provoke these factors in which real life viewing does not, partly through the image's tight unity, partly through the relative restriction of eye movements, or partly through contradictions between the pattern and its implied scene. Looking at images uncouples perceptual processes from most being there reflexes, leaving them available instead for sensitised significance.

The recognition of images can be compared with previously un-experienced targets or views with insufficient information, which both require more specific perception than a familiar view. The perception of images requires some kind of thinking, comparison, knowledge, experience, and attention. Through experience an observer works toward solution that is highly appropriate, and this process leads into interpretation. Partly the process is unconscious, and that is why an observer sees through image perception the target, and does not consciously think all of his or her choices.[93] If we think of image perception as visual thinking, we can realize that there is a lot of information in the image, which we don't use. Another thing is that we can identify different targets based on quite little information. Perception is not just recognition, but more or less it is perception and under-

standing of spatial structures, and understanding of different objects and parts and their relations in visual field through visual thinking.

The normal function of the rules and conventions of pictorial composition is to encourage maximally efficient internal relationships as related to context, content, and assumed purpose. Much of interesting discourse involves some shift of alteration to conventions, and special purposes may require that normal procedures be bent, twisted, reversed, or broken, for example, a filmmaker may think that it is important to draw the spectator's attention to facts and features of the frame, not only as a condition of pictorial representation, but as a contradiction of the represented items. This guidance of pictorial glances might then reverse normal procedures. One reads the shot as an especially integrated whole, but incompletely integrated with competition for the attention between sub-configurations. This competition constitutes a form of structure resulting in tension, balance, and dynamics. The interpretative attention bestows special significance on some features of pure graphic form, while overriding others in its pursuit of significance.

An image is relatively closely structured, yet internally unstable. Its configurations recombine as the spectator's eye patrols over the image. The shot presents a logical oddity in being both a composition, and a mere surround for a set of clues to something in itself as invisible as most associations, meanings, and references are. The shots of a film have a *pictorial* relationship with one another. For example, the juxtaposition of two strong compositions can create a shock, a collision, a sensation of optical clash or contradiction, or a kinetic dynamic. The spectator's eye can de-prioritise the change of shot, and concentrate instead upon elements that link different shots together. Thus one can recognise a second shape as the same thing from another angle, and prioritise the continuity. The juxtaposition of shots

is only a prelude to the *semantic* interaction between shots. Editing practice is dominated by this dialectic of contrast and continuity, difference and similarity. The spectator's mind must handle all this very fast with relating different shots, and overlooking the cuts.

When observing an image, one single and special feature can already activate representations of the mind, and lead to the recognition of objects. So, the testing of different hypotheses is not every time necessary. On the other hand, the perception of images is also connected with the understanding of spatial structures and relations, and this kind of understanding requires visual thinking. When an image is very complicated, and offers lot of information, one might need more conscious deductive processes to fulfil the task of understanding, and sometimes when there is not enough information to select the right object, the mind cannot decide how to see the object. Complex images test the idea that the interpretations include experimental reflection.[94] Complex stimulus impulses inside an image create a situation where the schemes as mental representation of memory are gradually more and more focused toward the final solution.

Perception is not only the gathering of information or activating the mind and its representations, but it is also foreboding of future perceptions, because visual experience is dynamic, and deals with psychological forces. In a psychological framework image-based discourse functions on many cognitive-emotional levels, and the spectator uses a wide set of dispositions to make sense of the various levels of image-based discourse.[95] Perceptual inductions differ from logical inferences, because inferences are thought operations that add something to the given visual facts by interpreting them. Instead, perceptual inductions might be based on previously acquired knowledge of the world. So, in this sense perception is an experience that is born out of the information and the forebodings connected with it. Fore-

bodings are important for survival, and in this meaning very natural ways of behaving and thinking. It is also possible that forebodings are connected with image perception and interpretation. An image leaves always holes, which are there for the observer to be fulfilled. What we see depends on the previous knowledge of what we know. Forebodings create illusions, and an observer can fulfil the holes, if there is no doubt how to do it. Through our experiences it is possible to do the fulfilling, to reflect life and ideas into the image.

The human mind works as an interplay of tension-heightening and tension-reducing strivings. The same twofold dynamics is reflected in every work of visual design.[96] In a work of art might be a structural theme, suggested by the subject matter, but constituted first of all by a configuration of perceived forces. The theme is given a simplest form compatible with the character of the statement. According to Arnheim, visual perception consists in the experiencing of visual forces.[97] Often natural objects possess strong visual dynamics because their shapes are the traces of the physical forces that created the objects. Works of art are seldom produced physically by the forces we perceive in their shapes. All the dynamic qualities in the works of art are not created by physical forces, and even if all visual dynamics were due to the direct manifestation of physical forces, this would not account for the perceptual effect of the final product on the mind of the observer.[98] This effect is not due to the observer's knowledge of its cause. We must look for the visual properties of the percept that are responsible for the phenomenon.

## MENTALITY AND CO-ORDINATION

An intelligent organism operates in a perception-action cycle, taking in sensory information from the environment, performing internal computations on it, and using the results of the computation to guide

the selection and execution of goal-directed actions. The initial sensory input is provided by separate sensory systems, including smell, taste, haptic perception, and audition. In its more complex forms, for example, learning is intimately connected to thinking and reasoning. Humans are not only able to think, but also to think *about* their own cognitive processes, resulting in meta-cognition. They can also for m higher-level representations.

In cinematic narration editing is possible because the mind can achieve quite complex co-ordinations in, literally, split seconds, and this also touches on the nexus of relationships between form and experience, knowledge and perception, and established and in-coming information. One aspect in film culture has aspired to a rigorous logic, within which all the phenomena will become one tightly coherent structure; akin to a logical system at least as linguistics-based structuralism has conceived such an approach. Unfortunately its paradigms have maximised the difficulties in understanding the nature of mental operations on which film form depends. Insofar as thought is co-ordination, it must seek out, and yet tolerate both external and internal discrepancies.

While some discrepancies are repressed, like conflict-inducing wishes in a Freudian theory, or "cognitive dissonance" in a more general way, many discrepancies are recognised and endured, or used and indeed enjoyed. And this goes on not just as riddles, paradoxes, jokes, surprises, and so on, but also in ordinary thought. It has been truly said that contradiction is more the cause than the product of consciousness. It may be, however, that discrepancy is more basic than contradiction, since the mind is geared to integrating systems, which, without necessarily contradicting one another, are disparate. Most obviously this has to do with the sensory systems, sight, sound, touch, and our awareness of the different positions of the different

parts of our body in relation to space and gravity, momentum and counter-pressures.

This also deals with mental sub-systems, like networks of associations. It seems that the mind monitors these various factors simultaneously, and computer scientists have begun to underline the importance of "parallel processing", in effect, the simultaneous processing of independent variables, whether heterogeneous or homogenous. It is this constant comparison of discrepancies, which enables one to differentiate between images and scenes, or to compare mutually exclusive paradigms or models for the same phenomenon.[99] In a sense, perception is pattern-recognition, not in the sense of recognising a simple template, like the visual equivalent of a paradigm, but the ability to "compare and contract similarities and differences, and co-ordinate them as variations. A good example is the "constancy of vision" mechanism, which enables us to "see" a table as rectangular even though, from all normal eye levels, perspective presents it as an irregular trapezoid, which, as we move around it, is a constantly changing series of forms.

More probably is the case that the mind sets out from several aspects of a task-in-situation simultaneously, and what it offers as a *solution* to these multiple requirements is the product of convergence from every feature of content, context, function, and goal including desire, wish-fulfilment and fear. "Simultaneous processing" might be a better phrase than "parallel processing", because parallels don't integrate so well. At any rate, the model of multiple, simultaneous operations allow one to understand the brain's remarkably efficient compromise between speed and heterogeneity.

Rather than following old association chains, the brain must have far more efficient systems for cross-indexing and excluding informa-

tion. For most of these operations consciousness is unnecessary and indeed, full articulation in consciousness would be impossible slow. Much conscious thinking takes the form of vague awareness, where the vagueness stands for a preconscious knowledge, which can often be so quickly retrieved that we think of it as having been conscious all along. For example, we often *sense* and with great confidence, that an argument contains a discrepancy, before we define what it is. And in normal speech, we somehow know that we know what to say, and roughly what it is, but without knowing exactly what it is, or what words we will use. And after the moment we've said it, it would be hard for us to repeat the words exactly.

Often the conscious part of our thinking is restricted to a co-ordination of selected items of data, the setting of a goal, and a volitional decision to perform the task. The actual performance is no more conscious than instructing each foot alternately to take a step. Consciousness does not think. Perhaps it is the result of the higher mental sub-systems registering discrepancies from one another. Consistency is not the basis of constructive thinking; it is what thinking *constructs* out of the disparate and the discrepant. Hence we-feel quite at home with all the irrationalities of film form: like "this picture here" also being "this place elsewhere", and like the edited flow of shots presenting incompatible spaces within one screen space; and so on.

To make sense of a film, the mind draws on our general understanding of the cinematic situation, of which its forms are part, and of our general knowledge of the wider world, of which our knowledge of cinema is a part. The ability of quite young children to make sort of sense of TV depends less on receiving verbal disquisitions or deconstructions of the medium, but rather through everyday experience of it: how parents treat its "illusions", that the dog on the screen will never bite us, that its images, and their multiple viewpoints, analogise

with perspective, which of course exists in the material world quite independently of its various approximations on paper. Even in real-life vision we draw on basic mechanisms of form-perception when we understand that in audiovisual narration it is question of viewpoints which are moving, or that in a certain scene the heavily shadowed side of a man's face forms part of the same object as the visually very different sunlit side of that face, and that the shape of a head depicts a solid object, not a flat or convex surface.

Apart from visual knowledge we need a probabilistic knowledge of the world. This means, for example, in a scene that the gun going off in one shot probably links with another man falling in another shot, and that a train compartment is not a room in a house but may well start moving out of the station, and so on. These items are not coded, and films can and do spring surprises on us. But spectators with no knowledge of guns or trains can hardly understand the spatial, or narrative, connections between shots. Unless we assume that all beetles are small, a close-up of a beetle could read as a gigantic beetle, unless we have taken care to insert some explanation or to include a familiar object as a conspicuous scale in the same shot. If the spectator understands these things, they teach him film form, which is why no one learns film form as he learns a verbal language.

Assertions that the structures of verbal language dominate perception, or film form, labour under the grave disadvantage that no evidence exists to prove it, and only piecemeal shred of evidence to even suggest it. Many effects attributed to verbal forms are better explained in terms of deficient or variant knowledge of the world. That cross-cultural, cross-sub-cultural and ideological differences radically affect experience, perception and film form is after all the commonest justification of art. This means that by rendering other thought-forms visible, it enables us to try them on for size, or for communicative or diagnostic purposes.

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## METAPHORICAL ASPECTS

Philip Johnson-Laird has proposed several features, which are characteristic of the human consciousness.[100] One is that it functions as a superior operational system. The concrete and detailed control and implementation of muscle innervations, for example, take place on a non-conscious level. We have no consciousness of the numerous muscle innervations, which enable us, for example, to skate. But we have a conscious high-level operational control of our behaviour via a much more general program. This program could look like a script in the sense in which the term is described in Schank and Abelson (1977), that is, a narrative or a summary of a sequence of acts. Important aspects of storytelling can be seen as developing out of the procedures we use when planning. According to Johnson-Laird, another essential feature of human consciousness is the ability to the embodied brain to make a model of it. Because this model has to be contained in the human brain itself, it follows that it must necessarily be much simpler than the brain. The function of this model as linked to its ability to improve the quality of the acts of which humans are capable whether these are physical or mental.

The mental models of the consciousness are primarily *phenomenological*, representing exterior space, with the inclusion of agents and objects in this space. The raw material for these mental models consists of perceptions, and mental models describe the way in which we act in the world by importing features of it, using aspects of it as tools. Models are not just representations; they are tools, concepts that owe a great deal to the computer revolution that has diminished the clear-cut opposition between mind and matter. An essential aspect of the mental models is the construction of the model of the person itself. The model acquires its elements partly from the exterior world, partly from the inner world. The conception of the person as an acting figure in space is acquired from the exterior world by imitation.

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So, the person uses his or her visual perceptions of other persons as model schemata.[101] The conceptions of abilities to perceive, to feel, and to think are acquired from the interior world, but the content of the thought processes is mainly represented in forms from exterior space.

Similarly the imagination used in more abstract thinking will employ model images of phenomena in and acts performed in an exterior, objective space, which is marked linguistically by the use of figurative language.[102] The figurative and metaphorical aspects of language make it reasonable to assume that, from an evolutionary point of view, abstract thinking has developed on the basis of the concrete scripts of acts and scenes which have gone through a process of extraction of essential features that could be used as models for other mental processes. When Kosslyn (1980) describes the way in which a person is able to imagine that he is 'rotating' or 'scanning' a given complex of mental images, this implies that the mental processing of images takes place as a simulation of perceptual processes with external objects. Besides scripts of actions, we also have scripts of perceptions, which enable us to carry out acts of hypothetical perception, that is, imagination.

LANGUAGE AND IMAGE CONSIDERATIONS

The ultimate theme of the image, the idea of creation, is conveyed by what strikes the eye first and continues to organize the composition. The forces that characterize the meaning of the story come alive in the observer's mind, and produce participation that distinguishes artistic experience from the detached acceptance of information.[103] The image is determined by the totality of visual experiences we have had with the object during our lifetime. The interaction between the shape of the object and that of things seen in the past is not automatic

and not ubiquitous, but depends on whether a relation is perceived between them.[104] The principles in art will learn us how things can be seen not only as such, but as they are represented. Also verbal descriptions might stir up visual memory traces, and can affect internally into the interpretation of images.

The same can be said about thinking in other media. For example, kinaesthetic thinking requires the selection for attention of particular bodily movements, and verbal thinking requires the selection of particular words and sentence structures. Thinking is the performance of these kinds of operations on the elements of a particular medium. So, if thinking is conducted in the terms of a particular medium, then to put it into the terms of a different medium is to change it. Visual thinking cannot be put exactly into words, because all translations are distortions of the original thought. That is why thought can remain true to itself only if it remains faithful to its medium, and this is the reason for insisting that we keep kinds of thinking separate.

In Arnheim's notions related to perception, the media correspond to our sensory channels. In the case of sight, the medium is visual and in the case of hearing, the medium is sound. These are the two sensory channels that Arnheim thinks as the most important for thinking. In thinking about language, the situation is different, because there is no single sensory channel corresponding to it. Language can be spoken, in which case it is heard, or written, in which case it is seen. So, language is not so much a medium of perception but of representation, a medium in which we often speak of the visual arts as different media like painting, drawing, sculpting, etc.

Language is not merely a more or less systematic inventory of the various items of experience which seem relevant to the individual; it is also a self-contained, creative symbolic organization, which not

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only refers to experience largely acquired without its help but actually defines experience for us by reason of its formal completeness and because of our unconscious projection of its implicit expectations into the field of experience.[105] This was developed into the Whorfian hypothesis that language moulds thinking.

Thinking is generally affected by language, which itself adapts to thought and action. The use of language also calls attention to the different aspects of environment and culture. There are differences between existing cultures and languages. The importance of writing for societies and for individual thinking can hardly be overestimated, and its importance was clear to the earliest civilizations in which it developed. This writing consisted of picture symbols, which became connected in conventional ways to express ideas. They became associated with sounds of spoken language as the sound of the name of an object denoted by the symbol became the name of the symbol. For example, cultural behaviour is the process of symbolizing the surrounding world as well as the own behaviour.[106] It is a process, which works in two directions: it implies the transformation of data, the transformation of nature, and it contributes to the identity of a person or group that is the agent of this symbolizing activity. Culture is not a linear activity of discovering the world, because there are many cultural approaches at the same time. The most characteristic feature of culture is its pluralistic character. In art as well as in sciences, in the continuous self-reinterpretation of various religions as well as in the meandering flow of economic order, reality shows always new aspects and structure. The existing map is not filled up, but rewritten in the new structures and symbols. Culture and reality are interrelated to such a degree that the restructuring history of cultures belongs to reality itself.

In order to interpret the functioning of the senses properly, one needs to keep in mind that they did not come about as instruments of cognition for cognition's sake, but evolved as biological aids for survival.[107] This means that perception is purposive and selective. Thinking about art media as a media of representation, one can conclude that just as perception is not a passive reception of sensory impressions, so representation is not imitating, because perception is an active search for visual structures and representation is an active search for equivalent structures in a medium of representation. This search requires active and constructive experimentation within the medium of representation. Representation is as thoroughly cognitive as is perception.[108]

# 2

# AESTHETIC &
# PICTORIAL
# COMMUNICATION

THE SENSE OF ART

Art is the imprint of life upon our consciousness, and a facet of truth projected within a particular framework of understanding. Relation of representation to art is and old and enduring process. Already with Plato and Aristotle, we are in a situation were imitation and resemblance were considered to be the main factors in art. This lasted well into the late nineteenth century, when philosophers became increasingly aware of art as less concerned with imitation or resemblance and more concerned with aboutness. Works of art by Picasso and Duchamp are still about something. Ready-made and found objects such as *Fountain* and In *Advance of a Broken Arm* possess aboutness.

They have semantic content, and the artist intended them to mean something. Even avant-garde works of art that defy interpretation have a subject, and mandate interpretation. On the other hand, pure orchestral music and non-representational architecture seem to resist a definition of art in terms of aboutness. There is much art that is about anything. Pure decoration is another example. Such artworks can be simply beautiful, 'beneath interpretation', and 'solely in virtue of the perceptual impact they make on us'.[109] According to Carroll, representation-type theories of art are inadequate to address all possible cases, much art is indeed representational, and visual art is especially likely to be representational.[110]

Thinking about expression-theoretic account of art we come into terms of different emotions like sadness, joy, or fear. They became especially pronounced at the end of the eighteenth century, perhaps as a result of Romanticism and the rise of absolute music, and they resulted in a notable subjective turn in artistic practice throughout the nineteenth and early twentieth centuries.[111] According to Carroll, x is a work of art if and only if X is (1) an intended (2) transmission to an audience (3) of the self-same (type-identical) (4) individual-

ized (5) feeling state (emotion) (6) that the artist experienced (himself/herself) (7) and clarified (8) by means of lines, shapes, colours, sounds, actions and/ or words.[112]

When philosophers of art talk about what, for example, poems express, they are not thinking broadly about the communication of ideas. For them, what get expressed are certain human qualities (also known as anthropomorphic properties), notably emotional tones, moods, emotively coloured attitudes, and the like. That is, the concept of expression that concerns philosophers of art is the one in evidence in sentences like: 'This artwork expresses joy'.[113] But this seems to be too narrow a conception of expression, although many philosophers, like Kant, write about the expression of aesthetic ideas, and these are not mere feelings. Much art is expressive, but it is not the case that all art is expressive of emotion. A great deal of twentieth-century art is preoccupied with ideas, rather than emotions.[114]

Nelson Goodman considered the idea of art media as symbol systems, which differ from natural languages in that they are non-discursive and are capable of being replete with significance. The use of these systems to create meanings is governed by rules, which are mostly intuitive and natural, but are also partly conventional. In this view, artistic thinking is the processing of the terms of a symbol system, creating significance and following the appropriate rules.[115] Aesthetic thinking is the perception of that significance in the arrangement of those terms. Thinking in art is the goal of aesthetic education. While aesthetics as a concept is surrounded by some ambiguity, much of it emanates from the very nature of aesthetics itself. Aesthetics deals with how viewers interpret the nature of art and why they respond to art as they do. The ambiguous and problematic issues related to aesthetics emanate from variable character of individuals and human cultures generally, and the subsequent variable interpretations and

meanings given to artistic phenomena. In this sense, aesthetic study deals with the phenomenological and cultural dimension of artistic experience.

Aesthetics deals with the variable nature of art, and involves contested concepts. For example, Morris Weitz's theory of art as a contested concept is based on the work of Ludwig Wittgenstein who argued that no one trait can be found in common among some categories of meaning and for some types of objects and activities that are called art. Weitz followed this and described the quest for a single theory of the nature of art as a fool's errand. No one theory sufficiently explains art for all times and all places. Artistic meanings, functions, and forms are adjustable to changing individual and social contingencies.[116] We should think of art as an open concept, one whose boundaries could never be finally drawn and whose future could not be predicted.

We can think of artworks as things that have one or more of a number of qualities, chief among which are those identified by the major historical theories of art we have considered. A work may have some of the qualities identified as important by the representational, expressionist or formalist theories, no one of them being essential, any one of them being sufficient. Aesthetic study can proceed from the premise that the aesthetic instructional enterprise is problematic and embedded in social implications and significance. There are two slightly different ways of talking about aesthetic qualities and the experiences around them. Firstly, we can think of their character as totally perceptual like perceiving colours. So, it is possible to speak of the quality of aesthetic experience, and the pleasure of things. Secondly, we can think of aesthetic qualities related to meanings, and try to interpret their significance in order to understand them. It is a question of the depth of art and the insights it brings. Our tradition

of art has for over a century been in a state of continuous change. It has consisted of a succession of movements and styles, accompanied by a value system that promotes change and results in the deliberate search for the new and the discontinuous.

For example, formalism in art arose as a reaction to representational theories of art. Modern artists eschewed pictorial illustration, composing paintings out of often non-representational shapes and masses of colour. Their aim was not to capture the perceptual appearances of the world, but often to make images noteworthy for their visual organization, form, and arresting design. John Cage's music or Robert Morris's sculptures are formless but nevertheless art. It is not always clear what a significant form in art should be. Problems seem to be erupting with respect to the requirement that the exhibition of significant form be designed or intentional.[117] Formalism was not content with providing a descriptive account. It was an attempt to influence artistic practices by identifying what is important about art. It offered a definition of art that was more evaluative than descriptive. By identifying what it saw as important about art, it wanted to influence the way we decide what things are artworks rather than simply to describe it. Actually it did not clearly distinguish the descriptive and the evaluative approaches, but seemed to assume that they amounted to the same goal. Making a work of art is an intentional activity. Making art cannot be viewed as something that involves only an artist and an art object; artists seek to convey meaning to others. In order to do this, they must consider the perceptual and cognitive capacities to their audiences.

They must believe that others possess capacities and tendencies to see, think, and reason just as they do. They must also assume a common body of knowledge and belief, and they must assume a similarity of interests between them and their audience. It is by exploiting all

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of these things that artists are able to manipulate the physical materials of their chosen medium and produce configurations that are comprehensible and interesting to others. Art appreciation is in large measure *design appreciation*, knowing how the work works, seeing how its parts are intended to function toward the realization of the points or purposes of the work. A natural object of artistic appreciation is artistic form, where artistic form is understood functionally. What we appreciate in an artwork is how the forms function as means to bring about the ends of the artwork. How suitable an artwork is designed to acquit its purpose is a remarkable source of the pleasure one can find in an artwork. Contemplating the way in which their design functions to secure the point frequently gratifies the reflection upon artworks.

Creating an artwork involves electing the forms that the artist believes will function optimally toward realizing the point or purpose of the work. Forms are selected because they are intended or designed to perform certain functions.[118] In order to analyse the form of an artwork functionally, it is necessary to have some conception of the point of the work, which may be easy to isolate but it can also be elusive. That is why a formal analysis can go side by side with other interpretations of the work. Through a thorough interpretation it is possible to pick up the themes of the work, and use them as guides to relevant formal choices. Philosophical problems can also arise from the activities of art critics and historians. In fact, when people talk about art their assumptions may become more noticeable and their inconsistencies more obvious. For that reason, much of aesthetics is reflection on what people say about art, rather than on artworks themselves. Aesthetic can also be used as an adjective to describe states of mind of the observer. Our state of mind is aesthetic whenever we look at things for the qualities and significance of their appearances. The methods of aesthetics cannot be reduced to rule

but can be described as considering examples and counter-examples, making connections with earlier knowledge, and looking at language carefully, and considering the history of ideas.

## TOWARDS AESTHETIC INTENTIONS

The historical, philosophical approach to aesthetic deals with what aestheticians have said, styles in aesthetic dialogues, and schools of aesthetic thought. It offers a structured approach, closely resembling the content structure and teaching methodologies found in general education. This kind of educational and philosophical perspective is compatible with academic rationalism, because it is an intellectualised approach to aesthetics. Aesthetics is a unique form of perception and experience, and the proponents of this approach usually believe that art can provide intense experiences that entail perception of visual and tactile qualities integral to the object being viewed. There are real differences in aesthetics concerning the works of art. Some of them are better than others, and this means something different than that a given person simply likes some works of art better than others. At the same time, I want to work toward a theory of establishing questions around aesthetics that are open and flexible. There must be room for reasoned argument concerning the relative aesthetic merit of various works of art. Aesthetic experience occurs within the viewer and not literally in the object itself.

A central difficulty in establishing a theory of aesthetic judgement is that aesthetic value seems always to come back to experience, and experience is by its nature subjective. The primacy of aesthetic experience in establishing aesthetic value must be maintained. Great works of art are considered great, ultimately, because of the quality of the experience they are able to provide. Regardless of any formal qualities that could be pointed out in a work of art, e.g. intricate line,

complex harmonies, fully-developed character, etc., if the work as a whole did not incite an aesthetic experience of a certain quality, it would not be considered a great work of art. Works of art have in common that they have been crafted, composed, designed and possibly presented by individuals, whose intent is that the work will be used as an object of aesthetic interest in some way.

Aesthetic study entails developing skills that will enhance one's ability to respond aesthetically in a variety of contexts. For purposes developing aesthetic skills, one can call it *aesthetic scanning*. By aesthetic scanning, it is possible to mean examination of the sensory, formal, expressive, and technical aspects of the art object in question. It is possible to use aesthetic scanning as a tool leading to heightened responses to works of art and translating into an aesthetic sensitivity to all of the visual surroundings. Of course, it is possible to analyse one's experiences, and take a closer look on what aestheticians have said, and study different cultural definitions of art to develop aesthetic and perceptual acuity, experiences, and so on.

According to this point of view, aesthetic perception is worthy of singular attention, and it is also evident that his approach accommodates art educational activities and assumptions like transfer of knowledge and skills occur from art making.[119] Aesthetic perception is more properly construed as an active search for meaning. In scrutinizing a work of art, a viewer will assume that an artist has made something meaningful and will try to make sense of it. Viewers will be concerned with what an artist intended to do in making that work. They will also go beyond trying to decipher intended meaning in order to organize their perceptions in other ways. Viewers will relate these newly discovered understandings to their lives and seek personal insights from works of art.

Looking at works of art is challenging because they can be understood in different ways and, for this reason, present puzzles and problems for viewers. A commonplace observation is that a work of art is never understood completely. Many people find viewing art to be an intrinsically rewarding experience. And many believe that viewing art contributes to self-understanding and personal development. In looking at works of art, we confront the ideas, beliefs, and feelings to others, all of which reveal our own limitations. We accommodate different perspectives by reorganizing our cognitive framework to assimilate new points of view.[120]

While many artistic goals are personal, others are shared. When artists make art, they join an ongoing enterprise in which certain aims or goals are already established. They can choose to reject some but cannot reject them all. Otherwise, what they would create would not be recognized as a work of art. Artists working in the same art form, for example, cinema, painting, sculpture, and architecture, will have a cluster of related goals. Some but not all will overlap those of artists who work in another art form. A painter or a sculptor, for example, will often attempt to represent objects or things, but this is rarely the aim of an architect. Yet painters and sculptors, as well as architects, attempt to create unified aesthetic objects. Artists working in different artistic genres will also share certain goals. Painters of landscapes, for example, will typically have different (if overlapping) sets of goals from those who paint still lives or make films. The former might be concerned with the changing patterns of sunlight and the rendition of atmospheric effects, and the latter might exhibit a greater interest in rendering textural effects.

Different artistic goals are also inherent in an artist's style. Let us consider, for example, Expressionism, Cubism, and Surrealism, which all reject Impressionism. Each, however, does so in pursuit of a charac-

teristically different set of artistic aims. Expressionist artists typically are interested in the depiction of personal emotions and feelings, subjective concerns that are often occupied with a protest against what is felt to be a hostile social milieu. Cubist artists, on the other hand, reject what is felt to be an Impressionist occupation with the mere rendering of evanescent effects of light and atmosphere. They strive to create pictorial alternatives to an optical conception of reality through abstracting the shapes of objects and arranging them on a flat plane. Surrealist artists, unlike Impressionists, are concerned with the unconscious aspects of the psyche. They seek to liberate the creative unconscious through the use of a-logical automatic procedures, startling juxtapositions of unrelated objects, dream imagery, and private symbolism.

Many of the goals that an artist has in making a work of art are related teleologically. There is a means-end relationship between and among them. Applying paint to canvas, for example, is a step Picasso took in order to realize the goal of producing a representation of the bombing of Guemica. Having an end in view, however, does not mean that an artist must be constantly thinking about goals in the process of making a work of art. Nor does it imply that an artist's goals cannot be modified in the process of creating a work of art. Artists often do change their goals as they receive feedback from the work and as their ideas and feelings evolve.

TOWARDS ARTISTIC INTENTIONS

An artist produces a work of art to convey meaning. Viewers who approach a work of art, therefore, do so on the assumption that it is meaningful. The will try to understand what has been produced. The first question to be asked concerns what the artist is doing or attempting to do in making the work. In asking such a question, the viewer

is inquiring into the artist's goals. These constitute his or her intentions in making the work. Many goals are readily recognized. Because these are recognized immediately, there is a tendency to overlook the role of one's cognitive background in making such understandings possible. Artist's intentions were shaped by the historical context in which they were adopted. Intentions are complex and shaped by culture. At least a part of an artist's intention is formed in light of the history of art itself. The artist intends to produce a work of a certain kind understood in light of the art of the time, and because of that it is often difficult to distinguish discussions of individual artists from discussions of the art world they participated in. In talking about the meaning of the work, it is often useful to have knowledge both of the artist's individual life and of the art world around it.[121]

The ability to understand what Picasso was doing or attempting to do in painting *Guernica* quite literally depends upon the knowledge, beliefs, and understandings that a person brings to bear in scrutinizing his work. Viewers are able to understand much of what an artist intended through scrutiny alone because artists have traditionally considered the perceptual and intellectual capacities of their audiences. Someone who truly intended to represent a cat, for example, would not produce a configuration that would likely be read as an image of something else. Artistic intentions, then, are in some sense public matters, but understanding the intentions of an artist requires background information and knowledge.

An intention is rarely the unambiguous and easily formulated purpose of the artist one may have supposed. At any time a person has a variety of desires, some of which are relatively transient wishes, others are long-sustained motives, and many lie between these extremes. These desires may be in conflict with each other and they certainly will not all be carefully thought through and articulated. Some of

them may never have been formulated at all, and the artist may be totally unaware of them, and yet they may be most important.

If most works of art are comprehensible to some degree, circumstances often conspire to create estrangement between artist and viewer. In early and less complicated societies artists made work for a restricted audience that shared many of the same interests and beliefs. As a consequence, almost everyone was able to understand the work an artist produced. But as cultures expanded and grew more diverse, artists have tended to work for specific social groups whose ideas and values differed from others within the same community. The range of art objects available to the viewer is also greater now than ever. In earlier times someone's exposure to art would generally be limited to the relatively few works that were near at hand. Travel was difficult, museums were largely nonexistent, and books and reproductions were scarce and inadequate. Now, art from the past as well as the present, from other cultures as well as our own, is readily available to anyone.

There is yet another reason why average people find it difficult to understand works of art. As the making of art evolved from simple beginnings, it also grew more complex and reflexive. Artists were no longer content to serve the interests of other members of the society; they increasingly began to focus upon their own specialized interests. Artists of the twentieth century have often made it a point to stand apart from general society, and individual aesthetic and personal concerns have come to the fore. Fine arts throughout much of their history reflected the values and concerns of the communities artists served; now art tends to reflect the interests and concerns of a much smaller segment of society.

Works of art, then, are inherently problematic. Even though of what artists intend to do is available through observation full understanding is not automatically recoverable through scrutiny alone. Background knowledge is also necessary. Artistic intentions can also be ascertained through interviews with the artist or through public statements in which the artist reveals his or her goals, either directly or through inference. The psychic activities that lead us to infer that there in front of us at a certain place there is a certain object of a certain character are generally not conscious activities, but unconscious ones. Finally they are equivalent to *conclusions*, to the extent that the observed action on our senses enables us to form an idea as to the possible cause of this action. So, there are similarities between the result of unconscious inferences and those of conscious conclusions. Familiarity with the milieu in which an artist works can also assist viewers in understanding an artist's intentions. Part of this milieu is the physical setting in which an artist works. Knowledge of personal events in the life of an artist can also help viewers determine intent. The social and cultural milieu in which artists work also shapes their goals and aspirations. Knowledge of the artistic tradition that an artist inherits often allows viewers to infer artistic goals.

Because Picasso made a painting instead of a sculpture of *Guernica,* for example, viewers are entitled to infer that, like other painters, he intended to produce an arrangement of shapes and colors on a flat surface, not a three-dimensional object to be viewed from multiple vantage points. Because he was painting a public mural instead of an intimate easel painting, viewers can infer that, like other muralists, he did not desire to produce an object that should be scrutinized for its subtle textural and painterly effects. Because he used elements of Expressionism, Cubism, and Surrealism, viewers can infer a cluster of artistic goals Picasso shared with other artists who worked in these same stylistic idioms. And because he combined these stylistic idi-

oms, viewers can infer that his artistic intentions differed from those other artists.

A central conception of cognitive art education is *transfer*, an ability to apply one's learning in new situations. Theoretical problems that develop form assumptions of transfer have been discussed widely.[122] Whether methods and exercises specific to developing aesthetic perception can maintain integrity in art educational programs may influence whether the goal of heightened aesthetic experience is achieved.

Marjo Räsänen defines: "When discussing the theoretical bases for assumption of cognitive transfer one needs to consider both the cognitive characteristics and processes that are considered integral to the study of art, and those that are initiated by art experiences and then later transferred to and utilized in non-art contexts. Both making and exploring art involve a form of thinking that opens the ways to multiple systems of knowing and experiencing. Thinking there is an interaction among modes of thought means that the benefits of art study go beyond their own artistic cognitive outcomes. Artistic cognition consists of constructed, visual forms that are analogous, though not isomorphic; to experience ... art study is a mind-builder different from any other subject area ... art calls for interpretation. Artistic cognitive benefits consist of abilities of translation and transfer opening up the possibilities of multiple meanings".[123] A principal virtue of cognitivism is its ability to explain and sustain a number of ways in which people actually think and talk about art related to aesthetics.[124]

If the power and/or meaning in an aesthetic experience are to be used as a measure of the quality of an artwork, the experience must be a genuine aesthetic experience as that has been defined. Sentimental

experiences and trance experiences can also be powerful and carry meaning. In order to have weight for the evaluation of an art work, the power and meaning in the experience must be directly caused by the work itself, and not, for instance, the result of some chain of association for which the work was only the first link.

When attempting to evaluate a work of art based on one's experience of that work, one must be reflective, interrogating one's thoughts and feelings to be sure of their source. Without substantial self-knowledge, it is difficult, if not impossible; to know whether what one is experiencing has its origins in the artwork or in one's own psychological makeup. The concept of transfer is connected to higher-order thinking, which Lewis and Smith define as a broad term including problem-solving, critical thinking, creative thinking, and decision-making.[125]

Focusing upon artistic intentions as a way of coming to understand a work of art stands in sharp contrast to formalist conceptions of art criticism. Formalist critics believe it is a mistake to appeal to an artist's intentions, a mistake they label the intentional fallacy.[126] For the formalist, artistic intentions are private thoughts, mental events that occur just before or during the process of artistic creation. They argue that attempts to ascertain what these are send critics off on a fruitless quest for biographical and contextual knowledge and away from the work of art itself, the proper locus of critical concern. For formalist critics such 'external evidence" can only be an unreliable indicator of meaning. They reason that such knowledge is often unavailable, either because artists are no longer living or because they may not remember what their thoughts were. Then again, artists sometimes exaggerate when describing their intentions. Critics are thus faced with a dilemma, and, as formalists argue, are better of seeking an understanding of a work of art through careful examination of its internal evidence.

A number of misconceptions underlie the anti-intentional thesis. One concerns the nature of artistic intentions themselves. First, contrary to what formalists believe, critics who seek to understand artistic intentions are not concerned with transitory thoughts that occur in minds of artists but rather with the goals that artists seek to attain in creating works of art with states of mind rather than with mental events. Second, the state of mind of the artist is not private but has a public character. Because making a work of- art involves an attempt to convey meaning, many of these goals will be available to viewers directly. Furthermore, such goals, shaped by beliefs can be inferred through investigation into the societies and cultures in which the artists live. Critics are not forced to rely solely upon what artists are willing to reveal. Third, formalist critics draw an arbitrary distinction between internal and external evidence. No viewer approaches a work of art with an innocent eye, but always with certain kinds of background knowledge that affects how the internal evidence of a work is perceived. Viewers who know more about an artist and the content in which works of art are created are able to see and understand more than viewers who lack such knowledge.

Works of art should have the capacity to afford aesthetic experience for which content-oriented and affect-oriented accounts can be given. Aesthetic properties are in any case response-dependent, and they are neither merely detected nor merely projected. Common conceptual frameworks obtained through social conditioning might explain the convergence of aesthetic predication. We value artworks because they afford the opportunity for us to exercise our sensibilities, to recognize and to distinguish different qualities in the appearance of things. The aesthetic properties of artworks alert us to the qualitative dimensions of the world at large and improve our capacities for discovering them. That is why aesthetic properties enliven our experiences. Aesthetic cognitivism claims that some works of art

can supply us with a deeper understanding of human nature and the human condition by imaginatively illuminating our experiences, and also the greatest scientific achievements are those that have made fundamental contributions to human understanding.[127]

Although viewers customarily seek to understand works of art in terms of artistic intentions, there is also another assumption underlying their interaction with works of art. Part of our contemporary concept of a work of art is that it is an artifact to be intellectually and imaginatively apprehended by viewers and thus function as a source of insight and enjoyment. This assumption might possibly be the result of social and cultural developments that have led over the past few centuries to contemporary ideas of the aesthetic. André Malraux has remarked that a "Romanesque crucifix was not regarded by its contemporaries as a work of sculpture; nor Cimabue's *Madonna* as a picture. Even Pheidias' *Pallas Athene* was not, primarily, a statue."[128] These artifacts are now understood in a different way than they were in the cultures of their origin.

Whether or not this is peculiarly modem concern, it is nonetheless a genuine assumption that contemporary viewers bring to bear in their approach to works of art. With this assumption has come the idea that meaning lies partly outside the intentions of an artist. There may be more (or less) in a work of art than its artist intended, and spectators have a legitimate role in uncovering what one might call aesthetic understanding of a work of art. This concern arises for a number of reasons. One is that information about an artist or the culture in which the artist lived may be inadequate or unavailable. We know little about the culture that produced the cave paintings at Lascaux, France, and even less about individual artists themselves. Even when information about a culture and artist is available/ surviving lords may be inadequate. There a large gaps in our knowledge about the

cultures and artists of the past. When a viewer encounters a work of art produced in such circumstances, the best that can be done is to speculate about what an artist intended, recognizing that there may be no decisive solution to specific questions.

Artistic developments have also affected the way viewers have come to understand works of art. T. S. Eliot observed that works of art are not only influenced by the tradition from which they emanate, but they also modify that tradition.[129] What he meant is that later works of art create new and different possibilities for understanding earlier works. All of these situations, then, underscore a particular attitude with which viewers approach works of art. If viewers assume that works of art are outcomes of intentional activity, they often assume that they are aesthetic objects as well. As such, they are looked upon as sources of the kind of intellectual enjoyment that comes about through the imaginative use of one's perceptual and cognitive faculties.

The intentional and aesthetic understandings suggest that viewers have an active role in responding to works of art. Such an assumption is confirmed by the findings of psychologists and others concerned with visual perception. It is now common to observe that perception and conception are not isolated but rather conjoined in a viewer's response to a work of art. Perception of a work of art is best understood as an active effort aimed at obtaining understanding. As such, it parallels other kinds of efforts that people make in integrating experience into coherent wholes.[130] Philosophers, for example, have noted that aesthetic response possesses a structure similar to efforts aimed at establishing meaning in such disparate disciplines as science and the law. Michael Polanyi characterizes all of these as species of "from-to" knowing.[131] Aesthetic perception, like other modes of productive thinking, he argues, involves an imaginative synthesis of initially chaotic elements. In perceiving a work of art, we call up our

past experience, background theory and knowledge, bodily aware-
ness, and present concerns. From these tacit elements we project an
understanding based upon the clues presented in a work of art.

The imaginative element in aesthetic perception, as well as in scien-
tific discovery, has aroused the attention of philosophers in recent
years. Much has been made of line drawings of ambiguous figures to
illustrate what occurs when viewers perceive a work of art. In observ-
ing a figure such as the famous duck-rabbit, for example, viewers first
see the figure in one way and then in another.

Aesthetic properties give humanly accessible shape to things, and
they evoke curiousness. Aesthetic experience involves the construc-
tive powers of the mind, and aesthetic experience is of overwhelming
importance to art. According to Carroll, aesthetic experience is com-
prised of design appreciation and the detection of aesthetic proper-
ties.[132] This is a matter of attention to and contemplation of aesthetic
qualities and artistic forms. Aesthetic experience does not represent
the only kind of legitimate response to art. Cognitive and moral ex-
periences may be equally appropriate.

## VISUAL AND LINGUISTIC CONNECTIONS

To think is to make connections. The connections of interest to the
symbol systems are the internal connections between the elements of
self-sufficient media or symbol systems. It legitimises only thought
that stays within the terms of a symbol system. Integrated learning
calls for connections across as well within symbol systems, whatever
the result may be. Especially it is a question of connections between
visual and linguistic elements. The reason is that much of the mean-
ing of the works of art lies in their relations with the world we live
in, including personal and collective purposes, the culture around us.
And culture is accessible mostly through language, but the cultural

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network of meanings is mediated through language and behaviour. The categories embodied in language and behaviour is part of the constitution of meaning.

One would expect a cognitive approach in psychology to be a natural link with discipline-based art education, but it has some problems in that direction. It fits well with those who think of art making as a principal activity of art education and of the various media of art making as the disciplines of art. For it allows them to say that to learn to draw is to learn to think visually and to use the symbol system of drawing. But it is less useful to those who count art history, aesthetics and criticism as discipline of art. These disciplines use words and cannot claim to be either a medium or a symbol system. Still both the discipline-based art education and the symbol system approach share the view that art is cognitive and that its cognitions are unique. Related to this comes Howard Gardner's theory of multiple intelligence. Gardner thinks that intelligence is a way of thinking determined by some combinations of Arnheim's perceptual channels and Goodman's symbolic domains, overlain with the stipulation that they are useful in socially developed practices.[133]

It has been found that the capabilities of young to discuss art have been greatly underestimated. It has also been found that with proper motivation and good strategies or through the interjection of conflicting ideas, groups of individuals without a formal educational background can deal with sophisticated aesthetic issues.[134] There is evidence that the visual thinking of children begins as part of what has been called a plural-media activity.[135] According to this view, when young children begin to draw, represent meaning visually, they do not make marks on paper that are intended for visual contemplation only. They engage in an activity that includes gesture, imitative noise and language, and their visual products are meaningful only in the context

of the total activity. The origins of drawing are not confined to one medium. This is the fact that is relevant to more general philosophical point concerning the role of language, which is essential in connecting works of art and culture.

Arnheim thinks that this is because culture is irrelevant to the deepest significance of art that the different kinds of thinking should be carefully kept apart. Otherwise we might fail to grasp that significance. The meaning of a visual work should be grasped in visual terms, although there might be linguistically based interpretation on culture, but this has been formulated in different media. The thinking that deals with visual medium, grasps its essential meaning. Still, crucial thing is that also there are two different media for thought, they can and should be constantly connected. We can isolate visual and linguistic elements in a single work, but our thinking can move easily back and forth between them. Each one of the modes has something to contribute to our understanding. Thinking, while moving back and forth from one mode to another, can make distinctions and connections that might otherwise be impossible. There are two tracks, but one destination, which is a grasp of the meaning of the work of art. Works of art are constituted as meaningful objects by both visual and linguistic materials of thought in interaction. Both approaches are valid and necessary ones, because they are part of what creates the work of art.

This is just one way to take seriously the assertion that works of art must be interpreted, because before the interpretation it exists only as a material object and not as a work of art. By placing emphasis on the ways which meaning is made and experienced by viewers interpretation analysis deals with the reception of the work of art and its variables which is in some tension with conventional ideas of influence and effects. Interpretation brings into focus a range of issues to do with the process of mental imagery and mediation.[136]

APPROACHING INTERPRETATION

In approaching the structure of art one can notice that structure is a concept including both content and form so far as they are organized for aesthetic purposes. The work of art is then considered as a whole system of signs or structures of signs, serving a specific aesthetic purpose. Jean Mitry describes the supreme value of art as mediation between man and his own *impuissance*, his feelings of disharmony with and in the universe.[137] Mitry thinks that artistic impulse ultimately expresses man's inexhaustible and unsatisfied feelings for the absolute. Needing to explain, to preserve, and to control the mysterious, fleeting, and ungraspable present, man developed tools (science, art, religion), in such a way as to possess a simulacrum.[138]

In contemporary works, which are related to our own cultural tradition, the footnotes are in our head due to our sharing a common culture and experience. It is possible to think that whereas high culture's currently prevalent aesthetic theories assume that the artist is active and the spectator passive, in fact the artist is active and the spectator is active too. And if their activities don't exactly overlap, they're bound to collide somewhere in the middle of the work of art."[139] The spectator shares the emotions of many of the persons on the screen and simulates these so that all the resulting sensations give the colour of living experience to the emotional reflection in our mind.[140] There are unconscious conclusions derived from sensations, which are equivalent in their consequences to the so-called conclusions from analogy. Whenever the parts of retina in the outer corner of the eye are stimulated, it has been found to be due to external light coming from the direction of the bridge of the nose, the inference we make is that it is so in every new case whenever this part of the retina is stimulated. This if free of conscious thinking, and these unconscious conclusions are irresistible, and the effect of them cannot be overcome by a better understanding of the real relations.

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In short, the artwork does not simply offer a 'reflection of reality', but first and foremost it offers a type of *engagement*: it projects a state of being with the world in which the ineffable finds itself controlled. For example, Jean Mitry holds in common with Maurice Merleau-Ponty, Jean-Paul Sartre, and other existentialist aestheticians a view of the artwork as an invitation among individuals to share a certain valued life experience. The art work is a communication, and at the same time a revelation of being, in some full aspect of its particularity."[141]

Arthur Koestler has stated: "The mind is insatiable for meaning, drawn from, projected into, the world of appearances, for unearthing hidden analogies which connect the unknown with the familiar, and show the familiar in an unexpected light. It weaves the raw material of experience into patterns, and connects them with other patterns; the fact that something reminds me of something else can itself become a potent source of emotion."[142]

Aesthetic inquiry consists of an examination of the nature of art and why individuals respond to art as they do based on what meanings they give to art. Aesthetics as an area of study entails an examination of aesthetic meanings. For example, art criticism is based in that analyses and evaluations of art can be tested against information on a specific work of art and from perceptual evidence. In aesthetic inquiry, statements on art are examined as to their logical and rational truth and their persuasive power. Works of art are related to a variety of contexts, including the world they represent, the artist who made them, the audience, and the art world and various aspects of the culture in which they were produced.

A basis for interpretation is provided in Arthur Danto's theory of art.[143] Unlike modernist theorists, Danto thinks that the observer

must attend to the non-exhibited qualities of a work. We must look not only at the relationship of elements within the work, but also beyond the object to its historical, rhetorical and philosophical contexts in order to comprehend its meanings. Danto thinks that doing so our interpretation constitutes the work of art. Danto's theoretical thinking points out that the works of art are *about* something. They are created to present a view of the world and to affect our attitudes and visions of the world. Danto thinks that works of art can be thought of as an externalisation of the artist's consciousness, because we cannot overlook the fact that works of art derive their identities and structure from historical and causal matrices. Their meanings and associations are bound to the cultural framework of the time and assume causal connections with an artist environment. A causal line is a temporal series of events so related, that given some of them, something can be inferred about the others whatever may be happening elsewhere.

The works of art embody ideas that express an age, the attitudes and beliefs that define a world by those living in that period. It is through the attributes of style and expression that the observer discovers these ideas. Further on Danto thinks that artists do not merely assert these facts or ideas in their works, because they suggest them in ways intended to transform the way the observer receives them. Art aims at some effect and transformation in our affirmation of the way the world is viewed. The artist's use of rhetoric and metaphor is an attempt to get the observer to take toward the work an attitude, which involves more than recognition of a truth or an idea. The expression of the otherwise inexpressible is not the only communicative function that, for example, metaphors serve. They also achieve a certain communicative compactness, since all the applicable predicates belonging to the metaphorical vehicle are implied succinctly through the vehicle itself. Works of art can cause viewers to heighten and confirm convictions or transform their ways of thinking about

their convictions. Danto contends that interpretation is puzzling to a person with insufficient knowledge. He acknowledges that at one point in the history of art, there was complicity between artist and spectator, in which the latter was to disregard the paint and gape at the Transfiguration, to stand dumb in front of it.[144] This is not true anymore, works of art have meanings that can be distinguished from those held by other cultural objects, and this opens up possibilities for talking about them.

Danto thinks that aesthetic understanding is far closer to intellectual, cognitive action than to a mode of sensory stimulation and calls for an aesthetic stance as something that has to be constructed. Danto's theory of art presents a foundation for interpretation that is predicated on our understanding of art being culturally, philosophically and historically developed. That is why we must shift our conceptions of interpretation to a broader, more global approach. In this way we might have a better theory for interpreting works of art and a better foundation for teaching students to understand their meanings.

Theories of art as a foundation for interpretation provide insights and they entail more work on the part of teacher and student alike. Teachers will have to present works of art in a more studied context, knowing something about the history of art, the art world, and art theories which will better enable them to explain the artist's intentions, theories of art the work rejects or internalises, technique and style. Students will also have to develop grounding in art history, theory and knowledge about the different contexts (cultural, historical) of the work. The more and more detailed background research will be a guiding force toward a more plausible and complete understanding of the different aspects of contemporary art.

SIGNS, SYMBOLS, MEANINGS, AND TEXTURES

It is understandable that human beings are highly visual, and it was not until the first crude graphic display screens were introduced in the late 1960s that computers began to change our relationship to information and forge a new kind of space. Computers are largely based on the structure of he way the human brain processes information. It is one thing to understand that human memory is organized in lists and lists of lists cross-referenced by associations between them, and it is another thing to see that system on a screen modelled not on pencils and printing presses but on how a human mind processes information."[145] Within this world (real and unreal), the spectator can freely rearrange that information and impose new structures. Seeing ideas as visual objects changes your view of the world because "when everything is visible: the display becomes the reality".[146]

In visual perception we are immediately aware of the world around us.[147] Visual perception is not passive recording of the stimulus material, but an active concern of the mind, and reading a picture is a sequence of mental processes exactly like reading some other reality. And because the sense of sight operates selectively, then the perception of different shapes consists of the application of form categories, which one might call visual concepts. The theory of visual perception as coordination, assumption and estimation, was gradually developed by gestalt psychologists and their successors from about 1920, and was taken from perceptual and cognitive psychology into art theory through the 1950s. The most notable developers in that process were Rudolf Arnheim, E.H. Gombrich, György Kepes and Anton Ehren-zweig.[148]

For example for Arnheim "every element of a work of art is indispensable for the one purpose of pointing out the theme, which embodies the nature of existence for the artist."[149] In this sense Arnheim finds

symbolism even in works that, at first sight, seem to be little more than arrangements of fairly neutral objects. The meaning of a perceived event changes the pattern of possibilities for future action, and meaning is the selective function on the range of the recipient's states of conditional readiness for goal directed activity; so the meaning of a message to you is its selective function on the range of your states of conditional readiness."[150]

Defined in this way, meaning is clearly a relationship between the message and the recipient rather than a unique property of the message alone.[151] And Donald MacKay suggests that states of readiness are for organism's large numbers of conditional probabilities. Asking a question is a means of changing the conditional probabilities of the questioner's states of readiness.[152] The Gestalt psychologists were the first to establish the significance of phantom forms in visual systems.[153] Phantom formalisations can transform scattered, atomistic sense data into configurations, forms, objects, and scenes. Resemblance itself is a phantomisation when, for example, the perceiving mind groups a particular patch of grey tones into a shadow-moulded face. Phantomisations are not merely subjective but shared and social facts, which are rooted in coordination with the material aspects of the world. One might even speak of vision having its own syntax and grammar, woven from the brain's structures and experiences, and handling language as one kind of structure amongst others. Phantom forms can transform concrete graphic features into pictorial representation. They are particularly important in editing, in determining what will be a strong or weak feature, what will catch the attention and what will be overlooked.

Like the Gestalt psychologists, Hugo Münsterberg felt that every experience is a relation between a part and whole, between figure and ground. It is the mind, which has the ability to resolve this relation

and organize its perceptual field. Münsterberg was the pioneer of the film/mind analogy to film theory. The perception of movement, or the impression of it, was not a result of seeing successive stages of the image, but included a higher mental act. The spectator invests the impressions into them. He ascribes the sensation of viewing movement to the displacement of a figure on its ground and mentions that we can, through willed attention, reverse that relation, altering our perception of the movement. All depends on how our attention structures the perception.[154] Movement's vectors and anticipated trajectories commonly override the static features of a composition, creating new, and more choreographic impression.

Münsterberg had a hierarchic notion of the mind; that is, he felt it was comprised of several levels, the higher levels depending on the operation of the lower. Each level resolves the chaos of undistinguished stimuli by a veritable act virtually creating the world of objects, events, and emotions that each of us lives in. At its primary level, the mind animates the sensory world with motion. It is well known that his description of the so-called *phi-phenomenon* put him decades ahead of later theorists who would account for ' the illusion of moving pictures by recourse to the theory of "retention of visual stimulus." Münsterberg characteristically went beyond this passive view to an active one in which the mind at its most primitive level confers motion on stimuli. The spectator interacts on an individual basis with it, because e the meanings are created through attention.

Münsterberg describes this phenomenon by recounting some famous experiments in perception, but he never tries to explain it. The phi-phenomenon is for him a given. It shows that at its most basic level the mind has its own laws and constructs our world in exercising them.[155] It shows as well that the technology of film implicitly recognizes these laws and works its effects on the mind itself. This

single, basic mental capability was enough to let Münsterberg conceive of the entire cinematic process as a mental process. Cinema was the art of the mind.[156] The art of the *photoplay* is to organize and control different responses in the most suitable way. This way one can achieve aesthetic affects from the experience. The view of film form as mind's eye view coheres well with an emphasis on film as diagram, as discourse, as a sequence of ideas in visual form, or like in formalism, a sequence of forms re-presenting visual ideas. Moreover film, like the other visual arts, represents visual thinking and visible thought. In a word, forms in art, media, and discourse exist in hybrids of forms, perception and the perceived. Mind or mentalist theories risk occluding a raison d'etre of film form, that the mind, instead of relying on its own resources, is presented instead with a real representation to offer stabilised forms, interesting detail, and stimulating information.

For example, parallel editing in film differed from standard procedures, and it was mind's capacity to split its attention or to distribute its interest over number of events at roughly the same time. It seemed obvious to Münsterberg to describe all cinematic properties as *mental.* Besides the basic quality of motion, he notes that close-ups and camera angles exist because of the mind's very way of working, and this is "attention." Not only does the mind live in a moving world, it organizes that world by means of this property of attention. In the same way the motion picture is not a mere record of motion, but an organized record of the way the mind creates a meaningful reality. Attention operates on the world of sensation and motion, just as angle, composition, and focal length are properties a step above sheer recording of intermittent photographs.

At even higher level Münsterberg confronts the mental operations of memory and imagination which go beyond simple attention to

give this world a sense, an impact, a personal direction. The filmic properties which respond to these mental operations are the various kinds of editing all of which confer on both motion and significant camera work a dramatic direction and organization. At the highest mental level are emotions, which Münsterberg considers to be complete mental events.[157]

Thus in ascending his psychological hierarchy, Münsterberg has carefully pointed to the material analogues in cinema, which relate to each stage of mentality. The primitive illusion of movement given to us by the mind's operation on intermittent photographs is supplemented by select attention attained via angle, composition, image size, and lighting. Corresponding to memory and imagination are the natural resources of editing, which compress or expand time, create rhythms, and render flashbacks or dream scenes. Since the materials of cinema are the resources of the mind, the form of cinema must mirror mental events, that is, emotions. Film is the medium not of the world, but of the mind. Its basis lies not in technology but in mental life.

The mention of the free play of the mind and separation from practical again sound the Kantian traces. Film is connected with realm of freedom that has both psychological and metaphysical dimensions. Münsterberg links film with existing conceptions of art in order to defend it against its detractors, and the conceptions of art he invokes do not tie the object in any essential way with the imitation of the outer world.[158] Following Kant, Münsterberg employs an entirely different kind of analysis when he turns from psychology to aesthetics. Psychology is part of a scientific mode of thought. It tries to explain aspects of what Kant called the *phenomenal realm,* the realm of sense experience where things are linked in time, space, and causality. Aesthetics plays an important role in the overall philosophy of

Kant and an even more important role in Münsterberg's system.[159] A disjunction between outer forms of space, time, causality, and mental processes is essential to Münsterberg's theory.[160] According to Carroll, Münsterberg often speaks of functions, which means that his analogies might not be called phenomenological but functional.[161] So, functional analogies might be developed between mind and film. The sciences of the phenomenal world can never get outside that world to the basis of life and consciousness. They are locked within a world of causality. He also placed ethical first principles there which serve to justify our normal moral sense, giving us the ability to judge one action as better than another and, more important, allowing us to go beyond ourselves in so judging. Just as we demand that everyone accept the logical principles by which we make sense of the material world, so we demand that everyone recognize the transcendence of certain moral principles without which we couldn't properly speak of right and wrong actions. For Münsterberg the isolated art object must appeal to the disinterested perceiver in all its uniqueness, first stirring the mind and then putting it to rest. [162]

The film must follow a purely mental world, replacing the relations of appearances in the world with mental relations. The film differs from the dream mainly in completeness. Whereas the dream may arouse certain fantasies and emotions, leaving us bewildered or trembling on awakening, the aesthetic film will dispel all the energies it calls into play. It will take appearances from nature reorder them in light of the mind, and, by doing so stir our emotions. It will then neatly tie up those appearances, giving them a final order, which at once asserts the priority of mental laws over chaotic appearances and at the same time completes the spectator's experience in a way, which leaves him lacking nothing.

Münsterberg's idea of the spectator's relation to the cinema is an interesting point-of-view concerning the role of the spectator, and cognitively speaking Münsterberg was ahead of his time in noticing the activeness of the spectator, and the individual and personal attitudes, experiences, and interests that will affect the unique decisions in question. Far less was understood about the workings of attention, imagination, memory and the emotions.[163]

David Bordwell has made differentiations between four kinds of meanings: *referential, explicit, implicit* and *repressed* or *symptomatic*.[164] In searching for referential meanings the perceiver may construct a concrete "world", in constructing the film's worlds, the spectator draws not only on knowledge of filmic and extra filmic conventions but also on conceptions of causality, space, and time, and on concrete items of information. In explicit meanings the perceiver may move up to a level of abstraction and assign a conceptual meaning or "point" to the fabula and diegesis she constructs. In implicit meanings the perceiver may also construct covert, symbolic or implicit meanings, units of which are commonly called "themes", or problems, issues, questions and so on. The perceiver may also construct repressed or symptomatic meanings, which are like disguises; they may be treated as the consequence of the artist's obsessions.[165]

## IMAGES AND REFERENCES

Raymond Durgnat has suggested that the term "syntax" coming from linguistics which deals only with distinct and prespecified forms normally implies the bringing together of distinct units, but pictorial form evolves extension and continuity and from this angle pictures are nothing but syntax, the only pure syntax there is.[166] For example, a line is not really one distinct unit after another, it is a unit by being an extension of the same thing: a line is not syntax of points. The form of each and every object is adjusted by its viewpoint, and by

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their relationship with one another, so that depending on the point-of-view each perspective of a shape is different, and this is one of the basic differences between visual perception and language because, for example, the shape of a verb does not change, but the shape of a table changes depending on the viewpoint. For example, a basic rule, not only of pictorial but also of visual perception is: If two objects seem to overlap, then the completed one is in front of the other."[167]

Rudolf Arnheim has demonstrated that images can serve as pictures or as symbols; they can also be used as mere signs.[168] The three terms (picture, symbol, sign) do not stand for a kind of images; they describe three functions of the images. A certain image may be used for each of these functions, and will often serve more than one at a time. An image serves merely as a *sign* to the extent, which it stands for a particular content without reflecting its characteristics visually. To the extent which images are signs they can serve only as indirect media, for they operate as mere references to the things for which they stand, not analogically, and therefore not for thought in their own right. However, numerals and verbal languages are true signs. Images are *pictures* to the extent to which they portray things located at a lower level of abstractness than they are themselves. They do their work by grasping and rendering some relevant qualities (shape, colour, movement) of the objects or activities they depict. An image is concrete in itself, but it is abstract from what it is a picture of. In the visual arts people often mean abstract to mean non-representational of anything that one can recognize, but even representation is abstract in the sense that it only picks up some aspects of the thing it refers to it. A photograph is semiabstract in the sense that it leaves the object; it reproduces some aspects of the object, but not others, for example, shading but not depth, and in a photograph one often looses the contour of things.

Abstractness is a means by which the picture interprets what it portrays. A picture is a statement about visual qualities, and such a statement can be complete at any level of abstractness. Only when the picture is incomplete (ambiguous or inaccurate) with regard to the abstract qualities, the observer is called upon to make his own decisions about the features of what he sees. An image acts as a *symbol* to the extent to which it portrays things, which are at higher level of abstractness than is the symbol itself. A symbol gives a particular shape to types of things or constellations of forces. As symbols, fairly realistic images have the advantage of giving flesh and blood to the structural skeletons of ideas.[169]

Trevor Whittock thinks: "For the symbol to be successful the vehicle must be rich in figurative connotations."[170] Symbols allow events to represent other events, possibilities and abstractions, which do not exist as objects of sense exist, though some may be hidden in deep structures of reality. We categorize the world into separate objects in perception, and we describe the world as being made up of separate objects by the words in language. It is an interesting question how far perceptual and verbal classifications into objects are the same. They are certainly similar, but there seem to be hardly enough names for the objects into which the world is divided perceptually. During perceptual learning - such as when learning to see biological cells with a microscope - new objects appear from initially random or meaningless patterns. When given names, such as 'nucleus' and 'mitochondrion', the student sees these patterns as objects. What is seen and accepted as objects also depends upon whether they are regarded as functional units. A hand, or an arm, or the pages of a book are functional units, though they are complex structures. In microscopy the criteria for what is a functional unit may be highly theory-laden, and so may change as theoretical descriptions change."[171] As R. L. Gregory puts it: "The most striking - and a unique - feature of Mind

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is the acceptance and use of things as symbols standing for other things."[172]

Arnheim thinks that human mind might be forced to produce replicas of things, but not naturally.[173] Memory retains or exaggerates significant things, and easily forgets the rest. E. H. Gombrich thinks: "... we generally do take in the mask before we notice the face. The mask here stands for the crude distinctions, the deviations from the norm that mark a person off from others. Any such deviation, which attracts our attention, may serve us as a tab of recognition and promises to save the effort of further scrutiny. For it is not really the perception of likeness for which we are originally programmed, but the noticing on unlikeness, the departure from the norm which stands out and sticks in the mind."[174]

For example, caricatures, in the sense of pictures that capture the "essence" of some represented object, are recognizable for people quicker than photographs.[175] A caricature is surprisingly faithful to how the mind remembers things, and Hochberg thinks that various objects with which we are familiar have *canonical forms* (i.e., shapes that are close to the ways in which those objects are encoded in our mind's eye).[176] Also, in addition to the *visual* features of the represented object, there are *non-visual* features that might be encoded; thus the caricature might in fact not only be as informative as is the accurate drawing: it might even be more directly informative for the task that the subject is to perform.[177] Hochberg writes: "Nevertheless, the way in which the physiognomy and expression of Mickey Mouse is encoded and stored *must be identical in some fashion* to the way in which those of a mouse - and a human - are stored. It is very likely that these similarities are not merely the result having been taught to apply the same verbal names to both sets of patterns (i.e., both to the features of caricatures and to the features of the objects that they

represent), what we learn about caricature will help us understand how faces themselves are perceived."[178]

Symbolic interpretations that make one concrete object stand for another equally concrete one are almost always arbitrary. We cannot really tell whether a certain association was or is in the conscious or unconscious mind of the artist or beholder unless we obtain direct information, which needs analysis. The work of art itself does not offer the information, except in the case of symbols standardized by convention, or in those few individual instances in which the overt content of the work appears strange and unjustified, unless it is considered as a representation of different objects of similar appearance.

## OBSERVING PICTORIAL ELEMENTS

Pictorial art attempts to capture the three-dimensional structure of a scene, some chose view of particular objects, people or a landscape. The artist's goal is to convey a message about the world around us, but we can also find in art a message about the workings of the brain. Many look to art for examples of pictorial depth cues, perspective, texture gradients, and so on. Pictorial art can tell us a great deal about vision and the brain if we pay attention to the ways in which paintings differ from the scenes they depict. We might learn that artists get away with great deal impossible colours, inconsistent shading and shadows, inaccurate perspective, the use of lines to stand for sharp discontinuities in depth or brightness. These representational modifications do not prevent human observers from perceiving robust three-dimensional forms. Art that captures three-dimensional structure of the world without merely recreating or copying it, offers a revealing glimpse of the short cuts and economies of the inner codes of vision. The non-veridicality of representation in art is so common

that we seldom question the reality why it works. R.L. Gregory writes in *The Intelligent Eye* that perception is not a matter of sensory information giving perception and guiding behaviour directly, but rather that the perceptual system is a 'look up' system; in which sensory information is used to build gradually, and to select from, an internal repertoire of 'perceptual hypotheses'.[179]

The size of a retinal projection varies with the distance of the physical stimulus object from the observer. That is how the distance dimension distorts the perception. The eye may see an object, which is actually maintaining its size, as changing it during the movement. So there are these perceptual modifications, which effect and vary depending on the object's location relative to the observer. When the image of an object changes, the observer must know whether the change is due to the object itself or to the context or to both; otherwise he understands neither the object nor its surroundings. The observational object must then be abstracted from its context, and this can be done differently: one thing is perhaps the way of performing an abstraction because the observer may want to peel off the context in order to see the object as it is, in complete isolation, and the other way is to observe all the changes it undergoes and induces because of its place and function in its setting.[180]

There is a need for an image-maker to create actively certain kind of views, so, that for example the patterns inside the image would appear as three-dimensional as possible. Overlapping is particularly useful in creating a sequence of visual objects in the depth dimension when the spatial construction of the picture does not rely on other means of perspective.[181] For example, the space-building role of superposition in Chinese landscape painting is well known. The relative location of mountain peaks or clouds is established visually by over-

laps, and the volume of a mountain is often conceived as a skeleton of echelons or slices in staggered formation.[182]

Also transparency can bring super-positional effects into the image. Physical transparency is obtained when a covering surface lets enough light pass through to keep the pattern underneath visible. It is by no means a guarantee of perceptual transparency, which can be obtained without physically transparent materials. Superposition of shapes is a prerequisite of transparency, and a necessary but not always sufficient perceptual condition.[183] The rule of simplicity predicts the functioning of transparency. Purely on shape relations based transparency is perceived also in painting and sculpture. The notion of two things appearing in the same plane is sophisticated and found only at refined stages of art like in Renaissance, and Modernism.

Objects can take part in the third dimension in two ways: by tilting away from the frontal plane and by acquiring volume or roundness. This differentiation of spatial conception can be observed in all the visual arts, in architecture, sculpture, stage design, and choreography, and it represents a particularly important factor in the pictorial medium. There is still much experimentation to be needed before we can establish the comparative weight of different factors, and not without a greater knowledge of the physiology of vision. When visual perception must make a choice between a simpler shape and a spatial orientation, it usually chooses the former.[184]

For a stationary eye and a stationary observer, the image of an object at any point in space is simply projected to some point on the retina and thence to the cortex. Given the position of the point in the retinal image, it is not difficult to understand how we manage to perceive the object's direction in space. The viewer's body is in al-

most constant motion in the world, his or her head is in motion with respect to his or her trunk, and his or her eyes are in motion in his or her head. Julian Hochberg thinks that moving observers need two kinds of eye movements to look at moving (or stationary) objects in a three-dimensional world: "*Compensatory movements*, smoothly and precisely executed, permit the eye to remain fixed on some point while the body moves. In addition, we have skilled *pursuit movements* that swing the eyes smoothly to keep them fixed on moving objects, and the adaptive mechanisms of *accommodation* and *convergence* that bring any object to which we are attending into clear focus and central location on the retina. In addition to these saccadic eye movements bring the fovea from one point in the visual field to another, in rapid jumps that take only about 1/20 of a second to execute."[185]

That is why the normal vision would be impossible without the co-operation of these muscular actions, and according to Hochberg the viewer's perceptual system must in some fashion "make allowances" for the eye movements they produce before it can assign spatial meaning to any stimulation of the retina.[186] So the perception of movement depends upon certain physical condition. The movement must attain a certain velocity before it is perceived as movement. The contrast between a moving object and stationary background makes the movement clearer and more obvious. Primarily the movements of the images of objects do not produce perception of movement across the retina, because the eyes are also moving to and fro in the head, and thus images of stationary objects are constantly moving across the retina.

One needs the kind of eye movements that Hochberg mentioned earlier to keep everything in balance. That is why M.D. Vernon asks: "Why is it that our surroundings appear stationary although their images are always moving on the retina?"[187] It has been hypothesized

that sensations to the brain from the muscles, which rotate the eye-balls, change continuously as the eyes move, and that these changing sensations offset and compensate for the changing retinal impressions. Another explanation is that the changing retinal impressions are compensated for in some way by an awareness of the motor impulses proceeding from the brain to the eye muscles, which cause them to move the eyeballs. Whatever the explanation, it seems that we are able to differentiate between movements of the retinal images caused by movements of the eyes, and movements within the retinal image caused by movements of objects in relation to their surroundings, which appear stationary.[188] It seems likely that with all its limits, our storage capacities allow us to reconstruct earlier segments in the light of later information. There is a need to extend present perceptual psychology, which is still largely confined to the study of the individual event, into the sequence of perceptual consequences. It might be helpful in the programming of interactive, and virtual media, and in cases where the narrative itself is of a special visual event. It seems likely that with all its limits, our storage capacities allow us to reconstruct[189]

As we look at the real world, we can see a very large visual field within which there is rather small area of special attention, and within that there is a surprisingly small area of sharp focus. No clear or definite boundary separates these zones. If the turn of our head establishes the larger field, the smaller areas depend on our glances, running at about two per second, and a maximum of four. Changes in the scene may stop the eye movements, for example, when montage is produced by the filmmaker, so, the spectator doesn't have to produce his or her own. These glances do not register everything we notice, and our attention often shifts about the visual fields independently of them. The act of seeing necessarily involves associated thoughts, which may briefly replace visual attention. The eyes make many ex-

ploratory movements, saccadic glances, which are prompted largely by expectations associated with the preceding glances, or by attraction from conspicuous feature within larger zones. Even in peripheral areas of vision movements swiftly pre-empt attention for obvious bio-functional reasons. In contrast, the screen picture is one large visual field, which ends very abruptly and arbitrarily at each edge. Its overall texture as one picture, with its consistent type of semi-abstraction renders conspicuous a relationship of parts, which becomes a graphic unity, a pictorial composition. This has no real equivalent in normal world looking, yet it seems to act as a powerful source of significance. Around this picture, the head, eyes, and thoughts move, not necessarily following the compositional structure, but constantly encountering its conspicuous features. Thus the picture becomes a succession or sequence of visual fixations, albeit retaining a continuous overall presence. The succession constitutes an internal editing or montage, though this is distinguished from editing or montage in our special sense, where succession replaces continuity of presence,

Normally the internal relationships of the shot pre-occupy us, since most of the information lies there in front of us. One doesn't only overlook the edges of the shot, but one also hears the sound as being *in* the scene, even when a single loudspeaker is placed well to one side of it. If the source of the sound is so ill-placed, for example, behind the projector as to threaten the illusion, one usually contrives to get used to it, to make a sustained mental-constructivist effort to re-co-ordinate the cues, and mentally return the sound into the image.

We as observers do not reconstruct a light source in order to recover the depth from shading and shadow, we do not act as optical geometers in the way that computer graphics programs do. We do not notice inconsistencies across different portions of a painting but recover depth cues locally. In the real world the information is rich

and redundant, so we do not have to analyse the image much beyond a local region to resolve any ambiguities. When faced with the cues of pictorial art, the local cues are more meaningful, albeit inconsistent with cues in other areas of the painting. Like many aspects of art, discrepancy between art and the scene it depicts, informs us about the brain within us as much as about the world around us.

## PICTORIALISM IN A LANDSCAPE

There is a complicated inter-relationship between the perception of the movement of the surroundings and the movement of the body, which is displayed in what is known as 'parallactic movement'. For example, as we move forwards in a car along the road, the retinal image of the landscape in front of us expands, flows around on either side of us, and then contracts and becomes sucked in behind us.[190] This effect is not usually very noticeable in ordinary daylight, when the whole visual surroundings are perceived as rigid and stable while we ourselves move. But it may be apparent in driving at night, when the surroundings are not clearly perceived. And if we look at objects on either side of us, we may see them moving rapidly in the direction opposite to that in which we are moving; but the farther away they are, the slower the movement, and the horizon is stationary. In fact, the retinal image of the landscape is continuously distorted or deformed as we move, but we are not consciously aware of this deformation; instead we perceive it in terms of our own movement across the landscape. This is something that film can also pick up in relation to perspective and visual thinking. Thus a rough generalization may be made that the total amount, which can be attended to at any one moment, is constant. If attention is concentrated on a small part of the field, little will be perceived in other parts; if attention is diffused over a larger area, no one part will be very clearly and accurately perceived.[191]

Often the conscious part of our thinking is restricted to a co-ordina-
tion of selected items of data, the setting of a goal, and a volitional
decision to perform the task. The actual performance is no more
conscious than instructing each foot alternately to take a step. One
can feel quite home with all the irrationalities of film form. To make
sense of a film, the mind draws on our general understanding of the
cinematic situation, of which its forms are part, and of our general
knowledge of the wider world, of which our knowledge of film is
part. Young children's ability to makes sort of sense of different tel-
evision programmes depends less on receiving verbal disquisitions or
deconstructions of the medium, but rather through everyday experi-
ence of it.[192]

In film movement draws the eye, and its vectors and trajectories usu-
ally override the static (visible) elements of the composition. The
contradiction between the pictorial scene and the frame is relegated
to a very low-priority awareness, and instead one concentrates on the
scene, where the interesting and fruitful information lies. Although
the composition of the picture guides our eye, few of the eye's move-
ments reproduce the picture's compositional lines. Nonetheless, the
composition looms large in our apprehension, as one keeps encoun-
tering its structure. The roving, or browsing eye apprehends, not only
the whole pattern but more like successive sub-configurations, some
of which constitute objects or actions, some of which are purely pic-
torial, graphic structures. The shot is a complex entity with various
elements at once co-existing and competing for our attention. One
can never see every possible configuration, or every detail, because
our seeing is always selective, and though sometimes one can stay
content with the obvious, and pre-coded form, one is also guided by
important inputs from non-visual content and context.

The composition of moving pictures shares many elements with still composition. Yet movement counterpoints this to the point of over-riding and disrupting it. It creates a sort of third dimension by imply-ing a space for the objects to move through as they shift. Movement loosens space, and therefore the composition of the image. Simul-taneously trajectories override relationships, movement and speech give faces more autonomy, or rivet the attention towards them. Usu-ally the nexus movement, or change in rhythm and duration counter-points, or dismantles the unitary composition of the sill image. Space ceases merely to imply movement and time. It enters into concrete relationships with them.

Time, image and parallactic movements are bound together in the films of the Greek director Theo Angelopoulos. His films are picto-rial meditations on the feeling of different landscapes, human and natural. Temporality in experiencing a landscape is further compli-cated by the movement of the body itself, a phenomenon we call kinesthesis. This is relevant to the work of Angelopoulos. When mov-ing across landscape space there is not only a dynamic flow of per-ceptions derived from external sources, but there is also the muscular and nervous movement of the body itself through space and time.[193] This is something that is related to cinematic thinking. Angelopou-los is a virtuoso of long takes, especially the "figures in a landscape" kind.[194] In this kind of thinking 'landscape' includes streets, interiors, and any sizable area. Angelopoulos' camera tracks between follow-shot phases and "free-range" roving, between extreme (scenery with distant figures) and the old mid-shot distance (knees-to-head), at which modern wide-angle lenses allow plenty of landscape above, around, and between people.[195] It is an example of European *pictorial-ism* and montage thinking where there is plenty of time for people to come into the frame and walk slowly over it, while the camera tracks

down after them. Also, many scenes start with a long shot, and avoid close-ups.

"The camera movements subserve the general scene, subordinating to it any calligraphic or camera-conscious side-effect; they pick out details less than they change or vary its *aspects* and general configuration. 'Aspect' here, carries its original, visual, sense: the particular facet seen. It is as crucial to pictorial meaning as *what* is seen. It dictates the camera-angle, not vice versa (albeit film theory regularly misattributes to camera angle meanings stemming from aspect). As compared with cuts, the moving camera's gradual angle changes allow a more solid, sustained sense of scene."[196] Angelopoulos strengthens his universes by a feeling for a man-in-environment -theme. This is possible by an unhurried choreography of camera and characters, and by heavy emphases on people's silent or cryptic thinking. It seems that Angelopoulos rejects montage (or uses montage-within-shot) as too manipulative a technique for capturing the reality or essence of a given moment in a given place. Andrew Horton thinks that Angelopoulos forces the spectator, through the slow pace and continuous takes of his films, to become more *aware* of the environment, whether it is man-made or natural.[197] In the hands of Angelopoulos the long takes transform into 'sequence-shots'.

"Hard-edged landscapes, like architecture, and people who, being distant, make pictorially small movements, encourage cuts on strongly static forms; these strengthen the graphic collision dear to montage editing (hence Hollywood usually preferred cuts on movement, as more self-effacing.)"[198] Walter Benjamin has recognized that the meaning derived from landscape and architectural space is received 'by a collectivity in a state of distraction', slowly appreciating its symbolic environment through 'habitual appropriation', or through everyday use and activity.[199] Angelopoulos creates new relationships

between the camera and the scene. It is a question of montage within the camera and montage within the shot, which seems to become a more 'normal' way of expressing than the usual montage thinking.

The Russian montage theory was based on the idea of shot as a unit that does not change much. But when we have long tracking shots and pans, the shot ceases to be just one unit, one look, and becomes several (25, 50, etc.) units, which do not distract the attention towards the shot as a whole. In a way, it is distracted, because when the scene proceeds and moves forward, the spectator looses the touch of places and forgets the veridical relations of things. When one usually perceives things, one knows exactly where one's body is, and one relates all that what one sees into a feeling of one's body. That is important in a human vision, because when one concentrates on something, one does not separate it from its surroundings. When the camera rolls over a scene, it shows only parts of the whole, so after 60 seconds camera movement, the spectator has forgotten the places of things, and that is important related to editing. The structures of film are largely function of our knowledge of the world, and our expectations as to what we will, or need to be, shown. Stefan Sharff has spoken of *slow disclosure*, which means the gradual introduction of pictorial information within a single shot or several.[200] As a method it can be applied to one scene or to a whole narrative; basically it is a way of avoiding a simplistic and over-expository flow of information.

In Angelopoulos' *Voyage to Cythera* (1983) this gradual pictorial information is introduced with different kinds of sequence-shots: "The landscape shots using freely in and out of POV positions. Alexander, quitting the old actors' audition, walks leftwards, in a follow crabbing (sidewise travelling). He's distanced from us by a busy foreground (behind which he briefly disappears, the camera keeping pace with

his *presumed* walk). As he remerges, pauses, and turns his back to camera, the camera moves round and forward into a space so close to his that his colleagues stepping forward to address *him* seem to address camera; which makes it, and conspicuously, his POV. But that's jarred when he re-enters shot, and at some distance, and from the *right* (against the earlier momentum left)."[201]

In an Angelopoulos film reality and imagination mix and *reflect* each other. This all has a specific quality, which creates stimulating differences. Alexander's journey in the film has three circles: First, Alexander leaves his daily environment, second, he creates a dream hero, and third, the relationship between the artist and the old man. The voyage has self-critical aspects in it; it functions as a vision, a meditation and an analysis of the man's creativeness related to the world outside him. The complexity of the narrative structure and the visual approach has some specified meanings in *Voyage to Cythera* due to overlapping of different layers of time and the free manipulation of time. Angelopoulos extends many dedramatising tactics. His special interest is in the landscape and stretches of dead time. Angelopoulos' camera examines the scenes with its own curiosity, enumerating the contents of the shot before it with only small movements, and after that, panning in the appropriate direction.[202] Angelopoulos is a modernist in creating a recognisable, self-conscious style, which he carries throughout his works. In his films the long takes and camera movements create dialectic among different elements in the shot.[203] Angelopoulos relies on the powers of cinema to present fine details without sacrificing a large-scale image.

Primary image processing is characterized by parallel processing. Based, for instance, on excitation from more than 100 million rods and cones and on memory-stored schemata, the brain constructs gestalts and holistic fields of intensities.[204] These may be fields of

texture, as in the processing of areas of colour- and light-intensities, geometrical figures, and complex visual patterns. The excitation created by this process of primary input processing and by these asynchronous fields is often connected with visual aesthetics proper. The aesthetic and cultural cannot stand in opposition. The aesthetic dimension of a film never exists apart from how it is conceptualised, and how it is received.

Angelopoulos' visual style functions in intimate relation to the characters, events, and the themes of the films. It speaks to us humanely about very complex situations. It continuously expresses subtle truths about the characters in the films and their predicaments. Angelopoulos' style is in a much more intricate and complex relation to the actions, subjects, settings, characters, and events of the films than either being a mere reflection of our commonsense understandings of them. This sense of style will understand Angelopoulos' style as expressing and creating in the spectator extremely complex states of consciousness and awareness far beyond anything summarized either as a theme or as a mere perceptual disruption of formal de-familiarization. The first generalization that one can make about Angelopoulos' style is that it heightens spectator's consciousness of time. The retardations of editorial and interactive rhythms and the general avoidance of elisions whenever possible in Angelopoulos' work make the spectator especially aware of time Secondly, and partly as a result of its temporal effects, it is of the essence of Angelopoulos' style that it continuously reminds us that meaning is enacted. It is not a quality of an abstract system of themes and ideas nor a more or less fixed stance toward other more or less fixed, logical, perceptual, or representational norms. It is the consequence of an activity, a performance, the result of a series of shifting choices.

There are several important conclusions to be drawn from this stylistic state of affairs in Angelopoulos' work. In the first place, such a sense of style re-establishes the figure of the author as a felt presence in the work. The author is not in a coolly ironic or detached relation to the work. Insofar as one feels Angelopoulos' stylistic choices being enacted and continuously revised within the films, the author is felt to be vigorously in the films, meditatively moving around in them, adjusting relationships, comparing positions, weighing, discriminating, and judging.

The author is bringing humanly valuable meanings into existence, shot by shot, moment by moment, in continuously adjusted and readjusted acts of attention and intellect. The reason that this matters is that insofar as the author makes meanings and relationships in such a way, he gives us a model for all of the acts of making meaning performed by the characters within the films.

Many of Angelopoulos' principal characters become surrogates for the director in this process of meaning making. Alexander, the central figure in *Voyage to Cythera*, is only one of the most obvious examples of a character whose own tentative, laborious processes of searching out meanings and adjusting relationships mirror the filmmaker's. The spectator of Angelopoulos' work becomes a collaborator in this process as well. One of the reasons that Angelopoulos' work requires such an enormous effort of attention from his spectators is that the ideal spectator is asked to participate in this process of searching out and making meanings.

Angelopoulos' work gives us a very special sense of what meanings are and how they are made. This is a sense that is different from most of films and a sense that has important consequences on our functions both in our lives outside of the film theatre and in our lives as

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spectators of his films. In Angelopoulos' films meanings are produces of specific acts of human performance. They are made in time and with difficulty, and they are always in process, up for revision, adjustment, enlargement, and correction. In this respect, *Voyage to Cythera* is a textbook lesson in the process of meaning making. Angelopoulos deliberately presents the world of his film so that virtually nothing is known, or can be known, with any degree of certainty, about the true or correct relationship of the principal characters. Everything must be worked out, and all the meanings must be made. The camera work enacts the work of knowing that Angelopoulos' style always figures. Angelopoulos' style is the record of the whole process as it is conducted by the filmmaker and enacted by various characters within the film. It is a record of a series of imaginative exertions, a history of labours of attention and discrimination.

Style is the tracks left behind by this continuously renewed and ever-shifting course of work. This conception of cinematic style does not limit it to an affirmative function. Creativity frequently requires clearing a space through the application of negative energies as well. This is to say that Angelopoulos' style tries to change our concept of what a scene or s character was suppose to be. Angelopoulos' style is often designed to complicate simple situations and to prevent reductive judgments, to widen narrow views, and to broaden perspectives. Angelopoulos' style often seems designed to delay or complicate easily formulated thematic interpretations. It attempts to slow a spectator down, to retard his or her sense of semantic completion, not only by actually slowing down the pace of events in the films, but more importantly, by continuously enlarging the possibilities of interpretation around any one character, action, or scene.

This is to say that precisely in the places in which a spectator may want to rush to judgment, to stabilize a reading around a particular

meaning, Angelopoulos' style opens up new views, or qualifies and complicates old ones. Angelopoulos' directing creates new point of views and shifts of angle of vision. Where a spectator wants to hurry to an interpretation that can be lifted out of the particularities of time and space, Angelopoulos' style deliberately slows us down or slightly shifts our understanding. Angelopoulos' style encourages the same tentativeness about final meanings in his spectators that his most sensitive principal characters demonstrate in his films. Angelopoulos' ideal spectators, like his ideal characters, live in a world in which meanings must continuously be open to being made and remade in the shifting particularities of specific times and spaces. Meanings are on the move, and Angelopoulos asks that his spectators and most sensitive characters become as semantically mobile as his style. Since meanings and relationships are not weightlessly, metaphorically, or abstractly posited or gestured into existence, but are enacted slowly and laboriously within the particularities of space and time, they are never final or ultimate. They are never more than tentative and provisional. If meanings are on the move, an adequate understanding of style in this sense must communicate the sheer work of establishing, maintaining, and remaking a set of always eroding relationships between characters and between characters and their surroundings.

One of the most powerful meanings between Angelopoulos' style and his narratives communicate is to express some of the ways in which consciousness is translated into the forms of dramatic situations or into the forms of social interaction between characters. The style exists to express an imaginative and passionate residue in those moments. Angelopoulos orchestrates states of energetic silence or moments of solitary meditation in his films. Specifically, Angelopoulos' style minimizes the pull of naturalistic, economic, and practical concerns within a scene in order to maximize the pull of emotional, spiritual, and intellectual concerns. Angelopoulos de-realizes certain

social and physical forms of representation in order to realize move-ments of mind and desire, fugitive feelings, and impulses that would otherwise be lost or invisible within a scene. Angelopoulos' silencing of the dialogue, his momentary stopping of the plot, and his slowing of the pace of scenes are in the service of nurturing a special, nar-ratively non-repressive, imaginatively evocative relationship between the spectator and the film.
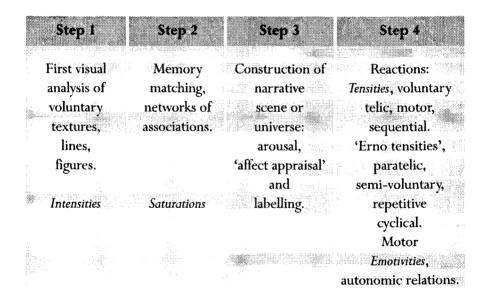
Angelopoulos' audiovisual style in his films is more than an artistic matter: it is a statement about the purpose and value of possible rela-tionships to experience and expression. It is a declaration of faith in the ability of the active soul (of a filmmaker, a character, or a specta-tor) to remain imaginatively free from being trapped by certain im-bringing forces. It is an act of belief in the sheer power of cinematic language.

# 3

# COGNITIVE
# PERCEPTIONS
# AND CINEMATIC
# MODELLING

BUILDING UP THE VISUAL SYSTEM

In a way cinema has a skill of redoubling the effect of light's motion because film images are actually moving, and a single image in a film never stands still, just as light never does, and just as the eye never does. The moving eye is the other half of moving light. "Modes of art using human experience for their subject that both engage the scanning eye and suggest its analogy to the inner life can rely on a raw emotional pull. In movies the camera itself is the seeking gaze, demanding enlightenment, and its choices can demonstrate its superior insight: good cinematography and editing give the effect of satisfying the eye's immediate prior longings at every instant. Ideally, the camera unerringly finds what the bodily eye and the mind's eye are both unconsciously lusting for or perhaps dreading." [205] After being shown a rapid sequence of unrelated skills, viewers can recollect information about some of the individual shots, and they show some signs of having visual expectations about what will come next. There is also evidence of a visual buffer that stores some small number of views.[206] We need mental structures to place the individual images and shots.

Our visual system has been built up so that local space is heavily controlled by subjective perspective. This was true even before pictorial perspective's development, which includes a reference to the fact that perspective's pictorial development is a rational, objective thing, and does not involve subjectivism. There is also a question of a point-of-view, which marked visual perception even longer before it appeared in images. In visual perception perspective is necessary, because we cannot deal with the object's forms, places, and where they are heading for, without the help of perspective.[207] Pictorial perspective is already a construction on which real-life vision intricately and radically depends. The differences between real-life vision and pictorial structures explain why pictorial perspectives are very flexible.

In processing an audiovisual flow of a narrative perceptual, emotional, and cognitive aspects are functionally related and represent interacting neural processes in the brain-body totality. Most of the neural processes are not conscious, since much of the constructive work in image-formation, and much of the implementation or simulation of motor programmes, takes place at a non-conscious level. But many processes will be felt as intensities and saturations. Torben Grodal has presented a four step –map concerning the processing of the audiovisual input.[208]

| Step 1 | Step 2 | Step 3 | Step 4 |
|---|---|---|---|
| First visual analysis of voluntary textures, lines, figures. | Memory matching, networks of associations. | Construction of narrative scene or universe: arousal, 'affect appraisal' and labelling. | Reactions: *Tensities*, voluntary telic, motor, sequential. 'Erno tensities', paratelic, semi-voluntary, repetitive cyclical. Motor *Emotivities*, autonomic relations. |
| *Intensities* | *Saturations* | | |

The first step consists of basic perception with rays of light entering the eye and activates the millions of rods and cones there. The brain makes its first analysis of input, and it will try to analyse colour, contrast, and so forth, and figures, ground, and spatial dimensions. This process creates perceptual intensities without any meaning in the ordinary sense of the word. Grodal thinks that many abstract paintings and experimental films try to produce an input that can only be processed at a Step 1 level.[209] Modern ideas of 'pure aesthetics' often equate aesthetics with Step 1 processes, as in Pollock's paintings and Brakhage's films, although this is a limited definition of aesthetics. The second step consists of memory matching. The brain runs through its memory-files in order to match and determine the identity of what has been shown. So, the brain searches its memory-files for possible matches. They are not, solely, visual structures, but also with affective values and labels. This accords with Eisenstein's description of the way in which emotions are represented and evoked by montage.[210] The cinema can work through highly elaborated images but the screen can also be used merely as a window through which one can look at realities. The quality of the screen image matters less than the visual composition of the reality shown. It is a matter of showing things more than staging or revealing them. Eisenstein arranged the dramatic of his images often across the width of the screen with more or less empty areas above and below left to catch the mood of the place, or to document the peasant life. Often in Eisenstein's films, the visual centre of the shot differs from the dramatic centre, and occasionally the films subside into aestheticism, as when the peasant or kulak faces in *The General Line* (1929) stare down with the impassivity of old masters in their frames.

According to Grodal, if a film concentrates its representations on a Step 2 level by merely showing different visual items that activate a set of memory files, the effect of the film is normally labelled 'lyrical'.[211]

This is what happens in many music videos and some commercials, which might be called the activation of networks of associations. Making the matching procedure difficult, so that the brain has to activate many items in many files in order to make the match may enhance the effect.[212] In most narrative films, Step 2 processing immediately leads to Step 3, which consists of relating and contextualizing the earlier items. It might be called the cognitive-emotional appraisal and motivation phase.[213] Arousal states normally activate telic arousal-reduction procedures. If no cognitive, voluntary, or autonomic outlet is found for the scenario, it will regress to a Step 2 mode. Step 3 leads to Step 4, which consists of reactions at a high level of arousal. There are three main types reactions. First ones correspond to canonical narrative schemata, implying hypothetical or actual, voluntary and teleological response. The second ones consist of hypothetical or actual semi-voluntary paratelic response (for example, long sequences in musicals). The third type is an autonomic response, such as crying, laughing, shivering, or making involuntary body movements.

This overall diagram is an interesting way of putting together different elements in the processing of audiovisual inputs. Of course, it is a simplification of the whole process. The different processes don't necessarily go in linear directions, most likely they go back and forth, and also they might all happen quite simultaneously.

## LEVELS OF MEANING AND SEMANTIC PROCESSES

Mental, and visual processes are essential in exploring cinema's visual and stylistic meanings, and the semantic processes according to film visuals are crucial to audiovisual research. The concept of semantics refers in its origins to philology, where it means the research of meanings with words, and from where it has gradually slid into the meanings themselves and into the research connected with them.

There is a willingness to connect semantics with natural verbal language, as linguistics call it, and then it can be either a special area inside linguistics or a wider feature of it. The general semantics is not to be restricted only to words, but also to syntactic meanings and wider references. Extensions of this kind can change into exceptions or break totally and gain independence through that, and then we can refer with semantics to all kinds of meanings. We can also talk about visual semantics and we can think, not only of signs and symbols, but also of the structures of the meaning inside the mind itself. The cognitive operations called thinking are not the privilege of mental processes above and beyond perception but the essential ingredients of perception itself."[214] For excellent reasons, high culture normally tries to maximise an artwork's semantic yield, but sometimes it might be useful to reinforce certain uncertainties in aesthetic theories. There are uncertainties as to when two ideas so mesh as to constitute a structure or theme, when their affinity remains merely incidental, when it makes an echo but generates no further ideas of much substance or consequence, when the similarities in a metaphor stop. There are uncertainties as to how far unity proposes a structural intentionality of some sort. For Eisentein's theory of montage might seem to strengthen the opposite view, that the fact of juxtaposition within an artwork is sufficient to turn any two spots, local events, into a structure provided even the slightest, vaguest or most general affinity between the exists. If montage exists between shots, as Eisenstein assumed, it must also exist between sequences or indeed ideas."[215]

Merleau-Ponty thinks that perception is the 'original text' of conscious experience, and thus of phenomenology itself.[216] Merleau-Ponty thinks that man's body is not an object but a condition for objectivity, a point of contact between consciousness and the world. Thus, meanings are contributed by consciousness, and perception is more than a mosaic of discrete sensations and more than their sum.

Perception is a primordial structure of encounter and engagement of the lived-body with and in the world. It is the mode of access, the opening upon the world that allows consciousness its objects through that agency of the body. Thus, perception becomes the existential paradigm of intentionality, the 'original text' or expression of the structure of consciousness which carries it's meaning within itself, as it shows itself.[217] Before perception can be predicated (that is, intended as an object of consciousness), it must itself provide the horizon and grounds that make predication possible.[218] Perception is just that act which creates at a stroke along with the cluster of data, the meaning which they have, but moreover sees to it that they have meaning."[219]

Perception, like the structure of consciousness, is never empty but always the perception of something. Given its existential nature, its link with the body that is finite and always has a particularly directed and biased access to the world, perception of something is invariably the marking of a choice and the setting of boundaries that constitute a field or context and its primary significance. Perception is structured and structuring expression of intentionality in existence. Perception is a lived experience and it also brings latent and operative thought into existence. Thus, we can speak of perception as thought itself, because perception not only engages consciousness with the world in a gestalt structure but also expresses through that gestalt the structure and structuring activity of consciousness in existence. In cognitive thinking, terms like 'gestalt' are closely related to cognitive terms like 'pattern' and more loosely related to cognitive terms like 'schema'. For example, George Lakoff's cognitive semantics represents a systematic research into the mental models that structure the human phenomenological world, and, although the precision of his theories and analytical examples of images and metaphors as mental models is modern, his way of thinking is very similar to that of phe-

nomenological analysis of aesthetic phenomenon carried out earlier in cognitive studies.

Seeing is an experience. A retinal reaction is only a physical state – a photochemical excitation. Physiologists have not always appreciated the difference between experiences and physical states. People, not their eyes, see. Cameras, and eyeballs, are blind. Attempts to locate within the organs of sight (or within the neurological reticulum behind the eyes) some nameable called 'seeing' may be dismissed. That Kepler and Tycho do, or do not, see the same thing cannot be supported by reference to the physical states of their retinas, optic nerves or visual cortices: there is more to seeing than meets the eye-ball."[220] The changes of perception are, or are due to, changes of interpretation commit us to saying that there are two processes, perceiving and interpreting. It is doubtful whether in real life we do experience a scene as a whole, as a succession of details to which, for example close-ups are a close approximation. When one focuses his or her eyes on a point one remains conscious of the scene as a whole, so camera close-ups are far more emphatic, and will cut up the visual whole quite drastically.

Russell Hanson thinks that one can rely on introspection of perceptual processes, and reason that interpreting is intellectual while seeing is not supposed to be intellectual, and that we are aware of interpreting but not aware of processes of seeing.[221] For Richard L. Gregory this seems an important mistake: 'Hanson's view is here a hangover from stimulus-response accounts of behaviour. The crucial point is that animals, an s well as adult humans and scientists, predict from limited sensed data to situations, which can be related only by kinds of inference. In fact we have every reason to believe that perceptions have their richness and integrity as well as their predictive power through inference. This is almost self-evident to the psycholo-

gist working on perceptual processes (though with exceptions), but it is anathema to philosophers seeking unadulterated, theory-free and assumption-free sensory data."[222] The processes of seeing involve many processes which could be described as interpreting, though we are not aware of these or any processes of perception A difference between passive reception and active perceiving is contained even in elementary visual experience.

That given world is only the scene on which the most characteristic aspect of perception takes place. Through that world roams the glance, directed by attention, focusing the narrow range of sharpest vision now on this, now on that spot, following the flight of a distant sea gull, scanning a tree to explore its shape. This eminently active performance is what is truly meant by *visual perception*."[223] It is a question of treating cognitive material on any given level and every process that may be included in thinking takes place at least in principle, in perception. Visual perception is visual thinking, confirms Arnheim.[224] One can also say that thinking is internal perception; it comes from one memory trace within the mind encountering other memory traces. Thinking is the *mind perceiving itself*.[225]

## EXISTENTIAL CONDITIONS

Vivian Sobchack thinks that existentially embodied perception functions in a threefold manner.[226] First, perception presents itself to the world as the concrete manifestation of intentionality. It is intentionality commuted to existence through the body's presence in the world; it is the body's material presence that gives intentionality existential form as a concrete activity. And second, perception connects intentionality with the world; it points to and indicates the world's presentness to consciousness and its objective presence - a presence

toward which intentionality is directed through the lived-body and its perceptive activity. Third, perception represents itself to itself and to others in the world as the existential condition and expressive convention of intentionality. As consciousness is aware of itself in existence, it is aware as a perceiving consciousness capable of perception; perception is not only intentionality prereflectively presenting itself to the world and others through its projects, but it is also intentionality reflectively representing itself to itself as consciousness and its significant experience of existence.

And further on Sobchack thinks: "Given these three functions of perception in existence, perception as it is lived and made concrete through the body-subject can be said to originate the correlations of the sign in the most primordial and seemingly prelogical movements of its being-in-the-world. Language and communication, however, do not emerge merely because I have a body as an instrument of perception that brings them into being. Rather I am my body. My body as lived perceptively, as engaged intentionally with the world, is already languaging and communicating by virtue of its systemic structure and material correlation with the world."[227]

In art, the painter first stages his subject through the mind, or through sketches and models. In photography, the photographer has to stage what she or he photographs, and the theatre director might think in terms of stage pictures. In film, one can think of choosing the elements through montage through a pictorial angle. What cinema does, or what an image does, is just as much reality as all the other things in the world (because one is looking at it, so it must be reality), but it rearranges that reality because the cinematic form is a different form. So, instead of "through that world roams the glance directed by attention", in cinema one's glance works in the order dictated by the film director; it is directed by his attention and by the form of the

film. And instead of his focusing at will, he is giving a close up, or a long shot, and the camera makes one follow "the flight of a distant sea gull", or it prevents one from doing it. Film form is a different order of perception on a world, which in some ways is the same as ours, in other ways different. While one is sitting in a cinema watching images, one can also see the cinema and the other people, and one can see that the image is only an image. In still photography the term 'shot' refers to a single exposed image. In cinema it means a series of frames. The cinematic frame is the picture.

Frame in a film has four overlapping, and highly confusable senses, the single image, its edges, the shot, and its field of view. If static frames are shown at sufficient speed, the human eye has difficulty in isolating them from one another, and a succession of broadly similar static pictures can fuse into 'one picture with movement'. The single frame is not exactly invisible, but in 'the moving picture' it is indistinguishable. It is invisible as a unit, but a single frame is briefly visible, and indeed legible. Between virtual invisibility and legibility many intermediate gradations are possible, depending on varied features of content and context, and their conjunction. The frame maybe in some sense subliminal, and if some theories of subliminal suggestion are correct, the individual frame might even be invisible but legible. For example, in Eisenstein's *Battleship Potemkin* (1925) there are single black frames between certain shots, which, though passing unnoticed, strengthen and sharpen the cut between the shots on either side of it. There is a sense in which such a black frame is an inserted 'shot', although it shows nothing and was not exposed through a camera. *Graphic feature* is a useful term for all those pictorial features, which are non-representational.

The usual definition of the shot as an uninterrupted series of exposures runs into complications. It assumes that the frames were ex-

posed and displayed at the same speed. But if the film is run through the camera more slowly than it is then displayed, the result will be what is called fast-motion. For example, in a scientific film, a camera might be set to shoot at the rate of three frames a day in four weeks, so as to show a plant grow, as it were in seconds. Far from being a mere novelty, the device has serious use as a discovery procedure for scientific purposes. Fast motion entails interruption, in the sense that the next exposure is delayed or retarded, however, the same shot may be uninterrupted in the sense that it is taken in the usual way, or that the successive exposes are triggered and stopped by an automatic timing device. The need for even motion favours automatic timing devices, without the need for interruption by humans. Given certain subjects, however, slow motion may be achieved by human interruption. The spectator may have no way of knowing which process was used, and whether she is watching a shot or multiple shots. We still speak of 'fast-motion shot', because it looks like one movement through one shot. The form of display does not reveal the form of production. In slow motion, the exposures are neither interrupted nor delayed, though their display is. Thus scientific films can reveal, for example, exactly how a bubble is broken up as the bullet from a rifle speeds through it.

Motion in the real world is very often too fast for us to see clearly, and slow motion does not strike us as an illusion, but rather as wonderfully meticulous detailing, so that it satisfies our reality-sense. Paradoxically, animation is closer to fast than slow motion. The usual definition of animation requires that the object must be moved by hand, or at least, individually controlled by irregular human intervention between frames. The definition does involve grey areas. Puppets pushed by the finger require animation techniques, whereas puppets on strings can be filmed normally, whence the rival definition that in animation films the objects depicted as moving do not move

themselves. Between animation and "live action" many weird hybrids abound, the name for the bizarre genus being "pixilation". Thus one might photograph a real live person in real live space but in fast-motion so arranged as to suddenly displace him from A to B to C ... Z. The identical effect could be achieved by shooting the scene normally and then *editing* selected frames. Or one could pixilate and edit. As so often, the effect of the final form depends on the spectator's perceptual processes, and the "constructivist" effect of form must contrive to fit their "restructuring" combinations of physiological structurations, and of acquired experience. Whether used to counterfeit live-action, to outrage reality, or to intensify realism, all these effects take their "meaning" from the spectator's knowledge of normal events, speeds, scales, photographic processes, production techniques, and so on. If in a sense they are illusions, and certainly, where the represented movement is concerned they are simultaneously recontexted by knowledge, and "downgraded" to impressions or diagrams.

Whereas the photographic shot is a single picture, the film shot cannot be defined as such, since movement is continuous alteration, especially when an object leaves or enters the shot, or when the camera moves generating an ever-changing scenic segment. If the shot nonetheless has a sort of felt unity, rather like our sense of "a picture", it is by constituting one continuous space-time chunk, with its continuous movement and change. In one central respect, the photographic shot and the film shot are diametrical opposed. The photograph stops movement, and renders eternal the facts and relationships of one brief space-moment. The eternal moment conquers time. Stillness conquers change, and space transfixes movement.

In contrast, the movie shot thrives on the transformation of the "moment of space" by time, duration, movement and change. Not that it renounces the option of stillness. It may depict a scene without

movement, or what is called the "freeze-frame" may still movement as the still camera does, although the display-time of the shot represents a controlled duration which the photograph on the page does not seek. The control of duration is an editing decision. The freeze-frame is another terminological oddity. In effect it is one exposed frame, reprinted on a whole series of frames. As photographic process, it is a single framer as cinematic display it is multiple frames, not "a frame" at all. Interestingly subtle surprises are possible as between freeze-frames and moving pictures of immobile scenes. Often "freeze-frame" refers to the sudden freezing of a moving shot: which in some respects is now two shots, movement, then fixity, normal change, then impossible transfixity. But here too grey areas occur, as in Bob Fosse's *Sweet Charity* (1969), where the spectator-can hardly tell whether certain freeze-frames were shot with a still or a cinematic camera.

Whenever film theory starts from photography it risks all the confusions that arise from the use of "shot" to describe structurally opposed entities. It is tempting to propose some alternative term for the moving shot. "Take" from "taking a photograph", would be appropriate. Alas, the term is already bespoke - as in "Scene one, take one". For it is common for a shot to require several attempts, and then movie cameramen call the shot a "scene" and each try a "take". In fact, of course, each "take" is a scene and a shot in itself. With the result that "scene" applies to (a) the camera's shot, (b) the scene in front of the camera during that shot, and (c) the general setting implied by the series of shots of which that particular shot is part. However baffling to those who expect linguistic forms to possess some structural logic these riotous terminological shifts originate in the practicalities of production process, such that no particular need is felt for consistent terminology, as distinct from specialized, provision and local purposes. These purposes are, to establish relationships be-

tween disparate entities - such as the scene to be shot, the shot in the camera, the shot as edited, the overall scene to be suggested. Since editing is by definition a relating process, it is all the more useful to avoid the traps set by language, which is too easily satisfied by its own forms of coherence, and occludes the demands of correct correspondence.

One can refer to smaller parts of the visual world, or to its whole framework; so it is a changing, developing and evolving process, while all the aspects are subject to continued confirmation, reappraisal, change, completion, correction, deepening of understanding.[228] One can speak of *cinematic semantics*, with which we can understand the exploration of cinematic meanings, concentrating on specific cinematic things like exploring the meanings of moving images, succession, montage-combinations and camera-effects. So in this connection the interest focuses on all kinds of visual and stylistic meanings of cinema. Concerning the reality the camera can only catch the visual surface of the physical world from one particular viewpoint, which is really restricted to the surface of local happenings because every shot has to happen within a closed area.

Lots of the processes within that closed area are not complete; thus, if one makes a film about weather, one can not do it within a scope of a photograph because all the events that make the weather are so scattered around the world that all one can really do is to put different photographs together and then the spectator infers a connection. If one makes a film about the weather by combining 40 different shots, that is really outside photography because the connections which are demonstrated exist through editing, not within the photographs. Consequently as soon as one combines two photograph one has exceeded the limits of photography, and one makes an abstract or general connection. As a conclusion one can say that film is a great deal more

abstract than it looks because it depends on the connections between the photographs, not on what happens in the picture. What happens on a screen is like a clue to a whole *association* of ideas that come with it. Photography is conspicuously a fragmentary affair, depicting not objects and events, but aspects of appearances.. Mainstream aesthetics has assumed that any objectivity was thoroughly compromised, or redeemed by the selectivity of the process, technique, and authorial decisions. A photograph is the traces of reality, but not even a synedoche of reality. It is really only one way of constructing abstract graphics, which by visual analogy, resemblance, and association are interpreted as scenes. It is less an illusion than an allusion.

To some filmmakers, good editing poses first a visual question and then a visual answer. In experimental studies of film or video cutting, both the visual question posed and the larger story structures within which the shots are presented significantly affect how the edited shots are comprehended.[229] The mental structures fitted to our successive glimpses at the screen and at the world cannot have the characteristics of the world itself. Movements as we remember or anticipate them do not continue to run off in time, nor do remembered or anticipated layouts continue to exist in space.

When following a narrative film, a spectator internalizes the whole structure of interests depicted in the drama, and this structure includes alternative outcomes to various lines of action which the spectator must keep track of in some sense before one alternative is actualized in order for the film to be received as intelligible. Film theorizing progresses by criticizing already existing theory, and in criticizing one theoretical solution to a problem, one may also see one's way to a better solution. It is a question of dialectical criticism, a mode of rational inquiry. This was the point of *cognitivism* because of the emphasis that it placed on the efficacy of models, which exploit the

role of cognitive processes (as opposed to unconscious processes) in the explanation of cinematic communication and understanding. Its proponents share certain convictions, for example, cognitive models may provide better answers to many of the theoretical questions concerning cinematic narration. Cognitivism challenges many narrative paradigms because it focuses on the evaluation of cinematic communication through our best abilities of experience and reasoning.[230]

Thus the question is of the perception of phenomena and thinking (logic), in which there lays a human being's chance of gaining information about reality by *perceiving* it with the help of experience and thinking.[231] But as Gordon Rattray Taylor writes in *The Natural History of the Mind:* "However, the genius of a Goethe or a Shakespeare, a Sophocles or a Tolstoy, A Milton or a Racine, seems to be of a somewhat different kind. Here it is the imaginative projection, which counts, the power to identify with the emotions of the others and to express them in words and simulated deeds. This demonstrates that thought is not solely a matter of intellect. There is a constant interplay between the coolly reasoning cortex and the impulsive, excitable mid-brain. And this is true not only of the works of geniuses but of the 'thinking' of everyday life."[232]

When viewing a film we will perceive it at a certain conceptual level as directed by viewer and/or addresser, programming, for example, by means of narrative schemata, framing, zooming, and other indexical procedures indicating formats of attention.[233] At the same time, the viewing will activate networks of associations below the threshold of consciousness, and activate superior, 'propositional/abstract' frames and themes. Films are comprehended universally, because it is clear that the spectators can understand films that are made in different cultures and in different circumstances. Maybe this links with the idea, that there is something common and shared in the universal

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understanding of images and sounds, which is based on human nature and understanding of different phenomena. For Jean Mitry, the cinema is a medium of re-experience, of discovery and creation. It is a phenomenon in which meaning - never fully predetermined - arises as a function of perceptual, emotional, and intellectual activity; and in which the world - never fully meaningful - is grasped again as dynamic presence.[234] Most narrative fictions will simulate reality because emotions aroused can be symbolically gratified by fictitious acts. A spectator seeing attractive phenomena in visual fiction is promised possible future mediations with its objects by identifying with a protagonist and his or her mediating acts. To participate at this level of meaning, the spectator must identify with some protagonists' capabilities for subjectivity and action within the fictive world of the screen.

In cinematic narration a cut juxtaposes not only two scenes, but also two graphic configurations, or structures. This juxtaposition is a visual event, so the structure of each shot can strike against its predecessor, generating a clash, or a collision, which is physically palpable in its energy. A kinetic kick may be generated by the juxtaposition of strong, and bold compositional lines. A cut may be smoother if the centre of interest in the first shot's last frame roughly co-incides with the centre of interest in the second shot's last frame. In such cases the spectator's eye can move swiftly from one centre of interest to another. Gerald Mast has pointed out that "any work of art is a self-contained little universe, a microcosm complete in itself".[235] And an interest in universes like that is based on the fact that they offer us something what is different compared to natural universes. The universe of a work of art is finite and orderly, and its order is perceptible and comprehensible, because it functions under certain laws, it has logic of its own. [236] One can understand cinema's universe as a kind of microcosm, a world with its own order and logic but also a world with associations and connotations related to its viewing process; and

when a spectator puts his soul into that world, he or she sees that it is a "picture" of that world; one can feel oneself "inside" that picture, but in a second one can move "outside" that picture and observe the whole process.[237]

To experience cinema is based on a two-way tension of that kind. Thus, as we watch films we are at the same time under many simultaneously appearing stimuli. Cinema is composed of visual images (whether coloured or black and white ones), spoken or written words, music, actors, sets and so on, of many ways of telling its emotions and ideas to the public. The simplest way to define the film image would be to identify it with a single frame extracted from the filmstrip. But such a definition would possess serious deficiencies. Psychologically when watching a movie, we experience action, movement, and sound, not a static frame. We need to accept as images the gesture of a hand, say or the ringing of a telephone. In order to conform then to ordinary discourse and common experience, a looser definition of film image is necessary. This suggests that the film image should be thought of as any simple object or event, normally perceived and regularly identified as a single entity, that is presented on either the screen or the sound track."[238] Image is multifaceted and ephemeral concept. Our experiential reality is flooded with perceived, remembered and imagined images because we are living in an image culture.

In cinema, systems of communication are based on the artist's choices from elements of construction. According to Juri Lotman every image on the screen is a sign: it has meaning, and it carries information.[239] And while doing that, there are two kinds of meanings: first of all, images on the screen reproduce some sort of objects of the real world, and then a semantic relationship is established between these objects and the screen images (objects become the meanings of the images reproduced on the screen); on the other hand, the images on

the screen may be augmented by some additional, often totally unexpected meanings. One can call them additional meanings, which can be symbolic, metaphorical, metonymical and so on.[240] Films can use symbols of many sorts to arrive at an extra layer of experience. This does not have to be a generalisation, an allegory, or a moral but just an extra awareness of the characters' feelings, of forces and factors operating inside the story. Cinema has been called a chain of visual impressions running and interlocking in an uninterruptible succession of graphic bombardments.[241] What this is to say, is that visual thinking and cinema language have to be understood as a certain kind of intellectual activity, because in a creative cinema a most simple kind of scene involves a massive series of directorial decisions that go far beyond the realistic situation behind the scene.[242] The film experience is a system of communication based on bodily perception as a vehicle of conscious expression. It entails the visible, audible, kinetic aspects of sensible experience to make sense visibly, audibly, and haptically.[243] As a communicative system the film experience uniquely opens up and exposes the inhabited space of direct experience as a condition of singular embodiment and makes it accessible and visible to more than the single consciousness who lives it.

For example, Clive Bell thought that painting is art if and only if it possesses a significant form.[244] Though the importance of form was made especially apparent by the tendency of modern art toward abstraction, significant form was a property said to be possessed by all artworks, past, present, and future. Significant form is compromised of arrangements of lines, colours, shapes, volumes, vectors, and space. Genuine art, on this view, addresses the imagination like the figures of Gestalt psychology, prompting the viewer to fill the artwork in such a way that we apprehend it as an organized configuration of lines, colours, shapes, vectors and spaces. Noël Carroll thinks that theorists like Bell did not argue simply that formalism was the best theory for

newly emerging and newly acknowledged forms of art.[245] They maintained that formalism revealed the secret of all art for all times. From the formalist perspective art could be representational, but unlike the representational theorist, the formalist regarded representation as an incidental rather than as an essential property of artworks.[246]

## SYMBOLIC FANTASIES

Miklo´s Jancsó's *Red Psalm* (Még ké a nép, 1971) is visually and cognitively an exceptionally interesting example of art that is based on historical events, because the story line follows a series of revolutionary peasant uprisings in Hungary between 1890 and 1910. The Hungarian title *Még kér e nép* is a title of a poem by Sándor Petöfi meaning "the people still demand", and referring to the theme of the film. The scriptwriter of the film, Gyula Hernádi, found a notebook of "Socialist psalms", and he and Jancsó were heavily influenced by Deszö Nagy, a historian, who emphasized the meaning of popular folklore as an inspiration for the uprisings. Yvette Biro, credited as "dramaturge", helped transform the ideas into dramatic actions and characters.[247] The actual performances in the film are imaginary, and many of the incidents and happenings inside the narrative were improvised during the shooting of the film.

The setting of the film is Hungarian plain with a river, a church, some farm buildings, and a railway line. The film begins with a peaceful image of a woman's hand holding a dove, and this image is accompanied by the tinkling of bells, and the music of the "Marseillaise". The scene stretches out to show a group of men and women peasants, horses, and soldiers in uniform. The local bailiff steps in, and the peasants sing, dance, and walk. The bailiff tells the peasants that he wants to talk with them, and the peasants demand rights for the people. One of the reads a Friedrich Engels's letter commenting the

political situation in Hungary in the late 1890's. The bailiff withholds sacks of grain from them, and a blonde woman (Andrea Drahota) tries to link the separate groups of villagers. A group of women approaches the soldiers, takes their rifles from them, and throws them on the ground. Then they confront the bailiff.

The peasants dance around to the music of the "Carmagnole". A folk-violinist quietens the mood, and few officer cadets hover around the folk-dance troupe curiously or thoughtfully. A dark-haired cadet half-offers villagers a jug of wine, and his reddish-haired companion has little sympathy for them. A senior officer with curly facial hair leads in new troops, throws a sword down into the ground, and tosses the red-haired officer a revolver, as if recalling him to a duty. Infantry surround a circle of villagers, who turn outwards to face them, reciting Socialist proverbs. Three women walk past a line of soldiers, slowly baring their breasts while reciting a "red psalm", and strolling into the distance they also drop their skirts, and close into a circle. As the soldiers, deserting their posts with a shout, run towards and past them. A line of villagers with locked arms follows triumphantly, as distant cavalry herds the soldiers into a tight clump.

Night falls, and around the bonfires of stacked rifles the peasants sing another militant song. The sympathetic cadet strolls amongst the villagers, and with a revolver in hand he tells a guitarist that he was sent to kill him. Village women welcome him. The folk-dance group has emerged with the other villagers, and they dance around them singing "Johnny is My Darling, the Union volunteer." The cadet's walk subtly responds to its rhythms, but a senior officer rides his horse at him, nudging him backwards to the other cadets. He throws his revolver down, but another cadet retrieves it, and passes it to a third one who fires at the villagers. The darkest-haired of the three women ("three graces") silently raises her hands, and one of them bleeds, as

if from bullet. Her gesture signifies, not so much surrender, as display to her comrades. A cadet kisses her shoulder, but other cadets walk him backward, and one of them shoots him. He lies, as if dead, between the sword thrust in the ground, and two village women. They kneel over him, and one of them bends to kiss him, and reviving he looks probingly into camera, while still touching the hilt of the sword. Instead of a wound, the dark girl's hand now bears a red cockade, which she parades to her fellows. *Johnny is My Darling* resumes, and now the villagers are free of the circling cavalry, surrounded by fertile scenery with farms, fat heaps of grain, and flocks of sheep. The three graces stroll along a path away from camera, before being pursued by young village men, who surround them, seize them, bring them back, and lift them into huge wooden water-vats, around which dancers whirl long coloured streamers.

In an open field with few trees, an elegant young landowner, the Count (András Bálint) hand his hunting rifle, as if disarming himself, before talking to the villagers. The hawkish-cadet takes it, but semi-casually keeps it in the picture. Afar, the cavalry have returned. The Count embraces the guitarist, and shakes hands with the villagers in respectful way. Sitting under a tree, he expounds an iron law of economics, that abundance can only lower prices, and therefore wages. He recommends austerity, and the accumulation of moral capital. To this a crabbed-faced man opposes another list of demands, and this time for political rights and for workers' organisation against the autocratic system. The aristocrat quietly replies that education must precede rights, before lying down, turning over, and dying. Village women approach, and kneel affectionately around his body. Towards them gallops a smartly dressed blonde horsewoman, and the village women help her lay out a white sheet for the dead man.

This kind of combination of actions, movements, dialogue, and music is typical for Jancsó. Although there are many conflicts inside the narrative, the general mood of the film is one of celebration, and the peasants show more unity and comradeship in their actions than despair and loss of hope. The movements of the people are choreographed, but the overall impact is one of spontaneity, joy, unity, and hope. The peasants are capable of positive action, and they are constantly in a state of debate and argumentation. Still their real strength lies in unity and mass action, which is richly produced through their singing and dancing. The songs and dances represent a wide range of peasant feelings and experiences with strong, nationalist undercurrents. There is not much in the film that corresponds to a naturalistic use of dialogue. There are slogans of economic and politic tactics, and assertations of solidarity and allegiance.

The rhythm of the speeches varies a lot, and the formal quality of them creates moments of repetition, and segments of phraseology. The peasants express their feelings as a group, and as a class. This brings in wider historical perspectives as qualifying elements of narrative in Jancsó's approach. The men and the women have different roles in the narrative, and they tend to move and act in groups. The occasional nudity of women has a special dimension, and creates different responses, and also brings in more emotional and sensual than intellectual tones. It is a sign of free spirit among the peasants, and a counterpoint to the heavy clothing of other participitants.

In earlier Jancsó-films such us the *Round-Up* (1965) and the *Red and White* (1967), women are seen mainly as victims of male violence, but from *Confrontation* (1968) on, women begin to take more active roles in resisting the opposition, and in attempting to defeat it.[248] In the *Round-Up*, the occupying Austrians promise a peasant that he can escape execution if he can find a partisan who has killed many. Before suffering torture or execution, victims must march in file, form circles, strip or lie down, or undergo these absurd ceremonies that merely display their subjection to the will of authority. Jancsó belongs to a generation appalled by the revelation of wartime atrocities, and the Nazi death camps. Jancsó suggests that power is exercised through public humiliation, and total control of the victim's body.[249]

With Jancsó the style of his films is geared to a collective struggle. The moving camera makes no separation of leaders and led. *Red Psalm* develops an essentially literary text by means of physical movement, whose minimally terse dialogue suggests without specifying historical trends, moments, and issues. Characters are not often individualised. They are more like anonymous performers rather than positive heroes or heroines. Almost all villagers are young, and the almost total absence of the old people seems to function as a part of the

film's style. Jancsó's style is often abstract, and increasingly complex combination of camerawork, dialogue, sound, colour and music. *Red Psalm* shows his characteristic style as most expressive and powerful.

The direction interweaves different dimensions of space., movement, and change. Most unusual is the walking choreography with its changing body movements, and rhythms. There is also a strong pictorialist dimension with the images of landscapes. They are often revealed gradually, and the camera movements become a focus of attention with their own kinetic dynamism. They are calligraphic, so, the camera lens seems to move across the scene as a pen moves across a piece of paper. There s rarely any one centre of visual interest that is followed throughout the shot. Usually, the camerawork is a combination of zooming and tracking, and drifting from one individual to another, and from one group to another as they confront and intermingle throughout the narrative. The camera does not stay with one activity or character for very long, and often incorporates several centres of interest within the frame. From this constant succession of actions and movements emerges a pattern that sets up the play of opposing forces, and qualifies the nature of on-going confrontation between different groups.

The lack of interest in following certain characters and performers throughout the scenes, and the avoidance of following a conventional plot structure give the film its episodic and abstract nature in which the spectator's attention changes without warning from one series of actions to another.[250] Jancsó tries to avoid normal continuity, and instead of that creates a kind of different continuity with a focus on certain themes and structures rather than following characters and their actions. Visual and rhythmic delight is created mostly through the moving camera. The compositional values of the narrative are very high, and, for example, in the scene with the peasants massacre

by the soldiers the camera watches everything from high angle and in a long shot. This creates a majestic composition with painterly dimensions The soundtrack is meticulously wrought, when overlaid sounds add aural space to visual space, and the sparse use of words enlarge local actions to wider patterns of history, and the music suggests moods and tension into the narrative.

Some of the characters come in pairs, and many elements in the film are paired in one way or another. As well as pairs there are triads, and in dramas as in histories these relations change all the time in the course of the narrative. These cinematic forms are descriptional since the narrative events could remain identical even if technical or other factors would have created different forms. Fiction writers shape the narrative to accommodate a character or a scene which they wish to describe as their descriptions respond to some narrative requirements. Description dominates narrative, and vice versa. Film's basic unit, the photographic shot, is a descriptive structure, and in all the arts style serves description as conspiciously as it serves narrative.

In *Red Psalm* the pictorial landscape becomes an arena, like a theatrical space, which is created by a body of actors whose relations assert a visual and diegetic unity.[251] The same logic applies in a conventional theatre, when actors enter the space around them, or play scenes amidst the audience a s well as on stage. There is a sense of spatial unity in *Red Psalm*, and it survives many changes of setting, breaks in the action, and edits in time. In this respect Jancsó anticipates Angelopoulos, another figures-in-landscape artist. They are both developing through their totally cinematized settings a form of extended theatre. *Red Psalm* is able to combine richly realistic elements with choreography and behaviour with great stylisation.[252] The real surprise of this is that it is not unrealistic or artificial, but more like a mixture of different elements.

In *Red Psalm* Jancsó mixes realistic and unrealistic elements, and uses narrative and non-narrative elements side by side. Jancsó´s use of folk rituals add a strong sense of visuals into the overall narrative, because the emphasis lies on physicality of the different forces inside the images. Jancsó processes the different formations of the performers with the emphasis on movements and gestures, and when the individual performers move, everything is always in relation to some of the groups. Also details mean a lot, because through the use of his moving camera Jancsó could focus on tiny, and often unexpected details that will follow.

Jancsó's direction is built on stylised manoeuvres that stretch realism of the scenes. The films are symbolical fantasies enriched by phenomenological realism. The poetic abstractions are included in the narrative by the physicality of the performers, and vividly photographed landscapes. Atmospheric and changing expressions vibrate with life, and creating dissonances, and human ambiguity around them. The sensual photography produces painterly images with dramatic counterpoints. Meanings of the narrative are changing and fluid. *Red Psalm* has visual materialism, which requires an auteurial vision to elaborate it.

## COGNITIVE FUNCTION AND PERSPECTIVE

The cognitive skills of humans have not been developed in opposition to their emotions and their bodies; on the contrary, they have been developed to carry out the preferences of the body-mind totality. The evolution of cognitive skills has pragmatic origins: it is easier to obtain food and avoid danger if we have precise cognitive maps of the world than it is if the world is just an eternal deconstructed flux. The emotional ties among humans have developed because such affective

(emotional) bonding has had a positive ecological value.[253] The cognitive processes, which Freud and others call 'secondary' processes, are, from the point of view of evolution, the primary ones, which we share with the rest of the animal kingdom because we want to perceive and represent the world in such a way that by actions we can implement our body-brain preferences in an optimal way.[254]

This sense of a 'body-mind totality' is crucial to Grodal's cognitive approach, and places it in opposition not only to psychoanalysis but also to behaviourist psychology.[255] Behaviourist psychology discounts the importance or sometimes even the existence of mental processes, and aims to explain even apparently highly conscious and complex human behaviour and its associated emotional components in terms of physiologically based reaction to stimuli.[256] To sum up this psychology in a brief, caricature way, all human life can be understood as an extension of the dog that has learned to salivate when a bell is rung, because it associates the ringing of the bell with the provision of food.

Cognitive science judges this approach to be inadequate to the phenomena it seeks to explain, and contends that in order 'to understand language, visual phenomena, or behaviour', it is necessary to understand the mechanisms and structures by which these activities are processed by the human mind-brain, and for Grodal, 'the human mind-brain' includes the perceptual system - the senses of sight, hearing, smell, taste, touch - by which we receive stimuli and data from the external world and from our own bodies.[257]

Cognitive science, however, takes a constructive and functionalist approach. It concurs with post-structuralism and deconstruction in acknowledging that meanings are constructed and are not metaphysical essences that can be grasp through intuition or through a particular

interpretative procedure; but sees such constructions as the product of social negotiations between human beings with brains and bodies who are trying to function effectively in a world of which they are a part - trying to know, to gain accurate cognition of, the world and themselves. The fact that they may no gain accurate cognition - that their interpretations of the meanings o the world and of themselves may be wrong - does not entail that cognition is arbitrary, oppressive or impossible; rather, the possibility of error entails the possibility of accuracy. If it is possible to get the meaning wrong, it is also possible to come to know that it is wrong and to find ways in which a correct meaning might be found.

Mental models are pretty permanent, and it is visual fiction, such as film, that makes them especially visible, because audiovisual media are the most sophisticated yet invented by man for simulating and manipulating the many different aspects of the ways in which we perceive, feel, think, act, memorize, associate, and socialize.[258]

The idea of simulation is important in Grodal's cognitive film theory. Film can simulate reality, and in order to do so it employs 'the same cognitive and affective mechanisms that we use in our real-life experiences and in our mental representations of them. Higher mental life relies on the ability to execute hypothetical, fictitious imaginations.[259] Grodal takes the view that the human mind cannot access the world directly; it operates, rather, by making evaluations, based on knowledge, understanding and emotion, of the degree of reality - or, as Grodal terms it, the 'reality-status' - of a particular configuration of images. We are constantly making judgments as to whether an apparent phenomenon is reality, fantasy, or dream, fact or fiction, credible or unbelievable.

Such evaluations are complex acts involving a range of procedures, and in visual and other fiction they can be rendered uncertain by a variety of techniques. Dream sequences or flashbacks in a film may be fairly clearly signaled as such - for instance, by switching into black-and-white and/or slow motion and/or silence - but they may also be presented without obvious signposting and initially cause disorientation in the viewer. The creation of uncertainty about the 'reality-status' of a set of film images contributes to a film's aesthetic effect.

A film works by activating a range of psychosomatic dimensions in which mind and body work together - perception, cognition, memory, emotion, and what Grodal calls 'enaction', the carrying out of acts in response to situations and stimuli. In watching a film, one cannot enter the screen world to participate in its action, and one does not usually carry out, in the off-screen world, the acts suggested by one's response to the situations and stimuli that the screen presents - though exceptions can occur. Nonetheless, one's mind and body may prepare for and/or imagine such acts, as when one tenses one's muscles, for fight or flight, in response to a situation represented on the screen that, if it occurred in real life, could demand the enaction of such responses. A film also activates two different mental processes: the associative, in which one phenomenon is linked to another by some likeness; and the sequential, in which one phenomenon follows another.

Their linear form is not due to abstract logic, but to 'real-world constraints on the sequencing of events and the downstream" relations between motives, cognitions, and acts.[260] If this flow is disrupted, for example by the activation of associative mental forms or by representing a consequence before a cause, different aesthetic effects and different emotional tones will be produced. Given that the conscious capacity of human beings is limited, any audiovisual experience will

comprise a mental hierarchy in which some phenomena - often those that arouse a strong desire for an enactive response, a desire to do something - will be the focus of attention. Other phenomena will not disappear, but will form 'a non-conscious associative network enriching the experience', or a macro-frame, a set of propositions determining the nature of the focus to which one is attending.[261]

The experience may involve what Grodal terms proximal, 'subjective' experience, and distal, 'objective' experience. In proximal experience, phenomena 'are experienced as located in the body-mind' and may be described in terms such as 'causes pleasure to mouth, skin, causes pain to mouth, skin, causes inner feelings, releases cognitive and hormonal response'. In distal experience, phenomena 'are experienced as located in the exterior world' and may be described in terms such as 'a given item is sweet, soft, sharp, appealing, green'.[262] Grodal sees subjective experience in film as linked, not to a freer play of the mind and feelings, but, paradoxically, to a greater constraint on voluntary acts. 'Subjective camera' entails strict limitations on the placing of the camera, since the camera has to be positioned where the eyes of the protagonist, in any given scene, are supposed to be. It can be seen that Grodal offers a formidable and comprehensive theory that marshals a range of terms and concepts rather different from those of psychoanalytic film theory and that, in its emphasis on 'innate brain circuitry', sets itself against the post-structuralist emphasis on the endlessly mobile, always reconstructible subject.[263]

## CINEMATIC COMPREHENSION

David Bordwell has described the way in which the viewer uses the film as a series of cues to construct the narrative, whereas stylistic information tends to be thrown away and may be difficult to retrieve.[264] On the other hand, humans have an almost unlimited capacity for

storing and recognizing images. Bordwell develops a cognitive theory of film comprehension, which he explicitly opposes to a psychoanalytic theory of film.[265] Psychoanalytic film theorists define the experience of reality as not being delimited by the horizon of consciousness (or 'common sense'), but argue that it includes myth, ideology, and unconscious desires and fantasies. According to psychoanalysts, our consciousness is merely the tip or peak of our identity, most of which remains hidden and repressed. But for cognitive scientists, consciousness is not a mere superstructure, but the base, or basis, of identity. Following the cognitive scientists, Bordwell argues that film theorists should begin with cognitive explanations of filmic phenomena, and should move on to psychoanalytic explanations only if a cognitive account is found wanting.[266]

The basic premise of Bordwell's theory is that narration is the central process that influences the way a spectator understands narrative film. Moreover, he argues that spectators do not simply absorb a finalized, pre-existing narrative, but must actively construct its meaning. Bordwell develops his theory within what is called the 'constructivist school' of cognitive psychology, which studies how perceivers 'make sense' of the world from inherently fragmentary and incomplete data and experiences. For example, we can only directly see three sides of a six-sided solid cube. But from this incomplete experience, we complete the cube by 'appending' the other three sides. Bordwell and other cognitive film theorists argue that film is like a six-sided cube in which spectators see at most only three sides on screen. The spectator has to complete the film by appending the other three sides, so to speak.

Bordwell outlines a cognitive theory of film that tries to explain how spectators complete a film's narrative, rendering it coherent. Spectators are not free rational agents who can simply 'fill in the gaps' in a

film in any way they wish. Instead, intersubjective norms, principles, and conventions guide them. When watching a narrative film, spectators do not simply 'absorb' the data, because it is not complete in itself. Instead, they have to process this inherently incomplete data. And they process it using what cognitive psychologists call schemata - norms and principles in the mind that organize the incomplete data into coherent mental representations. Schemata are activated by 'cues' in the data. Bordwell notes that gaps in the data are the most evident cues, for they are simply the missing data that spectators need to fill in. For example, a cube 'suggests' its three hidden sides (the missing data) by a variety of cues, the way the three visible sides are projected in space, the way the viable sides form edges, and so on. More accurately, the cube cues us to fill in the three hidden sides. This process of filling-in is called *hypothesis or inference generation*.

Narrative films cue spectators to generate inferences or hypotheses - but not just any inferences. When comprehending a narrative film, one schema in particular guides our hypotheses - the one that represents the canonical story format.[267] Moreover, comprehension of a narrative is made easier if it is organized around a goal-oriented protagonist - a character who drives the narrative towards his or her predefined goal. Spectators do not, therefore, enter the cinema with a blank mind and passively absorb the film's narrative. Just as each language-learner internalises the rules of his/her native language, so each film spectator internalises a schema, a template or set of norms and principles with which to comprehend narrative films. Spectators internalise a schema called the *canonical story format*.

Bordwell also identifies several types of gap (the most recognizable cue in the text). When analysing gaps, we need to ask: Are they temporary or permanent? Most are temporary - that is, resolved by the end of the film. Second, are they flaunted or suppressed? A gap is

flaunted when the spectator is made aware that there is some information they need to know about the fabula, whereas a suppressed gap does not call attention to itself. Finally, are the gaps diffused or focused?

A diffused gap is open ended, leading the spectator to generate a series of non-exclusive hypotheses, whereas a focused gap is clearly defined and leads the spectator to generate an exclusive hypothesis. A diffuse gap introduced at the beginning of a film can be gradually brought into focus as the film progresses. The expositional moments in a film introduce pertinent background information about the settings, characters, and states of affairs. Exposition can be concentrated into a few scenes or, more rarely, diffused throughout the whole film. If concentrated, it may be preliminary (appearing at the beginning of the film) or delayed until the end (as in detective films). The syuzhet can also set up false leads, complications in the action, and subplots to delay fabula information. Or it may convey some information on several occasions (redundancy), to reinforce the importance of that information and ensure its effective communication.

Edward Branigan's cognitive model of narration presupposes both a sender and receiver of a film - in fact several senders and receivers. Branigan draws upon concepts from cognitive science, narratology, and linguistics to develop his theory of film narrative and narration - more specifically, a theory of a story world's space, time, causality, of point of view, levels of narration, the relation between subjective and objective narration, and the relation between fiction and narrative. Like Bordwell, Branigan employs the concept of schema to explain the role of narrative in organizing the spectator's experience of a film. Moreover, Branigan does not represent the narrative schema as a linear list, as Bordwell does when writing about the canonical story format. Instead, Branigan develops a more open and dynamic model,

one organized as a hexagon with the main narrative actions (exposition, complicating action, and so on) represented at the points of the hexagon, and linked together by connecting lines.[268]

This model captures the complexity of narrative more than a linear model because it describes the recursive nature of narrative: 'Narrative is a recursive organization of data; that is, its components may be embedded successively at various micro- and macro-levels of action'.[269] The narration conveys these narrative events to spectators, and the uniqueness of Branigan's theory and methodology lies in the complex model of narration.

According to David Bordwell: "Meaning-making is a psychological and social activity fundamentally akin to other cognitive processes. The perceiver is not a passive receiver of data but an active mobilizer of structures and processes (either 'hard-wired' or learned) which enable her to search for information relevant to task and data at hand. In watching a film, the perceiver identifies certain cues which prompt her to execute many inferential activities - ranging from the mandatory and very fast activity of perceiving apparent motion, through the more 'cognitively penetrable' process of constructing, say, links between scenes, to the still more open process of ascribing abstract meanings to the film."[270]

Every cinematic text should be as it is, full of clues, which allow us to deconstruct the assumptions, gaps, disconnections and points of breakdown. But the notions against it are clearly shown in cinematic texts that are based on streams of consciousness, dreams or free associations. The riddles and gaps connected with them, offer us a chance with so many explanations that the confidence is lost. Of course, we can think that every gap in a cinematic text can be explained by some code. But if every cinematic text is characterized by an interaction of

many kinds of structures (which break down each other), then it is not possible to generate fully and clearly which structure is responsible for a certain gap in a cinematic text.

Rudolf Arnheim thinks that a human mind can be forced to produce replicas of things, but it is not naturally geared to it, since perception is concerned with the grasping of significant form. The mind finds it hard to produce images devoid of that formal virtue.[271] And as symbols, fairly realistic images have the advantage of giving flesh and blood to the structural skeletons of ideas. "They convey a sense of lifelike presence, which is often desirable. But they may be inefficient otherwise because the objects they represent are, after all, only part-time symbols."[272]

In the 1990s, film theory shared in the retreat from grand theory to be found across the humanities and human sciences. The most widely publicized idea of the decade was postmodernism, and this claimed that the era of grand narrative, and theories was over. Christianity, Hegelian philosophy, Marxism and structuralism were all consigned to the dustbin of a history that had effectively come to an end, things would still go on happening, but no large-scale systematic change would ever again occur. What were left were local, partial, provisional narratives and theories, aware of their own fragility, and thus able to provide specific insights without ever proving oppressive. This chimed in with the advocacy of 'piecemeal theorising' by thinkers who would not have allied themselves with postmodernism, such as the cognitive film theorist Noël Carroll.[273] There are plausible theories about story structures, in the form of hierarchical analyses which account for much of readers' memories of the story's contents. These analyses describe the structures of the narrative film, and not the spectator's mental representation during the viewing of the film.

VISUAL LANDSCAPES

Visual perception, and cognitive understanding of visual processes are extremely important in analysing the films of Béla Tarr. In a Tarr film reality and imagination mix and *reflect* each other. This all has a specific quality, which creates stimulating differences. Tarr extends many de-dramatising tactics. His special interest is in the landscape and stretches of dead time. Tarr's camera examines the scenes with its own curiosity, enumerating the contents of the shot before it with only small movements, and after that, panning in the appropriate direction. Béla Tarr is a modernist in creating a recognisable, self-conscious style, which he carries throughout his works. In his films the long takes and camera movements create dialectic among different elements in the shot.[274]

Tarr blends European cinematic traditions with a new kind of cinematic awareness. Tarr has openly expressed his admiration for Jean-Luc Godard and Abbas Kiarostami, but in terms of style their work is at some distance from his. His use of the sequence-shot (a single shot that takes in a significant amount of action and information) to orchestrate complex movement and edit it within the frame without cutting links him, of course, to Miklós Jancsó, as well as to early Sergei Paradjanov, and to Tarkovsky, Angelopoulos and Sokhurov: all figures who have been in major roles in the cinema of Central and Eastern Europe. Tarr's vision, though, is distinctively his own. His films have presentness, a being-there that marks them off from the historical preoccupations of Jancsó, and fixity of place and time that separates them from the perpetual odysseys of Angelopoulos. Nor, as a non-believer, does Tarr share in Tarkovsky's sacred vision of the four elements of the material world, transmuted from Russian Orthodoxy. The sheer weight of his images seems to make them immune to the temptations of a lustrous transcendence.

Tarr's film *Werckmeister Harmonies* (Werckmeister harmoniak, 2000) is a mesmerising and cognitively interesting mediation on popular demagogy and mental human manipulation. Tarr is a highly acquired and original filmmaker, and has yet to acquire the broad critical following of fellow Hungarian Miklós Jancsó and Greece's Theo Angelopoulos who are often referred as his closest filmmaking relatives.[275] *Werckmeister Harmonies* may start to change things and prompt rediscovery of his earlier works, including especially *Damnation* (Kárhozat, 1987). Tarr is one of the few genuinely visionary filmmakers in our time. Adapted from Laszlo Krasznahorkai's novel *The Melancholy of Resistance* (1989), *Werckmeister Harmonies* also reunites the technical team behind *Satantango* (Sátántangó, 1994), photographer Gábor Medvigy and composer Mihaly Vig for an opus that's recognizably a Tarr film but in comparison with *Satantango* also different. Events move forward at a relatively rapid pace related to Tarr's earlier films, to a final half-hour that brings in a greater emotional dramatic. The setting of the film is usual to Tarr: a small and bleak Hungarian village, in a freezing winter temperature.

*Werckmeister Harmonies* is a classic demonstration of his symphonic approach to filmmaking. Tarr's images and sounds work subliminally on the spectator's emotions over large expanses of time even when the spectator is dimly aware of what's going on. Through Gábor Medvigy's hypnotic camerawork the perceiver is not a passive subject but an active one, contributing substantially to the final effect of the work. There are many processes involved with this, physiological, preconscious, conscious, and unconscious. Some perceptions are automatic responses beyond control; for example, film's medium depends upon these automatic abilities of senses and human brain. A lot of the object recognition is preconscious, and these kind of mental processes differ from physiological activities because they are available to the conscious mind. Much of reaction to film's stylistic devices might be

preconscious because one learns different cinematic techniques, for example, from classical films.

Photography depends on freezing the movement of that moment, so photography falsifies the world by freezing it, and by falsifying it; it gives the world expressive strength. Film works exactly the opposite way: it starts with a movement, and it unfreezes the world; even when the world is static, one can, by moving the camera, give movement to the static world. Film is not a photographic art so much as it is a performance art because still-photo thinking is a reverse of moving image thinking. So one essential filmic operation can be considered sequential linking of spatial images. The motion picture in itself is an event because it looks different every moment, whereas there is no such temporal progress in painting or in sculpture. Motion being one of its outstanding properties, the film is required by aesthetic law to use and interpret motion. Consequently, for a spectator many kinds of shifts in viewpoints (through varied camerawork) may be completely invisible, because he or she looks through the images, not at them, and therefore has little or no idea where one shot ends and another one begins. Performances are disciplined, and essentially marionettes in Tarr's hands.

Though never explained in the film, the title of the film refers to the 17th-century German organist-composer Andreas Werckmeister, esteemed for his influential tones on harmony and musical construction. It is a fitting parallel for a filmmaker whose films work on the emotions in as unfathomable a way as the compositions of great symphonies. In an age when an average film contains approximately 1000 shots per 100 minutes, Tarr's two-and-a-half-hour *Werckmeister Harmonies* has an improbable 39 shots in 145 minutes. Viewing its intense contemplation of an atavistic world of strange catastrophe and grim survival is both an unnerving and fascinating experience.[276]

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The material of expression most characteristic of the cinema is the multiple, mechanically moving image and its placement in sequences. One of the specific codes of cinema is camera movement. This code involves the totality of the film field of vision as it relates to the stasis of mobility that can occur within the cinematic shot. Obviously, at any moment the camera either may rest static or may follow some path of movement (vertical, horizontal, circular), or some combination of those paths. Every shot is constantly making its choices explicit by having eliminated all the figures of potential movement or stasis that are not present. This code is specific to film because it requires the utilization of materials of cinematic technology. Unusually clear examples of the utilization of camera movement as codes specific to the cinema occur in the films of Hungarian director Miklós Jancsó.[277]

Stylistically speaking one can see Tarr's style, for example, in *Satantango* (1994), as a continuation of the Miklós Jancsó -style in some earlier Jancsó-films (especially *Agnus Dei* & *Red Psalm*, 1969-71). These films flamboyantly flaunted the mastery of camera movement. Jancsó's near-schematic technique relied heavily on camera set-ups and long, wandering, and elaborates compositional scenes that compellingly use the integration of figures with the landscape. From the Soviet montage tradition came the idea of a group protagonist, which Jancsó turned into dedramatising ends.

Jancsó's dramaturgy emphasised large-scale forces and momentarily fluctuations. The scenes were played out in very long takes with constantly moving figures and ceaselessly panning and tracking cameras. In *Még kér a nép* (Red Psalm, 1971) the groups have become pure emblems of social forces, playing out symbolic rituals in abstract space. Any attempt to make sense of Tarr's films in strict narrative terms is as doomed as an analysis of Jancso's abstract political

parables. Tarr's films lack the choreographic grace and visual allure of his fellow countryman's classic works of the 1960's and 1970's, and their black and white –photography bring in elements more related to Expressionism in art. Uniting both directors is a distrust of power structures and a resolutely Hungarian interest in mass resistance.

The movement of Tarr's camera is always suspenseful. At the opening of *Damnation* we see in long shot huge moving buckets suspended on wires like cable cars, hear them shunting in the distance back and forth from some unseen quarry. The camera slowly retreats until we're behind an apartment window that becomes a frame within a frame. What had seemed an exterior shot quickly becomes an interior one; what had seemed omniscience is in fact the point of view of a man staring out of the window at the cables. Tarr's camera moves back behind the man's head without showing his face until the head itself blocks the image of the moving buckets.

Without a cut we are then made to realise that what we've been looking at is what he sees, but now his very presence obliterates the image that was once ours and is now his, as it had been all along. As if to prove he can move in the other direction, Tarr later films an interior two-way conversation in long shot framed by billowing curtains. The camera tracks sideways along the curtains until the speakers are out of frame and then pulls back through the open window before lowering itself to ground level where we read a 'Police' sign on the front of the building. Only as we're leaving do we find out where we've been. But this is not merely a demonstration of auteur virtuosity: reversal is a crucial element in the repetitive circular structure on which the film is based.

In all, this tactic allows Tarr to keep the shot alive, to quicken our visual interest while also linking or developing his characteristic com-

positions. Moreover, since we cannot see what is off-screen, camera movement offers a chance to arouse and foil expectations. Springing such surprises is a fairly traditional use of camera movement. More distinctive is the way in which Tarr's camera movements participate in a larger dynamic of opening and filling space at a tempo which allows us to form anticipations about how the blocking will develop. Thanks to the long take and silent intervals, Tarr prolongs the very process of staging, leaving us plenty of time to recognise that we are forming expectations about where the character or camera will go next.

Tarr's extremely slow camera movements often move away from or past the characters creating up a mood and sensation related to formal suspense. This makes it possible for Tarr the use of different perspectives during the same shot. For example, in *Satantango* he changes perspectives from people to the landscape, and so on. The spectator of a Béla Tarr -film is, in a way, forced to see these changes, share the immobility of happenings, waiting and the expectations of the characters, while the shot proceeds. David Thomas Lynch thinks that this the way that, for example, *Satantango* combines distance with empathy, aided by a complicated chronological rearrangement of the story and careful attention to the particularities of the characters.[278]

The movement of the narrative point of view dislocates the position of the spectator's eye in turn. The spectator no sooner finds a footing in the events of the fiction than the editing breaks the terms of scopic identification and opens up yet another space-time and yet another locus in which the spectator must insert herself. The indication of narrating and spectating subjectivities never quite achieves a coherent unity in the present and presence of the film image, but follows a movement without origin, present, or presence, a movement that perpetually postpones the closure of eye to an unlocatable

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future-past. For Tarkovsky, rhythm in the images is not the metrical sequence of pieces, but the *time-thrust* within the frames. Montage brings together time, imprinted in the segments of film.

Pointing to Leonardo Da Vinci's portrait of a woman (shown in *The Mirror*), Tarkovsky claims that the famous painting is powerful precisely because in it one cannot find anything that one might particularly prefer, one cannot single out any detail from the whole... and so there opens up before us the possibility of interaction with infinity.[279] He adheres to the same principle while showing a human face on the screen: rejecting facial expression as a way of conveying ideas, Tarkovsky attempts to reach into our innermost feelings, to remind us of some obscure memories and experiences of our own, overwhelming us, stirring our souls like a revelation that is impossible to interpret in any particular way.[280] According to Vlada Petric this attitude relates to the concept of *la photogénie* defined by Louis Delluc and Jean Epstein in the 1920s as the most unique feature of the film medium.[281]

As Delluc puts it:
"All shots and shadows move, are decomposed, or are reconstructed according to the necessities of a powerful orchestration. It is the most perfect example of the equilibrium of photographic elements."[282] William C. Wees thinks that the concept of *photogénie* did not get to the heart of the matter, because it directed attention to the image, but not to the properties or elements of the image itself.[283] So it is a question of orchestrating all the elements of the film: narrative, actors, words, pictures music, and each aesthetic element intimately influence the meaning of every other.

Tarr's camera movements are related to the general scene, subordinating to it any calligraphic side effect. As compared with cuts, the slowly moving camera's gradual angle changes allow a more solid,

sustained sense of scene. Long takes stay with a stretch of world. Tarr's reflective moments flatten those sharp peaked rhythms of action, decision, or suspense that might disrupt or supersede our sense of time. Working together these features of form elongate our sense of duration. The takes seem even longer than they are, approaching a vision of sequence shots. In one respect Tarr's cutting nudges closer to montage editing than Hollywood norms. In Tarr's oeuvre the hard-edged landscapes are important, and people being distant make small pictorial movements; encourage cuts on strong, almost static universe.

Tarr's physical landscape is marked by the long shots, where the different elements function as parts of the natural setting, but they too are part of a sub-textual language that calls up both private and universal associations from one film to the next. Tarr orchestrates the various elements in his own way: the action consists of what the characters and the camera do in relation to one another, so, there is the possibility of moveable and shifting relationships between the elements. Tarr's approach deals with the character's hidden agendas and duplicitous motives, adding to the overall paranoid and conspiratorial atmosphere. Tarr's strategy creates various kinds of movements within stasis, and freedom within confinement.[284]

Tarr's commitment to long takes, distant views and *temps morts* places an enormous weight upon the unfolding shot. Camera movement is the most obvious accessory here. In Tarr's films the camera movements seem locally motivated. This tactic allows Tarr to keep his shots alive, and shift our visual interest. This is the way that Tarr's camera movements participate in a larger cinematic *dynamic,* filling the spaces in a slow tempo; they offer a chance to arouse and foil expectations. The strategy with the long take is to take it to a moment of heightened expressivity. Its source is in a modernist aesthetic, the

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absence of drama can command our attention and emotional invest-
ment along different lines. The strategy of building a long take to a
moment of *heightened* expressivity, in the absence of drama, which can
command our attention and emotional investment along mainstream
lines, has its source mainly in modernist aesthetics.

The movement of the body itself further complicates temporality
in landscape experience, a phenomenon we call kinesthesis. When
moving across landscape space there is not only a dynamic flow of per-
ceptions derived from external sources, but there is also the muscular
and nervous movement of the body itself through space and time.[285]
This is something that is related to cinematic thinking. There is a
complicated interrelationship between, for example, the perception
of the movement of surroundings and the movement of the body,
which is displayed in what is known as 'parallactic movement'. Tarr
strengthens his universes by a feeling for a man-in-environment -
theme. This is possible by an unhurried choreography of camera and
characters, and by heavy emphases on people's silent or cryptic think-
ing. It seems that Tarr rejects montage (or uses montage-within-shot)
as too manipulative a technique for capturing the reality or essence of
a given moment in a given place.

Walter Benjamin has recognized that the meaning derived from land-
scape and architectural space is received 'by a collectivity in a state
of distraction', slowly appreciating its symbolic environment through
'habitual appropriation', or through everyday use and activity.[286] Béla
Tarr creates new relationships between the camera and the scene. It
is a question of montage within the camera and montage within the
shot, which seems to become a more 'normal' way of expressing than
the usual montage thinking.

Tarr's thematic and stylistic concerns have their expressive motifs in showing the subjective logic, a kind of movement of thoughts. The subtlety of the lighting effects is not simply a source of legitimate aesthetic pleasure in its own right, but part of the thematic and psychological structure of the film. The stylistics of Béla Tarr is a world apart not only from Hollywood but also from the fractured forms and shock techniques of western modernism. Tarr has developed a new cinematic art from the long take, multi-planar composition and the complex orchestration of characters, sounds and objects in and out of the frame. It is a meeting place for themes and styles, a kind cinema of adversity: a fascination with the interface of nature and culture that co-exists with a sense of the terror lurking in the material world. This has been called "magical realism", but it is not supernatural by nature. Instead this kind of cinema exists in the face of adversity, both human and natural. In Tarr the very presence of different elements percolates the texture of the image, with its intimations of infernal wind, rain and cold and the flood of biblical proportions that threatens at the end of *Damnation*.

Tarr's films are fine examples of artistic originality, because Tarr can create direct perceptual and imaginative engagement with the films themselves, and can give rise to a distinctive aesthetic mode surrounding the films. Tarr is a European filmmaker who can mould sensuous or imaginatively intended material into original symbolic form. Tarr brings the rational, sensible and historical aspects of experience into an internal relation. All the different elements of his films are, in a way, inseparable, coherent, and mentally and physically embodied. Tarr's cinematic syntax makes possible increasingly complex combination of shots, which can generate an even *greater* variety of messages and meanings. Such combinations touch on the mystique of cinema: a peculiar and original cinematic reality. Tarr's film phrases, constructed through fragmentation, also tamper with

reality by showing the total geography of a setting and spatial rela-
tionships between the shots. Tarr shows that the intensity of viewer
involvement depends on the energies, which radiate from the screen
according to the filmmaker's arrangement of dramatic sequences.

## VISUAL MONTAGE, AND OTHER IDEAS

In visual perception the transitions of elements inside narrative may
even be more abrupt than habits of language might suggest. Phrases
like "cutting between shots" risk suggesting that spectators experi-
ence first shot, then a cut, and then another shot in that order, as if
experienced form reduplicated the material order of the strip of film.
But the cut was never on display. The spectator never sees a cut *tel
quel*, and moreover, the cut on the strip of film, is identical with .the
frame-line between any two frames of the continuing shot. The new
shot is offered at the same speed as the next frame in the old shot.
The spectator sees the suddenly new form, from which he deduces,
that the viewpoint or scene has changed. The second shot intervenes
directly into the first. The spectator does not experience a cut, but
the second shot, and the differences between the shots. What he
or she *sees* is the new graphic form of scenic information. Any new
viewpoint is a deduced difference, a difference of signified content,
and not of signifying form.

The invisibility of the cut, and the deduced nature of the change of
viewpoint explain how cuts, although so "total", can yet be subliminal.
Given successive shots of, say, a car speeding by a castle, the spectator
sees, primarily "car-and-castle". Acting as a unity, this scene "over-
rides" the fact of different shots. The different views are a secondary
difference, and correspond to seeing the same scene "afresh", look-
ing at things from another angle, or in a different light, or slightly
adjusting one's mental set. Normally, each shot would show some-

thing slightly different. One shot might emphasize the driver's experience, another the car's relationship to the castle, and so on. But neither of these emphasizes "ruptures" or contradicts the other. On the contrary: each complements the other. It develops the same general situation in an on-going way. The shot is felt, not to interrupt its predecessor but to continue it, by proceeding to another point. The cut is a continuation and so easily a connection, the condition of an association in which the relationship overrides the discontinuity. In cinematic narration strongly felt continuities are derivable, not only from spatial deletions, but from swiftness in describing a situation and its development, or the trajectories of a story, or transitions from one topic to another. Very often therefore abruptness is also smoothness.

If a connection is not immediately apparent, then often the spectator will nonetheless be patient, at least if the discourse so far seems to be coherent. For he understands that, in discourse as in discovering the world, information comes to us "in bits and bytes", that is successively, and not simultaneously. Cinematic narration is indeed linear in the sense that exposition is as "time-bound" as narration or description is.[287] Cinematic narration is not linear in the absolute, atomistic, sense, which would suggest that all of the information is broken down into separate "bits" which can only follow one another, as on a digital computer. Indeed, the shot, like any other picture, is a largely a simultaneous display, even when movement, change, pictorial composition and priority of interest render the reading of the shot sequential or successive. Similarly, words are both successive and simultaneous. "The cat sat on the mat" is a linear sequence, but "cat" is already an assemblage of data in no particular order. For example, it specifies, feline, furry, four paws, mammal, purring, scratching, and so on through all ones general knowledge of the cat in its various usual contexts and connections.

All exposition involves transitions and deletions, and the cut from one shot or scene to another is as swiftly sublime as any other arrangement in discourse. Hence the insistence that a shot is less an illusion of real space than an idea of a visual-physical space. Just, as a discourse is a flow of ideas, so continuity in narration is a flow of visual ideas, abstracted space-time chunks and their contents, and the association of those contents. Whence the useful paradox that the abrupt being fast, can also be smooth. Everything depends upon how easy the association to the next idea is in context of the ideas so far. Similarly with film images, which may seem all the smoother for taking some disjunction in their stride, matching the disparate, and linking the alien. This is not to say that the mere fact of juxtaposition renders smooth. In cinematic narration as in verbal language, the thread of continuity may be initially abrupt, or mystifying. A great fascination lies in the difficulty of specifying where continuities end and in-coherences begin.

This emphasis on the *connectionist* role of coherent meaning risks implying that only the spectator's trust in some ulterior coherent meaning linking the shots, saves him from experiencing fast cuts as disorientating, violent, even painful "bombardment of images", although avant-garde films might offer very scantily connected images at machine-gun speed. This very speed distances the spectator from each image. At this rate it might seem that it is almost impossible to jolt the spectator, and that, far from cutting being condemned to be violent, it is condemned to be smooth but this would dispose of everybody's theories of from Eisenstein's theories of dynamic collision to the Hollywood's concern to maintain smoothness. Continuity annoyances are rarely a matter of' "pure form", nor even of interactions between it and human physiology. They are invariably semantic, involving the frustration of expectations and information processing.

STRUCTURING THE MOSAIC

Visual perception is related to cognitive, psychologically based processes. Stored knowledge and different assumptions affect visual perception. And perception consists of forming visual concepts, and mental representations, and making an image is like producing representational concepts on the basis of visual concepts. These concepts and representations are structures consisting of essential and special features, which can be found significantly modelling the following example.

"The significance of *Sunless* lies precisely in its openness, both in the formal sense that the film's subject-matter becomes indistinguishable from its style, and in the dialogical sense that those who see the film may gain a new kind of access both to those issues it raises and those it elides."[288]

In Chris Marker's film *Sunless* (Sans soleil, 1982) the structure is mosaic.[289] It is not only a question of images and what might link them, but also a question of spaces between the images, relations between images in space and time.[290] The whole of a mosaic is almost invariably embedded in a larger architectural and geographical whole. Free-floating images and sounds connect different cultural manifestations, rituals and practices conjuring various time levels. In one respect, the history, which Marker observes, is a collective history of events, sites and places, but pervading this is a history made up of personal memories. *Sunless* embraces Marker's concerns for the riddled interface between real and imaginary, ideology and representation, history and memory. It is a hybrid, a composition of nouveau roman and ethnographic document.[291]

Every documentary has its own specific way of narrating things, a voice of its own. Inside documentary Bill Nichols has spoken of *po-*

*etic mode*, which shares a common terrain with the modernist avant-garde.[292] The poetic mode sacrifices the conventions of continuity editing and the sense of a very specific location in time and place that follows from it to explore associations and patterns that involve temporal rhythms and spatial juxtapositions. Social actors seldom take on the full-blooded form of characters with psychological complexity and a fixed view of the world. More typically, people function on a par with other objects as raw material that filmmakers select and arrange into associations and patterns of their choosing.[293] The poetic mode is particularly adept at opening up the possibility of alternative forms of knowledge to the straightforward transfer of information, the prosecution of a particular argument or point of view, or the presentation of reasoned propositions about problems in need of solution. The poetic mode stresses mood, tone, and affect much more than displays of knowledge or acts of persuasion.[294] The poetic mode began together with modernism as a way of representing reality in terms of a series of fragments, subjective impressions, incoherent acts, and loose associations. Breaking up time and space into multiple perspectives, denying coherence of personalities, and refusing to provide solutions to insurmountable problems had the sense of honesty about it even as it created puzzling or ambiguous works of art.[295]

For Marker it is impossible to reconcile the realist status of the images with their fluctuating status in time. Words and images are carried with meaning, and the narration goes forwards and backwards, in a style that reproduces associative thought processes. The film's method seems to be the search for the various connections between totally different times and places, and at the same time to allow juxtapositions of images to resonate suggestively without having a clear and prefixed meaning. Marker's juxtapositions seek to suggest connections, and to put forward different questions.

In *Sunless* an unknown woman reads and comments on letters she has received from a friend - a freelance cameraman who travels around the world and is particularly attached to those two 'extreme poles of survival', Japan and Africa. The cameraman questions himself on the meaning of this representation of the world of which he is perpetually the instrument, and the role of these memories, which he helps to form. One of his Japanese colleagues responds in his own way by attacking the images stored in memory, taking them apart on the synthesizer. A cinema producer takes advantage of this situation and makes a film out of it, but rather than casting these people as themselves and showing their relationships, both real and supposed, prefers to serve up parts of the material in the form of a musical composition. From these memories, placed side by side, is born a fictive memory... (Chris Marker)

This is how Chris Marker has described the basic plot of *Sunless*, a deceptively simple description of the film's extraordinary journey through time, place and memory. Ostensibly an essay and a travelogue in which an unnamed cameraman returns to Japan, the film is an attempt to come to terms with the *continuities* and *changes* that have occurred within this country in the aftermath of the Second World War. As we follow the cameraman's travels across the country, we become aware that, for the cameraman, the places we visit are permeated by historical and personal memory.[296]

Throughout his narrative Marker points out that *Sunless* as a film is a constructed, construed, and evaluated experience, in broadly the same way as any other kind of document. Normative spectators might assume this all to be discourse, based upon and referring to something. What is often called realism can't be the *reality* to which it refers. It deals in aspects of semi-abstractions from that reality. Far from one mode of realism fitting all aspects, realism has innumerable

modes, each adapted to some special set of elements. The film's concerns and the cameraman's voyages extend far beyond the borders of Japan, as Marker seeks to understand how the situation of modern Japan relates to broad global changes in the contemporary world.[297] Hence, it is as a compass point within a field of global relations that Marker explores Japanese culture. Exploiting film's ability to blend different times and places together into a single strand of time, he interweaves film footage from Japan alongside that of Africa, Iceland, France and the United States into an examination of the different forms of economic, ecological and cultural organization that coexist within the modern world. The film constitutes a critical examination of features of the contemporary cultural and political landscape.

Through the use of his moving camera, Marker shows that movement's vectors and trajectories commonly override the static features of a composition. By this way, Marker creates new, and more choreographic impression of the scenes depicted in *Sunless*. Movement quickly attracts the spectator, and Marker demonstrates that myriad movements within a crowd on the streets of Tokyo will be affecting through their intricacy, and heterogeneity of configurations and combinations. Editing means estimating the broad trajectories of interest within a shot, and across cuts. Marker can magnetise attention, and subordinate graphic features to the pictorial ones, so that different compositions are to some extent re-organised around central themes. *Sunless* is also a film about cinema as a conduit for memory and history, and it critically explores the relationship between different forms of representation.

Marker is constantly reflecting upon the complexities of the question of representation and preservation of history in its various manifestations. He is fascinated by the way in which technological media such as audiotape, videotape, photography and film have the ability to

trap and trigger impressions and memories, yet, in *recording* moments from the past, detach those events from their context or source of origination. This theme acquires added dimensions in respect of the impact of new technologies of image making. At one point, the commentary states:

"I wonder how people remember things, who don't film, don't photograph, don't tape. How has mankind managed to remember? I know, it wrote the Bible. The new Bible will be an eternal magnetic tape of a time that will have to reread itself constantly just to know it existed."

*Sunless* comprises a series of simultaneous verbal and visual reflections. It is a new form of history for a visual age: a history which does not consist of assembling data into some kind of logical argument, but in ruminating over the possibilities of memory and history, personal experience and public events, and the relationships among them.[298] Through the form of *Sunless*, Marker induces a critical dialogue between the film and its viewers, forcing the viewer to become active in interpreting the significance of what is being shown, and to ponder on the film's juxtapositions, rather than passively relying' upon the commentary to communicate their significance. And it is the fragment that forms the kernel of this endeavour. This concern with instigating a reflective consciousness, rather than simply conveying a message, is also vividly apparent in the general form of the observations of the commentary. The fragments of the cameraman's letters are mostly anecdotal and epigrammatical - indeed, even aphoristic on occasion stimulating reflection, rather than closing down meaning.[299]

This issue of the fragility of memory saturates the images and commentary throughout the film. The landscape of *Sunless* is an *image*

*world* where cultural memory is scarred by an overriding sense of the impermanence of things. The pathway taken in *Sunless* is not straightforward, but a journey through the labyrinth of time, place and memory. The history, which Marker relays is a collective history of events, sites and places, but pervading this, is a history made up of personal memories. In the course of the film, the camera-man reflects on his recollections of the political struggles of the past and on the different aims and strategies of representation that have informed his filmmaking, frequently invoking and re-examining, the sounds, themes and images of his previous films and those films, such as Hitchcock's *Vertigo* (1958), that have left their mark on his work. *Sunless* is constructed from letters, impressions, quotations, images and film footage from around the globe, *Sunless* mixes together diverse materials: Marker's own footage, both old and new, but also clips from other films, interweaving these fragments into a complex and fragile whole.

*Sunless* uses a narrative form that is based on sending letters from all over the world. This is a convention Marker had utilized in his films of the 1950s.[300] Yet, the relatively straightforward use of this form in his previous works is, in *Sunless*, overlaid with more complex dimensions. Whilst in *Lettre de Sibérie* (Letter from Siberia, 1957) Marker had constructed the commentary in the first person, opening the film with the words "I write to you", *Sunless* opens in the third person, with a female enunciator stating "He wrote me". The film consists of a spoken monologue by this unnamed enunciator, who reads and occasionally comments upon fragments of letters sent to her by a similarly unnamed correspondent whom we know from the beginning to be a freelance cameraman, but who remains unnamed until the end. The letters of the cameraman range from specific impressions and reflections upon images, places and events he encounters on his

travels, to observations about his planned or aborted film projects, or his recollections of the past and speculations about the future.

An essential feature of the originality and challenging nature of *Sunless* is the form in which it unfolds its themes. Themes do not emerge sequentially but cyclically, discreetly arising out of subtle correspondences and repetitions that the edits establish in the course of the film. Marker consciously and consistently undermines any clear hierarchical structure of the film's elements, replacing this with a more democratic form of "shifting dominants", in which each moment of the film acquires a relative equality. This pertains even to the presentation of key imagery within the film. Although, as the film progresses, certain recurring images become of particular importance in the elaboration of the film's themes - for example, the imagery of destruction and death (images of fire, natural disasters and the disasters of war), and most especially the imagery of the sea (a metaphor which carries many connotations in the film: memory, flux, death and infinitude) - there is no attempt immediately to impose the larger significance of this imagery within the film upon the viewer's consciousness.

The film's continuity consits of fragments of images, binding together footage from his travels across the globe and footage from different moments in time in a way that stresses the mutability of their significance. The images are stitched together into a series of sequences of varying length and tempo that establish intricate rhythms, visual harmonies and counterpoints within the film, and create gradual and sometimes abrupt changes in mood, subject-matter and location. Marker's editing does not follow a uniform pattern. Often what seem to be random shots of the mundane are carefully contrived to achieve a particular aesthetic effect. Characteristically, Marker utilises the whole expanse of the screen, editing the flow of images with an eye to formal symmetry and contrast. In the spectacular scenes of the neighbourhood celebrations in Tokyo, for instance, Marker tracks the

dancing and parading figures across the entire length of the screen, having figures that exit from one side of the screen be replaced by others entering from the other side, and vice versa. Alternatively, in a passage that follows the journey of a train in Tokyo, he edits together groups of shots from different perspectives, which, like a Cubist painting, present the object of attention simultaneously from an array of alternative points of view. Attention is usually in the object which we are looking at, but it is not necessary pointed out into the experience.

Marker demonstrates his mastery of the range of technical possibilities of montage. Marker's editing is dramatic and follows certain narrative line. It's a showpiece of montage. Normally visible editing implies no appeal to the spectator to become conscious of the cut as a formal event, or of the shot as a formal entity. They are not intended to function like alienation effects. Montage editing dynamites the illusion. Although in Marker montage deals in successive, separate shots, and not one continuing shot, it involves exactly the same visual mechanisms and elements. But whereas a single, continuing shot is an image with sub-configurations, the sequences are configurations some of whose sub-configurations are images. In a sense, the spectator's eye has less freedom, since the succession and duration of each image is controlled, and presumably eye movements cease or diminish, at least if the editing is fast enough. In another sense, the mind has more freedom, since the on-going configuration never presents itself as a fixed whole. It is a deduction, or reconstruction from the multiplicity of images held together only in the memory. The form disappears as fast as it appears, and the structure features space in time, but like the single image, it combines looseness in some respects with integration in others.

The camera is often a visible presence of the inspecting gaze that one might imagine. The camera does not need to be turned on or even in place for the inspecting gaze to exist; merely its potential to exist might have this effect.[301] Marker emphasizes the connectionist role of a filmmaker concerned with coherent meanings. The spectator's mind seems to concentrate more on relationships than differences. Marker's film can achieve an especially intense excitement by transcending images and sounds through a special cutting. A new visual, and physical osmosis occurs through his ideas. Film's space-time chunks are liquidised, they flow into one another, and similarly they are somehow abstracted. As shots replace one another in the same screen space, their graphic forms can collide, and visual features in one seem to strike against visual features in another. This kind of succession as collision depends, not so much on persistence of vision whereby the human retina retains an image, but on the mechanisms of visual perception. They are hardworking physical structures, and they generate physiological sensations. In the kinetic, and physical quality of graphic experience, there may well be physiological feedback from another source, the kinetics of sensory-motor experience.

The inter-connectionist style of Marker is present throughout the narrative.In another passage, footage of an African heron prompts, by way of a free association on the part of the commentary, a cut to an emu in the Ile-de-France. The camera then focuses in on the eye of the emu, then cuts first to the gaze of an African woman and then to the eye of the recurring motif of the votive Japanese figurine of a cat. These images of the eye link up through the course of the film with a host of other images of the eye, and become linked in the commentaries to themes of power, surveillance, voyeurism, representation and the magical function of the eye (both the actual eye and the "camera eye") in non-Western cultures. The film's fascination with the eye is openly thematized by the voice-over, recurring in every-

thing from the credit sequence of *Vertigo* to the documentation of a Japanese ritual.[302]

Marker has his own concept of montage, but one can sense the Soviet tradition behind it. One can compare montage to a kind of syllogism with different details producing a new context on the level of a single mind. This was a mentalist view of the workings of the mind. Psychologically it is a process where the mind tries to make sense of any new stimuli by thinking of links, explanations, or denominators between them thus reducing diverse or contradictory cues to one consistent cue. Maybe this also helped the Soviet directors to create simple generalisations from physical, and materialistic elements. The dialectic of montage is not only within a shot, or between different shots, between any details, and their overall context. Through montage one can think that cutting is in a way inseparable from selecting the shots, and arranging the images, and often it is also a question of staging the elements inside and between the shots. Marker's employment of a montage technique, whilst bearing its own very distinctive traits, astutely draws on the innovations of Soviet monteurs such as Vertov, Kulesov, Eisenstein and Medvedkin. Eisenstein insisted that montage could exist, not only in the succession of shots but between the different textures of one image. He analysed montage between music and image, so, it was not difficult to expand thinking of montage between music and dialogue, or between one line of dialogue and the next one. This makes it understandable how one can think that montage is any sort of intellectual collision out of which new meanings might emerge. The dialectical use of montage editing in early Soviet cinema to carry and consolidate a cinematographic message across a progression of images is utilised by Marker in a number of sequences in suggestive ways

For Marker a film rarely aims at self-sufficiency, but rather at communication, which gives priority to ergonomic efficiency, as distinct from literalism. Almost all discourse (film included) is geared to its target audience's knowledge, assumptions, norms, preferences, judgements, hypotheses, deductions, in short, ideology or culture. This creates a paradox, because the film omits almost everything necessary to its own understanding. It operates within a tissue of meaning, to which it relates as a social, and historical fact. Its meaning is an event, and this off-text substance enables a filmmaker to offer everything as a continuity, and a succession of cues, clues, and stimuli. To say that editing depends on knowledge is to say that it depends on implication. To a great extent, the art of editing is the art of anticipating the spectator's expectations and questions, and at a pace to which one can readily adapt.

Marker is able, through his editing, to create a dialogue between them, to examine their different modes of signification and how they connect to each other. Marker uses a montage technique to create echoes and counterpoints between images, which alternately reinforce, contradict or intensify each other. Any one sequence or series of images may establish an array of relationships as the film progresses. Whilst these examples demonstrate Marker's use of editing to control tightly the unfolding of a sequence, his editing often veers in an opposite direction. Fragments of footage are often purposefully displaced, Marker sharply inter-cutting images in a way that defers their meaning.

Marker's images are multi-factorial, structured combinations of many features. There are moments when Marker's camera lingers on something for the sheer pleasure that its appearance provides. An image can be defined as one thing which looks just enough like another to suggest it, or to remind the spectator of it in context. When look-

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ing at pictorial form in *Sunless*, the spectator sees both the images and the scenes, which are depicted. The result is a hybrid, and selective compromise. The graphic features have a definite structure, which already affects the spectator's perceptual system, and constitutes an abstract composition with rudimentary elements of illusion. Through this the pictorial reading of sequences becomes a richer array of associations. To that extent, graphic and pictorial elements constitute different visual entities, albeit rooted in the same pictorial features, and neither quite separated from the other. In the carnival scenes in Tokyo, he scrutinises the intense concentration upon the face of one of the dancers. Throughout the film, there is a constant interplay of different levels of representation, and this again motivates Marker's editing.

Often pictorial signifiers interest the spectator for their reminiscence of, and their information about a signified. This is how cinematic images with their wealth of information are so quickly subliminised. In Marker's film, the graphic structure is primary in the sense of being the real, concrete, and present form, the material and physiological object of perception. It's this form, which works upon the perceptual mechanisms, and, in some sense, controls, or profoundly influences the pictured form. The form and composition of the images concentrate the spectator's attention in a particular way. Remarkable is that features, which real-life vision scarcely relates, are sharply brought together, and into juxtapositions, which do not exist in real-life vision. Gradually, in the course of the film, one becomes aware of how these various sounds, like the film's images, are filtered through a synthesizer, which distorts their original sound. Like the zone, which translates memories into images, so the synthesizer music transforms the array of different musical forms into pure sound, flattening the distinctions between them. Thus flat images bring foreground and background features sharply together. Pictorial forms direct the spec-

tator's attention in certain ways, creating centres and movements of attention, which can criss-cross, and compete.

In Marker's film the structure of the image re-contexts the appearance of the depicted. The role of music within the soundtrack is interwoven into the thematic of the film. The film derives its title from a six-part melancholic song-cycle by Mussorgsky, and Marker's technique uses counterpoint and repetition to announce themes in a way that parallels Mussorgsky's music. Although only a brief fragment of Mussorgsky's cycle of songs (a passage from "Sur le fleuve", the last of the songs in the cycle, which concerns itself with death) is heard in the course of the film, Marker uses the song cycle as a vehicle to establish his leitmotif of the fragility of memory. Beyond such explicit references, Marker creates a series of discreet dialogues between the film and the song cycle, thereby establishing a hyper-textual relationship between the two. On a formal level, both works display an amazing richness in compositional conventions and expressive possibilities, but use extremely economic means to achieve these aims. However, *Sunless* shares more than simply formal compositional affinities with Mussorgsky's song cycle. They share an extensive common range of imagery and a common mood of melancholy.

With Marker cuts are major sites of time dimensions. The motive is to quicken, and tighten up the concrete time. Time, unlike space, has no dimensions, and therefore no perspective. Thus it is more dependent on the logic of implication. In this kind of narrative, concrete time intensifies the analogy with real-time successivity. However, cuts often express simultaneous happenings, and it's quite hard to say whether two different shots are concurrent or consecutive. Marker's editing in the Tokyo-cityscape sequence, in its creation of abrupt and constantly shifting viewpoints from street level to rooftop, conveys a sense of simultaneity, the camerawork re-creating an effect of fleeting

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glances scanning the city for its characteristic signs. Such ambiguity is optional, and can be excluded if wished. It facilitates small, constant, and informal changes between consecutive and concurrent actions within a given sequence. In Marker these signs shuttle forth in rapid succession, some immediately decipherable, some less so, with little in the way of guidance for the viewer. Sometimes such use of montage slightly reverses time. In one shot a sudden event, and in another a character is distracted from some other activity by it. In a common practice, this kind of distraction of attention is rendered by showing some other activity, and then suddenly being distracted. Strictly speaking the second shot begins earlier than the first shot, and normally a spectator doesn't experience time winding back. This is how Marker captures both the sense of exhilaration and seductive allure that the encounter with the city provides, and the strange sense of fragmentation, illegibility and disarticulation.

Marker treats Tokyo's visual elements as exciting and interesting. They are in a constant state of oscillation. City's subterranean dimensions are also very important for Marker. Marker creates a kind of sonic evocation of the city. Marker's images explore the surface of the city through urban landscapes, and through city's various transformations. Tokyo is noisy, but also silent, and very intimate terrain with many-sided cinematic properties echoing visual, and often dreamy spaces. The obsession towards media images cerates a kind of hallucinatory space filled with media images, and cognitive allusions.

In *Sunless* Tokyo is represented as a delirious and fraught reality of different appearances, a dystopian 20th century equivalent of the floating world of the Edo period. This is a metaphor which finds its concrete embodiment in the shots of the many advertising placards of beautiful young Japanese models suspended in mid-air over the city, hanging from invisible wires and cables above the streets and railway lines

which run through the city. This intoxicating realm of advertising and the mass media invades public space and private thought alike.[303] Here the omnipresent video and television screens that adorn the department store walls, the computer-generated images, and the huge, Western-style advertising billboards and murals taken from the comic strip books hail to and prevail upon the passer-by, dwarfing them with their monumental scale. There is more than a suggestion in such imagery of the way in which the modern city acquires the character of a space of surveillance. The huge images adorning the city's billboards, featuring figures looking out of the posters, cast their gaze across the city, voyeurising the voyeurs. Equally, the erotically-charged images of young women and comic-strip heroines, on a scale inflated out of all proportion, seem starkly to counterpoint the impersonality, constraint and conformity that reign over the street-life below, as though they were the projections of repressed desires. In one of the most telling images, the reflections of a mass of figures in the subway are absorbed within the giant billboard image of a fashion model.

As the narrator continues: "More and more, my dreams find their settings in the department stores of Tokyo, the subterranean tunnels that extend them and run parallel to the city. A face appears, disappears, a trace is found, is lost, all the folklore of dreams is so much in its place that the next day, when I'm awake, I realise that I continue to seek in the basement labyrinth the presence concealed the night before. I begin to wonder if those dreams are really mine, or if they are part of a totality, of a gigantic collective dream of which the entire city may be the projection. It might suffice to pick up any one of the telephones that are lying around to hear a familiar voice, or the beating of a heart - Sei Shōnagon's for example. All the galleries lead to stations, the same companies own the stores and the railroads that bear their name, Keio, Odakyu, all those names of ports. The train inhabited by sleeping people puts together all the fragments of

dreams, makes a single film of them, the ultimate film. The tickets from the automatic dispenser grant admission to the show."

The images accompanying this commentary show people buying tickets for the subway, boarding train compartments, and, once seated, drifting into sleep, a segment which recalls and brings full circle the journey into the city in the film's opening passages.[304] As this sequence progresses, images of the passengers' sleeping faces are allusively inter-cut with images of the late-night television sequences replayed from the night before, suggesting the way in which these images of desire and violence become imprinted onto their subconscious thoughts and dreams. The subway sequence is an evocative treatment of sleeping, dreaming, and waking as they relate to the experience of the spectator.[305] The passage offers us not only an example of the film's intricate use of montage to slip nimbly between the realms of desire and the everyday, dream and wakefulness, subjective and collective memory, but also an image of a world whose experience of the real is, in actuality, constantly and imperceptibly shifting between these categories. Marker's quest for the true image is an ongoing task, since such images are not often found, and when they are they often come by surprise. Marker's hand-held camera seems to respond directly to the diegetic world.[306]

The commonest forms of in-shot cheating are quick, slow, and reverse motions, and their free form relative pixilation, which deletes, repeats and inserts individually selected frames, all techniques, which Marker uses frequently. Usually the effect is obvious, and in that instance it isn't cheating. It cheats in another sense, when it separates concrete and diegetic time, but constitutes also analysis and exposition, so it's a function of film as discourse. It's discourse time rather than concrete time. Nonetheless it can create strange effects of duration. Marker attacks our present understanding of images.[307] The

meditation upon the metropolis of Tokyo becomes interwoven with a series of commentaries on the economic position of Japan, its political landscape, and its complex relations to other continents. One of the reasons why Marker returns to Japan is that it has arguably become the leading manufacturer of the new technologies that are transforming our experience of the world. The fascination of Japan is the manner in which the impact of new technologies has not simply eclipsed previous long-standing cultural customs, but coexists with pre-existent cultural patterns, creating a peculiar relationship between modernisation and tradition. Modernity, wherever it appears, does not occur without a shattering of belief, without a discovery of the lack of reality – a discovery linked to other realities.[308] Marker continually returns throughout the film to various sacred observances and rituals that preserve the practices of the past. Hence, whilst pointing to the rapid changes that have taken place in recent Japanese history, he probes the new cultural forms of modern Japan for symptoms of the deeply encoded patterns of the past. Postmodernism marks the era in which visual images and the visualizing of things that are not necessarily visual has accelerated so dramatically that the global circulation of images has become an end itself, especially through Internet. Marker's description in *Lettrè de Sibérie* of Siberia as a land of contrasts situated between the Middle Ages and the 21st century might provide a fitting epigraph for the analysis of his portrayal of Japan in *Sunless*.

With Marker the ability to visualize a culture or society almost becomes synonymous with understanding it. The film points to the coexistence of very different experiences of modernity within the global economy. Intercutting images of the highly technologised and affluent society of contemporary Japan with images of the rural poor of Africa, a contrast is drawn between the processes of modernisation in Japan and a way of life that involves a daily struggle for survival.

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On cognitive level, the problem of representing history for Marker is bound up with finding another way to write history, one that acknowledges, rather than occludes, the processes of constructing history; a form of history that finds a place for history's indeterminacies, in terms of both the limits of representation and the problems that beset our understanding of the temporal. That other way for Marker involves an attempt to convey something of "history's polyphony" and, through the mutability of signification and the refusal of closure, to represent story as a living presence. We might say that *Sunless* is a demonstration of such a model of history. Marker's modes of presentation within the film represent a critical engagement with the question of representation itself.

## SHOT CONNECTIONS

Julian Hochberg commented that the study of film could prove as central to the study of human perception as Renaissance painting for the development of rationalism.[309] The reading of cuts furnishes vivid demonstrations of just how swiftly the mind can process new perceptual data, and construct a hypothesis of their relationship with different data. This swiftness in reading and relating a new image is a function of "simultaneous parallel processing". The mind seems to concentrate on relationships rather than differences. The brains may be remarkable efficient, but they are neither magic nor omnipotent. In film form, which is tightly time bound, information must be worked out. The reader of a written text may read fast or slow and re-read a passage ten times, but most films use the average constant understanding speed.

This does not relegate cinematic narration to some category of coarser discourse than the performing arts, music and oral literature. Nor should one assume that films impose upon their target audience some

lowest common denominator of response, which would coarsen its delicate individualities. On the contrary: it reminds us that each individual spectator adjusts his or hers responses to each film, and in an ongoing manner. Certain sequences in Eisenstein's films delighted those intellectual spectators whose responses could combine pictorial sophistication with philosophical associations, or those who, after studying his theories, knew how he expected them to react. But the same sequences baffled, and therefore annoyed other spectators, whose response to films maximises that visual-physical "being-there" amidst the action described (the diegesis). When the spectator sees a new shot, he or she is, or course, quite free to note that fact, and meditate over it. But this would impede his attention to the ongoing flow of new information, and normally he or she has no reason to do so. The normative spectator is readily interested in this new development, and in its relationship, and the entire context so far.

The shot boundaries may be the least interesting thing about them, even when they help to structure an eloquent composition. The shot as an exact and integral thing is a "pawn", readily sacrificed to the overall flow. And the illusion, which it generated, is readily sacrificed to the overall illusion, consisting of different pictures. It does not matter that these images contradict one another, thus breaking the illusions at this level. This formulation contrasts with the usual assumption, according to which film is "illusionist" because its visual-physical form is somehow photo-, or movement-literal. Film can achieve an especially intense excitement by "transcending" this form by cutting. A new osmosis of visual-physical experience occurs and the ideas which it diagrams. The intensity, which the former gives to the latter, allows the latter to override the former. Thus the created space-time chunks are "liquidised", they flow into one another, and at the same time they are somewhat abstracted.[310]

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Stefan Sharff has been spoken of *deletions* in cutting.[311] Deletions are an admirable term, because it is free from irrelevant implications. Deletions refer to apparent space, because the deleted spaces may never have existed. In the beginning Joseph Losey's *The Go-Between* (1968) two boys set out to explore a country house. The theme of exploration and the shots of impressively grand staircases and long corridors would seem to render continuity so conspicuous as to forbid deletions. But the film concentrates on particular *chunks* within the overall activity, thus telescoping a probably all-morning exploration into a succession of split-minute shots. It nonetheless contains a sensed continuity, because the spectator sees the tempo of the action in each image, and extrapolates it into the gaps. In this way the implications of actions override concrete form and the diegesis is no longer then the actual film. The basic principles of this kind of continuity highlight individual moments as to imply longer duration, and single actions to imply the whole flow of actions. Also every space implies necessarily to a larger space, because cuts as changes of viewpoint can loosen space and time, and also spectator's attention in individual shots. And montage, as a collision of ideas, is in a sense also the omission of ideas.

The cut is a visual relationship between successive images but it is not itself an image because before the second shot can appear, the first must have vanished. It must become only a memory, a kind of "phantom form". Nonetheless, a visual relationship arises from the juxtaposition; generating that paradox of a pictorial relationship which is not a picture. When Eisenstein theorized cuts as graphic collisions between the shots, he was only describing what every spectator, who sees his earlier films, unforgettably experiences. As shots replace one another in the same screen space, their graphic forms can "collide", and visual features in one shot seem to "strike" against visual features in another shot. This collision is generating out of both a shock,

which belongs in neither of the shots, but accrues to the second shot before fading. This succession-as-collision depends, not on some "persistence of vision", whereby the human retina retains an image like some short-lived photographic process, but on the mechanisms of *visual* perception. These structures are not passive, transparent, and ethereally acquiescent to outside stimuli, but instead they are hardworking physical structures. They generate physiological sensations akin to a noise, and craftsmen naturally co-opt the sensations for their purposes, thus turning this "noise" back into "message". In the kinetic-physical quality of graphic experience, there may well be physiological feedback from another source, the kinetics of sensory-motor experience but if so, the balance of "noise" and "feedback" is difficult to determine.

The images, which relate directly across the cut, are not simple, single entities. Each image is already *multi-factorial*, a structured combination of many features. A cut may be very smooth in conspicuous respects, or very abrupt, with every opportunity for varying degrees in different combinations. In other words, the cut, as a general form, has no general meaning, which corresponds to all cases related to cuts. It is not really a semantic category even if it is a formal one. It accommodates very different relationships and meanings. The cut means whatever the juxtaposition of shots implies. It is this variety of relationships between intricately related forms, which make the art of editing a semantic craft, that is to say, a craft that is always an art. Film has the reputation of being a self-evident art, as obvious as perspective, but the self-evident is often made so by painstaking craft, by the art, which conceals art, and by adjusting intricacies and implications.

Chaos and confusion constantly await it, whence procedural rules like the continuity rules try to sort out situations. New ways of look-

ing were a primary focus of the French avant-garde in the late nineteenth and early twentieth centuries. What it means to look was thus a central concern of the modern art at a time of rapid social change. For example, the painters who worked in Cubism were interested in depicting objects from several points of view simultaneously. It was a style resistant to the dominant model of perspective, because it proclaimed that the human eye is never at rest upon a single point but is always in motion. The Cubists painted objects as if they were being viewed from several different angles simultaneously, and focused on the visual relationship between objects. Cubism changed the nature of the relationship between the painted image and reality, and by so doing it expressed a new relationship between man and reality.[312] Many other styles (for example, Impressionism and Abstract Expressionism) have also been responses to the dominance of perspective in Western art, and declared more subjective and complex visions.

In cinematic narration some cuts can be so smooth that the very category of cutting is thrown into question. In *Rope* (1949), Hitchcock constructed shots lasting ten minutes each (the maximum allowed by his equipment) and, on top of that, disguised the cuts by closely matching the first and last frames of adjacent shots. The cuts are detectable only because, such matching is surprisingly difficult technically. When the cuts involve no change of viewpoint, they are, in intention and in principle, undetectable, or rather they are moments within one sustained shot, one pause amongst others in the camera's continuous movements. Moreover, cuts are clear only to connoisseurs who find them interesting despite Hitchcock's avowed intent of achieving as cut-less film. At the other extreme, cuts can come on in startling fashion, and some are indeed called "shock-cuts". Even incompetent, truly muddled cutting is experienced in a less local way than one might expect. Even in those badly put together home movies, we experience, not so much a succession of immediate rude jolts,

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but a diffuser incoherence, a sense of rooms and walls floating uncertainly around one another, of space as wavering yet constrictive.

One might imagine that camera movements, being gradual, consistent and like real-life vision, would be immune from whatever possibilities of distraction might plague cuts. On the contrary, a cut from a long shot of a scene to a close up can feel entirely natural, for it resembles real-life vision and the way our attention moves from a general orientation to a "closer look" at whatever attracts our eye. The cut swiftly fulfils our interest or clearly re-directs 'it. It is a good *gestalt*, a neater diagram than real-life vision offers. But if the camera moves from long shot to close-up, it takes longer, and redirects our interests less swiftly. There may be an intermediate period when we are not sure what we are being re-directed to look at. For such lesser clarity of "extraction" there may be excellent reason, and indeed the track-in to close-up can have very different effects, depending upon each specific configuration. It may be short, swift and inconspicuous; or slow and creepy, and so on. Nothing is more direct, logical and natural than the cut, and nothing is as swift, in asserting a new topic and providing information about itself.

Nor does abstention from cuts respect the integrity of some *unity of space*, which would characterize real-life vision. In real-life vision, our attention consigns the overall consistency of the space around us to subliminal status, while our attention picks out, "segregates' but also inter-relates successive centres of interest. Our eyes may move like a camera but our attention jumps like editing. The image on the retina never even reaches consciousness. The camera has no brain, only a retina, and tyro moviemakers quickly learn not to take expressions like "camera-eye" too literally. The camera moves like the eye produces images. Without exploring all the differences between, film and real-life vision, the overriding fact is clear, that the

human-eye and the camera-eye have nothing in common except a lens. Human vision is edited "in the camera" by the brain. The eye is thought-driven, and the film negative is a retina with no thoughts, no responses, and no senses. The cameraman's eye must direct the camera's choices. The problem is not the sophistication of mechanical reproduction as compared to the naivety of the mind but the reverse since the machine is so primitive that the mind hardly knows how to gear down to it.

## PLACING THE CUTS

The spectator's mind is dealing with an irrational situation. The image is incompatible with the visual field around it, and with the spectator's physical reality. The camera moves, but gravity tells the spectator that his body is still seated, and his visual systems cannot come fully into play. What lays special duties on film continuity is not the clumsiness of the spectator's brain, but its accuracy in up-fronting the genuinely irrational nature of being there while being here. This is not to argue, as montage enthusiasts did, that camera-movement should be proscribed. On the contrary the director can compensate this by moving the camera in slow, smooth, and careful way, so that an unnoticeable unnaturalness is as rich a semantic intensifier as the "opposite" unnaturalness of the cut. A cut is the shortest distance between two points. It is the fastest and smoothest way to travel from one point to another, and by going straight to the new point it establishes a connection. A cut is both an analysis and a new association. Its segmentation preludes recombination.

The discontinuity corresponds to the discontinuity between any two ideas, or indeed any two sentences. A series of short sharp sentences can be read more smoothly than one continuous, but convoluted one. We have followed a common habit of language (parole), where-

by editing is the juxtaposition of shots. But it is an unusual type of juxtaposition for the spectator cannot see both shots at once. The juxtaposition is really a succession. In the more usual sense of juxtaposition the images are laid out side by side, as on a page, and the eye can move back and forth from one to the other both configurations being continuously present. Films can occasionally use "split-screen" effects, dynamically combining succession with juxtaposition. But for the moment our concern is in the more basic and pervasive form, suggesting montage as succession.

A redefinition of a cut as a connection is paralleled in etymology. As a production term *cut* begins from craft process: the editor shortens shots by cutting a strip of film across the frame lines. But since he or she usually goes on to join the separate shots he "cuts together" and "between" the shots, so that cutting also means its own opposite, the linking and assembling cuts together. The term "editing" may carry slightly stronger connotations of recombination and assemblage, than "cutting". But the two terms are commonly synonymous, and the strongest distinction between them is that "cutting" associates with a manual craft, whereas "editing" up-fronts executive status. In French *montage* is the standard term for cutting and editing. The Russians adopted it as a standard term, to which the theories of Sergei Eisenstein and other Russian avant-garde artists gave a special sense. This was helped by the French avant-garde interest in dazzling cutting, and the two influences established montage in English as meaning conspicuous, creative cutting. The term *montage sequence* means a short sequence of conspicuous editing, often using optical effects of many kinds.

To say that editing depends on knowledge is to say that it depends on implication. To a great extent, the art of editing is the art of anticipating the spectator's expectations and questions, and at a pace to which

he or she can readily adapt. In cinematic narration shots contribute to the logic of implication. Logic often implies causality, or some otherwise necessary relationship with determining prescriptions and inexorable consequences, as distinct from looser relationships, influences and tendencies. Usefully it stresses the positivism of the process, the idea that mental constructions are very forceful and strong enough to form a structure on which film form (including editing) can rely.

In cinematic narrative, the content or composition of one shot might refer to another across long intervening passages. Sometimes this reference is a repetition often it is a variation, which routinely involves extrapolation. Sometimes the references are more approximative analogies, or restricted to one element. Normally they are motivated by other elements in the structure of the discourse. Cinema is labelled by selectivity, viewpoints, which are developed through choices. Even the shortest documentary contains a lot of organizing, a point of view of fiction. So the essential cinematic strategy contains the idea by which one can hide things in a film, in order to gradually reveal them. Through this kind of mechanism a series of cinematic shots shape into a series of emphasises, throughout the selective and manipulative role of the camera. That is why film is not a reproduction of reality, because, once a scene has been cut into shots, we are not working anymore with the reproduction of reality; instead, we are working with the statements referring to that reality. In a sense film seems "real", because it reproduces the way we see things in the world; it has not got so much to do with the fact that it reproduces the world exactly, but it reproduces the way in which we look at it. Cutting into shots sometimes corresponds to selection and manipulation, like when in a film one hides themes in order to reveal them, which sometimes corresponds to the way in which one normally uncovers reality (one sees a thing in a long shot, then walks up to it, and it is in close-up;

then one walks around it, and it is like a cut or camera movement). In many films this may reproduce normal perception, which in one sense is manipulation and in another it is not. Selection can rely on natural processes, natural perception, and it can rely on manipulation as a trick made by the filmmaker. Most of our thinking goes on in the intervening areas between reality and fiction, which can be called speculation or hypothesizing; that is an area of uncertainty.

## CONCEPTIONS OF FILM FORM

Sergei Eisenstein among other Russian theorists was the first to see the full possibilities of the early fragmentations of space and time in cinema. The emphasis was on cutting, which depended on showing. That is how Eisenstein brought to film an eye as 'painterly' as that of the German expressionists, and Eisenstein-type of editing became part of film language generally and featured particularly in the work of film theoreticians and documentarists, who were often the same people. Russian theorists devised the useful distinction between analytic and synthetic editing. In analytic editing clearly single, continuous space is dissected into several shots. In synthetic editing several spaces are assembled into one. Synthetic editing disguises an initial separateness to create an apparent continuity. The practices are less symmetrical than the terms. Analytic editing may or may not disguise the original space. Synthetic editing does that always. The opposite of analytic editing is intercutting. Synthetic editing is the first hint that the distinction between one space and several spaces can be far from clear. How does then the spectator decide whether successive shots have remained within the same scene? She must decide whether the space, direction, action, objects, and general character of the shots look roughly compatible. She must reckon not only with actual positions but also with general trajectories of movement, and with spatial extrapolations like the probable continuation beyond the frame, the

directions of people's looks, and so on. Thus on-screen space always suggests off-screen space but without defining it. The spectator works through probability or improbability of continuation. Since off-screen space remains undefined, space here can only mean a kind of zone or general area. That's why it is a feature of general description.

In Buñuel's *Un chien andalou* (1928) a girl looks out of a window, and sees a fallen cyclist in the street below. She rushes out of the door down some stairs, emerges from the street door, and embraces the cyclist. In one sense there is a sequence of several scenes consisting of a room, a staircase, and a street. But in terms of physical and visual continuity it looks like a one scene, because the girl can see from the room into the street. Although the stairwell is visually separated, her physical movements are also in one uninterrupted line. This film is full of spatial tricks, and these kinds of equivalents are completely routine-like in many films. The principle in here extends through chains of sequences. It brings out the question, how far apart must two people be. So, that the same space (the line of pursuit) feels like two separate shots. For example, most chases in films are so ambiguous that they can be handled either as a sequence or as a scene. If we inter-cut between two cars shown separately, it suggests a sequence, because they will pass through the same spaces but at separate times. A high distant viewpoint might show both cars in the same shot, in which case it is a scene. If the director combines inter-cutting together with such long shots, the combination would be called either a scene or a sequence though the general sense of a movement might favour 'sequence' over the more static connotations of a 'scene'. This would suggest that the scene-sequence –distinction involves not merely the relationship between different objects but their relationship with the camera. In this case, the scene and sequence are not categories of the diegesis but a function of exposition, and often a decision of style in

most of the cases. Theorists have assumed that since film is so real-
istic and visual, spatial relationships must be self-evident, so that it is
immediately obvious whether a shot belongs in the same space as its
predecessor, or somewhere else. Anyway, there are many cases where
a shot carries no indication of whether it is another part of this scene
or the first part of another scene.[313] Film is certainly a visual-physical
medium in which space-time continuity is always conspicuous but
not self-evident. Hence the conveyance of rough relative positions is
so crucial and pervasive that it extends beyond the realm of cutting,
and routinely makes calls upon the internal content and form of the
shot.

A shot in a film is a series of images, a series of frames, but it is also
a serial image, a new kind of pictorial entity, and even if there are no
camera movements in a shot, on the level of the image there are many
kinds of movements, which allow the shot to be covered. A move-
ment (objectional or camera movement) does not undermine the
image, but develops it. What the graphic qualities lose in the sense
of economy, they will regain through tempo, rhythmic, choreography
and orchestration.[314]

In Béla Balázs's view, then, a knowledge and understanding of film
is vital to improving its aesthetic quality. The collective and com-
mercial nature of film-making means that it is impossible for a lone
cinematic genius working in isolation to advance his or her art, as a
writer, painter or composer might do. Theorists have assumed that
since film is so realistic and visual, spatial relationships must be self-
evident, so that it's immediately obvious whether a shot belongs in
the same space as its predecessor, or somewhere else. There are many
cases where shot carries no indication of whether it's another part of
a scene or the first part of another one. One might argue that space
consists, not of areas, but of directions, which sometimes criss-cross.

For as the camera moves around a scene, it may show the same area from different angles dissolving it within different configurations.

Film is a visual, and physical medium in which space-time continuity is always conspicuous. On cognitive level, Balázs's account of the phenomenon of 'identification' might seem to bring him closer to the critics who regard the viewing of film as passive consumption, since it could appear that 'identification', as he describes it, involves a loss of critical distance. But Balázs does not look askance at this process; he sees it, rather, as an effect that demonstrates the artistic newness of film. This is his summary of 'identification'. The loss of distance that is an element of 'identification' can be *related* to another aspect of Balázs's theory of the effect of film. It is not only that film creates the complex interpretative competence that is necessary if film itself is to be understood; film also results in an enhanced perception of reality. Loss of distance is a key aspect of this enhancement, as is evident from Balázs's elaboration of the combined effects of the first and second formal principles of film that he has identified: the variation of distance, particularly insofar as it permits the 'close-up'; and the division of scenes into shots.

The close-up of the human face makes possible the 'silent soliloquy', in which the face speaks, whether the character is alone or with others, mute or in conversation: 'the close-up can lift a character out of the heart of the greatest crowd and show how solitary it is in reality and what it feels in this crowded solitude', and the film, especially the sound film, can separate the words of a character talking to others from the mute play of features by means of which, in the middle of such a conversation, we are made to overhear a mute soliloquy and realize the difference between this soliloquy and the audible conversation. Film, through the close-up, can make possible 'the "polyphonic" play of features ... the appearance on the same face

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of contradictory expressions' so that 'a variety of feelings, passions and thoughts are synthesized in the play of the features as an adequate expression of the multiplicity of the human soul.[315] This reveals to the audience 'a strange new dimension', 'a new world', the world of microphysiognomy which could not otherwise be seen with the naked eye or in everyday life.

Balázs further explored the relationship between changing set-up and identification, drawing on his notion of the 'visual anthropomorphism' of film, and using the humanist metaphor of the face, or 'physiognomy', of objects and appearances: our anthropomorphous world-vision makes us see a human physiognomy in every phenomenon'. His concern was also with the relationship between the 'objective' and the 'subjective' in film.

"Montage is the association of ideas rendered visual; it gives the single shots their ultimate meaning ... because the spectator presupposes that in the sequence of pictures that pass before his eyes there is an intentional predetermination and interpretation. This consciousness, this confidence that we are seeing the work of a creative intention and purpose, not a number of pictures thrown and stuck together by chance, is a psychological precondition of film-watching and we always expect, presuppose and search for meaning in every film we see. This is a basic, irresistible intellectual requirement of the spectator and it operates even if by some reason or other the film seen is really merely a chance collection of pictures stuck together without rhyme or reason. Seeking a meaning is a fundamental function of human consciousness and nothing is more difficult than to accept with complete passivity meaningless, purely accidental phenomena. Our mechanism of idea association and our imagination will always tend to put some meaning into such a meaningless conglomeration, even though perhaps only in play."[316]

It is interesting to link this psychological model with Balázs's earlier observations on the way in which film changes human sensibility. Balázs's affirmation, in the above extract, that sleeking a meaning is a fundamental function of human consciousness, casts into doubt his earlier assertion that new human faculties have emerged as a result of the birth of film; rather, it could be said that these faculties are not so much new as an example of a general function of human consciousness engaging with a new medium. It is also significant that Balázs came close to auteur theory by conflating the desire for meaning with the idea of an author, or at least 'a creative intention'. But to 'expect, presuppose and search for meaning' in a film, or in any other phenomenon, does not entail the belief in the existence of an intention or an author: indeed, Balázs's pointed that our mechanism of idea association and our imagination will read meaning even into a meaningless conglomeration reinforced the point that meaning can emerge without an actual or posited author.

Montage, or editing, can be used to produce a number of important effects. For example, to convey the sense that time has elapsed between two scenes, it can interpolate another scene in another place. In his discussion of this kind of interpolation, Balázs proposed a most interesting link between time effect and space effect ... the farther away the site of the inserted scene is from the site of the scenes between which it is inserted, the more time we will feel to have elapsed. The interpolated scene technique is difficult to avoid and renders it necessary to make several threads of action run parallel to one another. As well as conveying a sense of time and interweaving several strands of image and narrative, montage also creates associations of ideas, either by suggesting indirectly 'the inner sequence of the spectators' idea-associations' or by actually showing the pictures, which follow each other in the mind and lead from one thought to the next'. The flashback is an example of the latter approach. This

may be used in a relatively simple way, in which the transition from fictional present to fictional past is strongly marked, but in which the representation of the past itself takes a straightforward narrative form. On the other hand, it may aim to reproduce the psychological process of remembering the past.

## INSIDE THE AUDIOVISUAL WORLD

The *synthetic* and *analytic* methods of perceiving are two ways of interpretation.[317] As the names indicate, the observer who adopts the synthetic method tends to see the perceptual field as an integrated whole, whereas the observer who adopts the analytic method breaks up the field into its constituent parts or details, studying each one separately and perhaps overlooking the effect of the whole.[318] In the synthetic method visual illusions appear more compulsively; apparent movement and causality are readily seen; size, shape, and colour constancy are high. The analytic method is more appropriate when small details must be attended to and certain qualities isolated from the whole, for instance, in judging the brightness or colour of a surface independently of its other qualities, or those of the remainder of the field. Furthermore, it must be utilized in making judgements of perspective size.[319] Julian Hochberg thinks that the explanation of why inconsistencies of pictured space can go unnoticed may in part be that the inconsistent regions of the picture are not normally compared to each other directly, and any object is usually examined by a succession of multiple glimpses, and the various regions that are looked at each fall in turn on the same place in the eye.[320] That is why the separate parts of the figure all have to be brought at different times to the central part of the retina, the *fovea*, if they are to be seen in full clarity of detail.

According to the psychologist way of perception the meaning of the stimulus is to function as an interface between two kinds of texts, the one being the object itself and the second being the spectator's mind, which alone contains the meaning, which it associates with the text's otherwise empty signifiers. So the picture is merely form signifying nothing, but awaiting a mind to contribute the connection between signifiers and signifieds.[321] That is why the meaning in cinema's visual perception is constructed in the mind, because the emphasis on the active and constructive operations of the mind will in gestalt psychological thinking go far beyond the notion of "the production of meaning" by a "text".[322] In spite of retinal variations and environmental influences, the mind's image of the object is constant, because conception transforms perceptual forms. It is a question of constancy of vision, as J. M. Wilding puts it: "The maintenance of a stable world despite changes in the view due to our movements is called position constancy."[323]

If visual perception only seems to have a truly astronomical "spelling" and "vocabulary", it is because it has neither. It remembers not so much specific forms, as processes of construction. Durgnat thinks "in real visual perception, we have taught ourselves to see that a table is rectangular even though, as we walk around it, its images on our retina can only be a constantly changing series of quadrilaterals.[324] That is why it is obvious why "elasticity" is the essence of visual perception and structuration, even at the expense of confusion. Visual elasticity resembles analogy in that it may be very precise or very rough. So much so that it can only work in an intimate alliance with other principles.[325]

And if a single image is rich in its complications, then the multiplicities according to it are based on the points for our attention through perception. As our gaze, and independently of it our thoughts move

over an image, they discover a variety of centre points.[326] The image and its associations may tempt, tease and lure or provoke us although the artist might have anticipated the manoeuvres of our attention, but pictorial reading of an image or pictorial appreciation of an image gives us further encouragement to look for the graphics. This gives us a new way of looking through the configuration of pictorial elements in an image, because the eye rarely fixes on a certain point for very long. The essence of the process is more like some kind of patrolling over an image.[327]

Visual perception related to cognitive understanding of Peter Green-away's audiovisual world is extremely important. Visual perception is not just recognition, but more or less it is perception and under-standing of spatial structures, and understanding of different objects and parts and their relations in visual field through visual thinking. The function of the rules and conventions of pictorial composition is to encourage maximally efficient internal relationships as related to context, content, and purpose. Related to Greenaway, much of interesting discourse involves some shift of alteration to conventions, and special purposes may require that normal procedures be bent, twisted, reversed, or broken, for example, a filmmaker like Greena-way may think that it is important to draw the spectator's attention to facts and features of the frame, not only as a condition of picto-rial representation, but as a contradiction of the represented items placed in cognitively.

This guidance of pictorial glances might then reverse normal view-ing procedures, and bring in new tensions concerning the cognitive meaning of spatial, and temporal dimensions of films. In Greena-way's narration, the meanings of the screen will come and change their form quite suddenly. Partly it is because of the camerawork, partly because of the compositions, the changing effects inside the

shots. According to this kind of planning, may the enrolled image of the same camera position have a new meaning in the middle of the same shot, when the attention-point will be focused again. The object (a person or something else) that comes into the frame will be combined with the possible camera movement (for example, tracking backwards) and some new thing emerging rapidly, which creates a kind of dramatically influenced mood, stops the whole scene for a while and then continues to developed the shot into new areas of meaning.

Greenaway seems to trust into partial perception and space-controlled duration of the shot, according to which different sections than these kinds of systems, which require more initial attention, dominate the visions and spatial areas in our brains. As Thomas Elsaesser puts it: "A static, closed universe, jerked into mechanical life by rules, games and witticisms: this side of the coin is almost too easy to fault, as if the director were in advance disarming the critics by playing even more openly his customary hand. But Greenaway always keeps a powerful motive up his sleeve to propel his figures into narrative: that of the contract and the conspiracy, antithetical and warring principles in one's dealings with the world."[328]

In Greenaway's *The Draughtsman's Contract* (Great Britain, 1982) the prime interests are the landscape, the ideas involved in the sheer interplay of plot, the symmetry, and those concerns characteristic of the whole sub-text of gardening; also the games that can be played with the dialogue, its content and the forms it takes. The film is set in Wiltshire in 1694 and is about a landscape artist and Scottish Roman Catholic called Mr. Neville (played by Anthony Higgins) who makes living drawing prospects of country houses for the landed gentry. Greenaway uses strong visual associations with one of his earlier films *Vertical Features Remake*. Both are concerned with the draughts-

man seeking out particular characteristics of a landscape and pursu-
ing them in an almost minimalist way. One constantly repeated shot
is of a landscape seen through Neville's drawing aid, a rectangular
wooden frame. This frame-within-the-frame device calls attention
to the framing inherent in all filming, painting and photography. It is
also a distancing mechanism.

According to John A Walker: "Composition is obviously crucial to
the topographical views Neville specialises in and a comparable atten-
tion to composition is paid by the director and the cameraman. The
geometrical system of perspective underpins both the acts of draw-
ing and filming. Geometry is also present in the layout of the formal
gardens of the house. Frequently, shots are so composed that the
elements within them are symmetrical. This kind of ordering reflects
the love of pattern typical of the period, but also the logical systems
associated with so much modern art."[329]

Greenaway's film works as an invitation to consider the problems of
pictorial representation by watching someone drawing a real land-
scape, by comparing image and reality, and by reflecting on the rep-
resentation of both via the medium of film. *The Draughtsman's Contract*
is structured to keep going back to the same landscapes at different
times of the day, to see how the light has made shapes, forms, ver-
ticals, how they've changed and what new significance they have at
different times of the day.

James Corner has pointed out that a landscape space is a highly situ-
ated phenomenon, literally bound into geographical places and to-
pographies.[330] That is why the spatial interrelationships of the cul-
tural and natural patterns that constitute a particular landscape mean
that places are interwoven as a densely contextual and cumulative
weave. Places, like things, conjure up a wealth of images and ideas,

and Corner relates this to Heidegger's thinking according to which, spacing also implies a conceptual ability to 'think across' space.[331] As Heidegger has shown, thinking can 'persist through' distance and time to any thing or place.[332] When one moves through landscape space, that person is going 'somewhere', he or she has a destination, and, in a phenomenological sense, part of the individual is already there through his or her thinking about the destination. The experience of landscape space is never simply and alone an aesthetic one but a highly situated network of relationships and associations.

James Corner defines: "Meaning, as embodied in the landscape, is also experienced temporally. There is duration of experience, a serialistic and unfolding flow of befors and afters. Just as a landscape cannot spatially be reduced to a single point of view, it cannot be frozen as a single moment in time. The geography of a place becomes known to us through an accumulation of fragments, detours and incidents that sediment meaning, 'adding up' over time."[333] In *The Draughtman's Contract* the draughtman's perspective frame is explicitly compared to camera: the film camera frames and repeats the views, in a series of shots poised between subjectivity and objectivity.

Alan Woods thinks that objectivity is mocked throughout the film, as the script explores the paradoxes and naturalised conventions involved in representing 'what is really there'.[334] The drawings claim a photographic objectivity, but the camera is demonstrating the power of cinema as superior not just in realism but also in artifice. Any secure contrasts between realism and artifice break down. The spectator's perspective is a perspective of witnessed space, which is contrasted in the film with a perspective of narrative, or allegorical space. Both perspectives are present in cinema, ionised, mingled and schematised by Greenaway.[335]

A thousand years ago, Sei Shōnagon, lady-in-waiting to the Imperial Court during the Heian dynasty, kept a diary of her thoughts, feelings, and experiences – *Makura no sōshi / the Pillow Book*. In Greenaway's *Pillow Book* (1996) the director tells the story of Nagiko, who grows up in the city of Kyoto, the daughter of a writer and calligrapher. On her every birthday, while her aunt reads out loud from *the Pillow Book*, her father writes (paints) an ancient creation myth on the child's face and nape. The *Pillow Book* is widely held to be not only a consummately crafted work of prose, but also one of the most important historical documents of the mid-Heian period.

Today it survives only in fragmentary form, a montage of impressions, character sketches, anecdotes and acute observations on nature, objects and the everyday life of the court. It is the 164 lists that Sei Shōnagon composed within *The Pillow Book* that are of most interest; lists such as "Things that arouse a fond memory of the past", "Elegant things", "Rare things", "Distressing things" or "Things that quicken the heart". Indeed, there are explicit and implicit references to Sei Shōnagon's lists.

We might therefore regard Sei Shōnagon's book as providing a literary counterpart to Greenaway's film, and regard Greenaway as reaching back into the distant memory of Japanese culture to discover the model for his own visual exploration of the everyday life of contemporary Japanese culture. *The Pillow Book* serves Greenaway as an example of an alternative mode of representing history and a model for organising his filmic impressions. Not only does it provide a method, it refers to Sei Shōnagon's lists as providing a useful criterion of selection but also we sense the reflections about the disenfranchisement from political influence that gave rise to such writings, as Sei Shōnagon's echoes the sensibility of the filmmaker, weary of the "intransigence" of history to the cause of social and political jus-

tice. Hence, the commentary's description of the prose stylists of the Heian period might also, in certain respects, be applicable to Greenaway's own contemplation of the signs of everyday existence:

Cognitively speaking, in *Pillow Book* the overall visual metaphor is the oriental hieroglyph as a template for a cinema practice. The history of Japanese calligraphy is also the history of Japanese painting. In this sense, image and text are one. The text is read through the image, and the image is seen in the text. With the Japanese hieroglyph predominantly in mind as a model the subject of such a film would most naturally be Japanese. In the *Pillow Book* there are visual language devices familiar from television like insert frames, overlay frames, colour-coded frames, and multiple use of image and text. All these have been major characteristics of all forms of visual advertising. This film engages in this multiple languages using a content that is sympathetic and relevant to such treatment. The form and the content are working very close together.

The narrative demands a mixture of tenses, and the insert frames and multiple screens can embrace images of the past, present and future, not sequentially as is traditional, but all at once, arranging them in significant patterns of scale, priority, importance and colour, not necessarily in clear demarcated blocks but overlaid or interlaced to make equivalents to how we perceive time and tense. The frame priorities are arranged to accommodate irony, humour and criticism. This is all arranged on one viewing plane. It is a reach-out towards the freedoms and language that Cubism and Joyce and Eliot gave to Modernism.

Using other possibilities of the complex frame construction, referential visual quotes are made of East and West, of the old and the new, in particular the dominant Western tradition of the Renaissance view-

ing-frame and that of the largely unframed Oriental picture space. The film borrows the device of the calligraphic chop-signatures (the personalised stamp-marks that identified a particular calligraphic artist), for making imprimaturs of other kinds. These it uses to negotiate conflicting Western left-to-right and Eastern right-to-left readings. The Western reading indicates positive action, spelling confusion to any reading of Japanese text and image combinations, while the Eastern reading seems unbalanced to a Western sensibility, uncorrectable in a mirror and even morally confusing.

## FRAMED IMAGES

Noël Burch sees that "our contention that all the elements in any given film image are perceived as equal in importance runs counter to a fondly cherished notion of nineteenth-century art critics later embraced by a number of twentieth-century photographers: the belief that the eye explores a framed image according to a fixed itinerary, focusing first on a supposed 'centre of compositional focus' (generally determined by the time-honoured 'golden rectangle'), then travelling through the composition along a path supposedly determined by the disposition of its dominant lines."[336] Burch thinks that this kind of conception is outdated because the modern eye sees things differently.[337] There are elements in a film image that call attention to themselves more strongly than others, but at the same time the spectator is also aware of the compositional whole because looking is a mental process. That is why the artist cannot direct our attention as closely as certain traditional analyses, based on compositional level, are firmly to believe in, but as Durgnat has pointed out, "powerful structures can exist without a one-way, linear order".[338]

Cognitively one often sees things as a whole and after that one dips into details, which become centre points, but at the same time one

looks at the relations, which also become centre points. For example, when one looks at a map, a distance between two places, one is not looking at a point, but instead a distance between two points, so at the same time when we are talking about centre points, we are also talking about zones, lines, distances and fuzzy circles. When one sees a triangle, one can see it as a shape, as an outline, and one can look at the three lines or one can look at the three angles, so it is a question of the extreme flexibility of the centration points which constantly overlap with each other. In looking at a triangle, one can centre on the top apex, and then another apex and another apex; next one can centre on the space between the lines, and one can think of the three lines as one shape; then one can think of each line on its own, each angle on its own.

One has actually found already over ten centration points without moving one's eyes because they are really tension points, some of which are as big as the whole triangle, some of which are as small as a given angle. While our visual attention moves across an image, its major configurations and relationships will keep recurring and reorganizing. Our visual attention moves across an image as if we were redirecting a more or less real scene, at least to the extent that an image can be a real object and a depiction of something.

When talking about the varieties of visual coherence, Leo Braudy has suggested that a representational art always re-creates the world around us as a new form of visual organization.[339] And movies, because they exist in time, expand the shaping possibilities available to painting and sculpture. And since their methods are in part so subliminal, movies can constitute a generally available method of creating visual coherence, the effect of which we can see around us every day in paintings, photographs, comic strips, sculpture, life-style, and

even the "scenes" our eyes pick up when we walk down the street, across a field, or into a room.[340]

The main structural similarity between the eye and the camera is that both have lenses, and that isn't very significant, since everything in their perspective systems is entirely different. The camera captures on film a superficial and momentary impression of a scene, with an all over evenness which is as un-analytical as it is impartial, and with a fixity which renders it incapable of interrogation, correction and re-vision. In comparison, human vision, or rather human attention, entails the operations of the *mind's eye*; that is to say, it works like a rough-and-ready but versatile and self-correcting computer, which can summate and integrate a variety of glances, and for which 'I see' means 'I understand' since it functions by feedback between *seeing* and *knowing*, between seeing-as and *interrogation.*[341]

The visual world around us is rarely at rest: and if it is then we are not, because our eyes move so that the image on the retina is constantly unstable. And when objects do pass us, they change their form constantly; even the most static objects are in a visual movement when we approach them or move our heads. When we are moving through visual spaces, the exact definitions are usually less important than some kind of rough perception and spatial location. In visual and pictorial perception there's a powerful element of analogue approximation:' It looks roughly like one, so it probably is one.' For analogy is *elastic* (just as similarity is a matter of degree) and *selective* (it operates even when limited to certain aspects."[342]

## VISUALISING MEMORIES

Visual and cognitive perception is not only the gathering of information or activating the mind and its representations. It is also some

kind of foreboding of future perceptions, as cognitive psychology has demonstrated. Visual experience of art is often kinetic, and dynamic, and deals with psychological and imaginative forces. In a psychological framework image-based visual and cognitive discourse functions on many emotional, and other levels. The spectator uses a wide set of dispositions to make sense of the various levels of image-based discourse.[343] Perceptual and cognitive inductions differ from logical inferences, because inferences are thought operations that add something to the given visual facts by interpreting them. Instead, perceptual inductions might be based on previously acquired knowledge of the world. If film would depict reality itself, its running time would be identical with the action time of the illusion. There are pressures in this direction, but insofar as a fragment of an action can suggest the whole, the general sense of time elastics swiftly. Rapid cutting and use of montage may quicken pace and sharpen time, and slow cutting can lengthen it, but the content of the narrative can even reverse this. Talking about visual perception and montage reflects strongly through the film art of Péter Forgács. Forgács started his series of films dedicated to the history of Hungary with the film *The Bartos Family* (1988). Forgács has since then assembled these Private Hungary documentary series from a collection of home movie stock dating back to the 1930s and up to the present.[344] On cognitive level Forgács's films offer an interesting and demanding way of combining the tradition of the montage film, archive film, and the so-called found footage film.

Especially Forgács seems to revive the tradition of family film while examining the Central European history, and evoking the pathos of individuals living their everyday lives against the often tragic background of historically events. There is an ontological dimension in the work of Forgács, since his films reflect the work and nature of memory, the construction of history, and they create phenomenolog-

ical reflections on the medium itself. The films have a psychological tendency, because they are comprised of intimate diaries, letters, and autobiographies. At the same time, they reflect experimental traditions, and the history of documentary film. Most of his films are collaborations with the minimalist composer Tibor Szemzö, who creates a special sound-space behind the Forgács imagery.

Usually in a Forgács film, there are at least two levels of narration, the macro and micro levels. The macro level offers a documentary view in the history of Europe. In this level Forgács uses archive material from the thirties on, and on micro level, Forgács provides the spectator with an inside look into the family lives of certain individuals during those times. For example, in *Angelos' Film* (1999), the narrative goes forwards with the combination of images, sounds, and texts. On micro level it tells about the life of a Greek Angelos Papanastassiou utilizing lot of home movie stuff photographed by the man himself. The pictorial material includes also still photos and maps. The texts are used to locate the shown material, and name the people, and places and times behind their stories.

The soundtrack consists of the voices of narrators, music and different sound effects related to the happenings inside the narrative. Especially voice-over narration is frequently used, in *Angelos' Film* this is done through the protagonist's own voice or through narrator's voice. Also music and other background voices do influence the narrative, and they help the spectator to interpret the given material, and the connections between the parts and the whole of the narrative structure. The film depicts war and death, but also life and birth. It tells about shocking terror and cruelty, but also about happiness and hope. There are many symbolic levels in this and other films. Usually, the single images and scenes symbolize something larger.

*The Danube Exodus* (1998) is a film, where Forgács uses footage shot by riverboat Captain Nándor Andrásovits to follow his voyages up and down Danube, through Bulgarian and Romanian territory, transporting Hungarian Jews to the Black Sea for passage to Palestine, and then returning with German farmers, driven out of Bessarabia by the Soviet army for eventual relocation in occupied Poland. In the film these happenings and voyages are chronicled in illustrative ways. The depicts the special passages in European history, the interconnected stories into a fascinating experience by showing lot of intimate connections under fear and destruction. The narration goes on with voices of commentary, and the feelings are often made stronger with special sound effects connected with the happenings. The relationship with the image and sound is often counter-pointed. Szemző's music reveals the real nature of the film material, and often provokes the spectator to interpret things in a certain way. Music can even change the content of the images, and through that it can lead the spectator to build up certain meanings.

Cognitively, a process of focusing the gaze occurs in Forgács's oeuvre. We might normally arrange to overlook a shot's edges, even when our protagonist walks off it, abruptly disappearing, or are laterally bisected at the neck (in close-ups) or waist (in mid-shots). If we mentally abstract the shot from its own edges, we connect each shot with the next, although they are visibly separate entities, and not simultaneously visible. In Forgács's films montage depends on this mental overriding of the film's form. The perceptual movements like eye movements and re-focusing of the attention, or more elusively mental, like movements of attention, are physiological. As co-ordinations of mental and physical operations, they involve physical tensions, which aesthetic theory has treated in terms of tension, rhythm, balance, and all the other elements of pictorial composition and its many significations.

This is special for cognitive understanding of Forgács's films. Images seem to provoke these factors in which real life viewing does not. This is partly through the picture's tight unity, partly through the relative restriction of the eye movements, partly through contradictions between the pattern and the implied scene, and partly insofar as looking at images uncouples perceptual processes from most *being there* reflexes, leaving them available instead for more sensitive significance. Forgács's documentary material is shot in real-life situations, which is reflected in these images, and it brings in new levels of testimony into the narrative.

Although montage by Forgács deals in successive, separate shots, not one continuing shot it involves exactly the same visual mechanisms and elements. But whereas the single, continuing shot is an image with sub-configurations, the sequences are configurations, some of whose sub-configurations are images. In a sense, the eye has less freedom, since the succession and duration of each image is controlled, and presumably eye movements cease or diminish, at least if the editing is fast enough. On cognitive level the mind has more freedom, since the on-going configuration never presents itself as a fixed whole. It is a deduction from the multiplicity of images and held together only in the memory. In a film shot the form disappears as fast as it appears. The structure is space in time but like the single image, it combines looseness in some respects with integration in others. Integration means that shots have a pictorial relationship with one another. For example, the juxtapositi6n of two strong compositions can create a shock, a collision, and a sensation of optical clash, or contradiction, and a kind of kinetic dynamic. The montage by Forgács brings in new associations, and cognitive understanding of art and film. Many narrative levels are mixed and brought together.

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This might mean looseness in that sense, that the eye can prioritise the change of shot, and concentrate instead upon elements that link two shots. Thus one can recognize a second shape as the same thing from another angle, and prioritise the continuity. The juxtaposition of shots is only a prelude to the semantic interaction between shots. Editing practice is dominated by the dialectics of contrast and continuity, difference and similarity. The spectator's mind must handle all this very fast, usually relating two shots and overlooking the cut. Frequently the spectator does to the cut what he does to the edge: he overlooks it, since it is more important to focus on the information within each shot. But there are cases, when the clash, the "interval" between the shots, becomes conspicuous.

Forgács's films mix macro- and micro levels of narration, and therefore try to repair the web of time. The problem of representing history for Forgács is bound up with finding a new way to write history, one that acknowledges, rather than occludes. Forgács searches the processes of constructing history; a form of history that finds a place for history's indeterminacies, in terms of both the limits of representation and the problems that beset our understanding of the temporal. Another way for Forgács involves an attempt to convey something of history's polyphony and, through the mutability of signification and the refusal of closure, to represent story as a living presence, bring the images and sounds of the past into living again.

We might say that, for example, Forgács's *Free Fall* (1996) is a demonstration of such a model of history. What memory chooses to remember is a central theme in Forgác's films. Memory is the bridge between space and time. There are many moments in Forgács's films, which are described, as being among those memories whose only function is to leave behind nothing but memories. Forgács thinks through his images and sounds that the different concepts of time is

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the great question of the century. According to this belief we live in a world of intensely tiny units of time. The real world and our image of the world no longer coincide. Szemsö's music is eerily effective, and Forgács turns salvaged images into a vivid glimpse of the lost world. The spontaneous gestures, improvised scenes, and concrete situations were not designed as indicators of broad historical forces but as animated mementos of personal history.[345]

Forgács's modes of presentation within the film represent a critical engagement with the question of representation itself. A more flexible approach to the characterisations within Forgács's would therefore be to see these characters as positions within the film, which are mobilised to a variety of structural, as well as autobiographical ends. They represent alternate approaches to representation, alternate strategies and aesthetics to the question of the representation of memory which are deployed in the course of the films, and which at various moments Forgács himself has deployed.

Forgács insists on there being no simple equivalence between the photographic images that record an event and events themselves, undermining any notion of an immanent relation between the two. The photographic image as a trace of an event acquires a materiality that substitutes itself for the contingency of the passing moment it depicts. The photographic image renders a precise moment in time. Complicating this still further, any attempt to preserve a simple opposition between events and the images used to depict them has to take into account the presence of technologies such as film or photography at those events. This presence represents an intervention one that inflects and shapes the experiences and events it seeks to record. In this sense, by embracing cultural simultaneity in an ultimate eclecticism of images across time and space, Forgács responds to the major social and cultural changes.

The rich repertoire of shooting and editing techniques in Forgács's films are employed to gain the spectator's complicity, by disarming and penetrating the subject from every possible angle. In documentary film, various kinds of direct and indirect address have been added to the expository techniques. For Forgács, it is an ethical imperative of representation that it declares its means, rather than present film as a transitive instrument of reality. In this respect, Forgács's critical use of self-reflexivity as a technique of raising self- consciousness should be differentiated from the more conservative and modish uses of self-reflexivity in much contemporary postmodernism. Devices for keeping the framing operations of the cinematic medium at the forefront of our consciousness comprise, on the one hand, strategies of interruption which draw the viewer's attention to the processes of construction, such as altering the speed of the film, freezing an image, substituting photographs for moving footage, or "tampering" with the image - for instance, "arbitrarily" altering the colour tones of images and sequences. This self-reflexivity extends even to discussing openly the processes of composition.

The classical unities of time and place are constantly interrupted as Forgács's films traverse different places and different times, bringing them into a dialectical relationship with each other. At times, the kaleidoscopic nature of a Forgács film may convey a sense of randomness and even disorientation for the spectator, who searches in vain for the familiar footholds of the conventions of traditional narrative cinema. Forgács insists that his audience dispense with these structures and adapt to a different way of reading. The viewer has to respond to shifting modes of signification, and interpret the film according to both diachronic and synchronic modes of reading, constantly referring to what has gone before and reappraising its significance. Hence, to come to terms with the film's found footage requires one to fol-

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low the film's many-sided narrative, to attend closely to the style of presentation, which is inextricable from its content.[346]

Cognitively an essential feature of the originality and challenging nature of *Free Fall* is the form in which it unfolds its themes. Themes emerge both sequentially and cyclically, discreetly arising out of subtle correspondences and repetitions that the edits establish in the course of the film. Forgács consciously and consistently undermines any clear hierarchical structure of the film's elements, replacing this with a more democratic form of shifting moments, in which each moment of the film acquires a relative equality. This pertains even to the presentation of key imagery within the film. Although, as the film progresses, certain recurring images become of particular importance in the elaboration of the film's themes, and there is no attempt immediately to impose the larger significance of this imagery within the film upon the viewer's consciousness.

On cognitive level, many of the most poignant images appear and disappear from the screen in a matter of seconds, whilst other less plangent moments may prevail for a longer duration. Only through an acute attentiveness to the associations that arise out of the juxtapositions of commentary and images and the reoccurrences of certain structural units of the film does the viewer begin to decipher the significance of particular passages and their bearing on the film as a whole. The momentum of the film thus centres on the juxtapositions of images and the suggestive relationships of continuity and discontinuity, which these establish with the soundtrack and commentary. Forgács's editing is exceptionally intricate, establishing subtle and complex relations between the diverse components of his found footage films.

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CONCLUSIONS

Cognitive science is committed to the reasonable view that the mind is a representational system, that is, an intentional system that transforms, processes, stores, and retrieves information about the world. The arts are cognitive and a matter of active thinking. The symbol system approach to cognition identifies the different arts as each being a different symbol system, and thinking in the arts as processing, or conducting operations on, the symbols of one of these systems. This establishes the arts as cognitive. It also establishes them as unique because each art medium is a different symbol system, and therefore thinking within each symbol system is a unique kind of thinking.

Cognitive science is based on a non-behaviouristic, psychological framework of research. To understand visual phenomena, behaviour, or language, we need to understand the mechanisms and structures by which these activities are processed by the human mind and brain. Aspects of cognitive research and thinking have their roots in Gestalt psychology and phenomenology. Cognitive science has several philosophical implications. Cognitive science - and not only that subdivision of cognitive science that concerns itself with film theory - is a set of concepts and methods that is opposed to psychoanalysis, behaviourist psychology, post-structuralism and deconstruction. It shares more common ground with Gestalt psychology, phenomenology and structural linguistics. The essentiality of mental processes is typical for cognitive approach. Top-down and bottom-up processes are used by many constructive theories. Gestalt psychology is interested in perceptual organization, which means how we unite things and elements into patterns or objects. Cognitive science is not only interested in the content of mental representations, but also in where this content comes from, because for a mental entity or state to be a representation, it must not only have content, but also it must be significant.

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In cognitive approach the theoretical foundation lies in schema theory. Schemes are expectations or anticipations through which the past influences the future. This whole perceptual process is a perceptual cycle. Schemes are complex types of cognitive structures representing both generic social experiences and cultural knowledge. They contain the common and characteristic features of similar phenomena, for example similar objects, events, situations or discourses, and they exist in the minds of individual subjects as psychic structure, but they are also linked to the historical, social, and cultural realities. Relating this to media content, one can say that daily life experiences are behind the schemes, and they reflect historical, social, and cultural circumstances.

Perception is an active and constructive process. Perception does not come straight from sensory information but is more likely a combination of the interaction between sensory information, internal hypotheses, expectations, and knowledge. The different theories, and scientific approaches to perception have open up horizons in this field. A broader view of perception can see these different approaches as complements of each other, and help us with a better understanding of the whole process. The perceptual laws and other gestalt psychological principles can help and guide us how to organize perceptions into unified patterns and objects. Different perceptions are consequences of different schemes that will change during lifetime, and in the perception of art this seems that the same work of art looks different while to be watched during different periods of life. Perception consists of forming visual concepts, and mental representations, and making an image is like producing representational concepts on the basis of visual concepts. These concepts and representations are structures consisting of essential and special features. Perception is not only the gathering of information or activating the mind and its representations, but it is also foreboding of future per-

ceptions, because visual experience is dynamic, and deals with psychological forces.

The perception of images requires some kind of thinking, comparison, knowledge, experience, and attention. Through experience an observer works toward solution that is highly appropriate, and this process leads into interpretation. Partly the process is unconscious, and that is why an observer sees through image perception the target, and does not consciously think all of his or her choices. When observing an image, one single and special feature can already activate representations of the mind, and lead to the recognition of objects. So, the testing of different hypotheses is not every time necessary. On the other hand, the perception of images is also connected with the understanding of spatial structures and relations, and this kind of understanding requires visual thinking. The historical, philosophical approach to aesthetic deals with what aestheticians have said, styles in aesthetic dialogues, and schools of aesthetic thought. It offers a structured approach, closely resembling the content structure and teaching methodologies found in general education.

This kind of educational and philosophical perspective is compatible with academic rationalism, because it is an intellectualised approach to aesthetics. Aesthetics is a unique form of perception and experience, and the proponents of this approach usually believe that art can provide intense experiences that entail perception of visual and tactile qualities integral to the object being viewed. There are real differences in aesthetics concerning the works of art. Some of them are better than others, and this means something different than that a given person simply likes some works of art better than others. A central conception of cognitive art education is *transfer*, an ability to apply one's learning in new situations. Theoretical problems that develop form assumptions of transfer have been discussed widely

Art is the product of social, and cognitive factors. It is a situation where individuals gain, and apply different strategies towards art through schemes, replacements, forms, and experiences. Schemes are developed through social interaction. Works of art are related to a variety of contexts, including the world they represent, the artist who made them, the audience, and the art world and various aspects of the culture in which they were produced. The major philosophies of art consider these relations crucial for interpretation, and as asset of concentric circles, each containing what the previous one thought relevant and adding something new to it. For contemporary theories of art, the question of what is valuable about art is quite separate from the question how one identifies something as a work of art. Theories of art as a foundation for interpretation provide insights and they entail more work on the part of teacher and student alike. Teachers will have to present works of art in a more studied context, knowing something about the history of art, the art world, and art theories which will better enable them to explain the artist's intentions, theories of art the work rejects or internalises, technique and style. Students will also have to develop grounding in art history, theory and knowledge about the different contexts (cultural, historical) of the work. The artwork does not simply offer a 'reflection of reality', but first and foremost it offers a type of *engagement*: it projects a state of being with the world in which the ineffable finds itself controlled.

The act of seeing necessarily involves associated thoughts, which may briefly replace visual attention. The eyes make many exploratory movements, saccadic glances, which are prompted largely by expectations associated with the preceding glances, or by attraction from conspicuous feature within larger zones. Even in peripheral areas of vision movements swiftly pre-empt attention for obvious bio-functional reasons. Visual and cognitive perception is not only the gathering of information or activating the mind and its representations. It is

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also some kind of foreboding of future perceptions, as cognitive psychology has demonstrated. Visual experience of art is often kinetic, and dynamic, and deals with psychological and imaginative forces.

In film movement draws the eye, and its vectors and trajectories usually override the static (visible) elements of the composition. The contradiction between the pictorial scene and the frame is relegated to a very low-priority awareness, and instead one concentrates on the scene, where the interesting and fruitful information lies. Although the composition of the picture guides our eye, few of the eye's movements reproduce the picture's compositional lines. Nonetheless, the composition looms large in our apprehension, as one keeps encountering its structure. One can never see every possible configuration, or every detail, because our seeing is always selective, and though sometimes one can stay content with the obvious, and pre-coded form, one is also guided by important inputs from non-visual content and context.

In cinematic narration editing depends on knowledge, and implication. The art of editing is the art of anticipating the spectator's expectations and questions, and at a pace to which he or she can readily adapt. In cinematic narration shots contribute to the logic of implication. Logic often implies causality, or some otherwise necessary relationship with determining prescriptions and inexorable consequences, as distinct from looser relationships, influences and tendencies. Usefully it stresses the positivism of the process, the idea that mental constructions are forceful and strong enough to form a structure on which film form (including editing) can rely.

On cognitive level, the problem, for example, of representing history for is bound up with finding another way to write history, one that acknowledges the processes of constructing history; a form of

history that finds a place for history's indeterminacies, in terms of both the limits of representation and the problems that beset our understanding of the temporal. Modes of presentation within the film represent a critical engagement with the question of representation itself. The human mind sets out from several aspects of a task-in-situation simultaneously, and what it offers as a solution to these multiple requirements is the product of convergence from every feature of content, context, function, and goal including desire, wish-fulfilment and fear.

## GLOSSARY OF CRITICAL TERMS[347]

**ANGLE** The positioning of a motion-picture camera so as to view a given scene. A camera may be placed straight on to a scene; or it may be placed at a side angle, high angle or low angle. Many of the early cinematographers failed to recognize the aesthetic values of camera angles. The tendency was to place the camera in a single straight-on, wide angle view of a scene. This was particularly true for filming of action on sets. Early sets tended to be theatrical and flat and, therefore, were limited in the dimensionality that would have allowed angle shooting. To "angle" the camera in the early years of filmmaking meant to risk overshooting the flat theatrical settings. The angle of a shot is regarded to have both compositional and psychological values. It also aids in diminishing the "flatness" or two-dimensionality of a scene by placing scenic elements into an oblique relationship to one another. By so doing, the angle provides a varied perspective of the scene.

**AUTEUR THEORY** A theory that says there is a person primarily responsible for the entire style and treatment of the content of the film. Generally used in reference to a director with a recognizable style and thematic preoccupation. The theory also covers other production personnel (writers, performers, cinematographers, editors) who are seen as the major force behind a given film. More particularly, film auteurs function within the boundaries of studio production systems and are distinguishable from film artists, who have nearly total control over all aspects of production. The auteur theory was first discussed by Francois Truffaut in an article, "Une certaine tendance du cinéma francais," written in 1954 for the French film magazine *Cahiers du Cinéma*. Andrew Sarris, an American critic for *The Village Voice, is* given credit for bringing Truffaut's ideas on auteur criticism to the United States.

**AVANT-GARDE** A movement toward innovation in the arts in the-1920s, encompassing such approaches as cubism, surrealism and dadaism, and including experimentation in filmmaking. Avant-garde is often applied in contemporary criticism to any film, which employs new, original techniques and experimental approaches in expressing ideas on film. The first avant-garde filmmakers produced two general types of films: those which employed techniques commonly associated with the *Dada* and *surrealist* movements in literature and art, and those which were non-narrative and *abstract* in quality. The impetus behind the first film avant-garde movement grew out of a revolt against cinema realism. The filmmakers embraced surrealism because of its "belief in the higher reality of certain hitherto neglected forms of association, in the omnipotence of the dream, in the disinterested play of thought," as stated by surrealism`s spokesman, André Breton. The surrealist movement also provided filmmakers with opportunities for the parody of painting, sex, psychology, contemporary politics, and the motion picture itself. The surrealists seized upon and photographed a variety of material phenomena and arranged these "word pictures" in disparate, illogical ways to effect subjective, dreamlike meanings. They did not want their images to have a mimetic life, but a spiritual life - to become images sprung free from material existence. Man Ray's films *Emak Bakia (1927)* and *L'Etoile de Mer (1928)* and Luis Buñuel's and Salvador Dali's *Un Chien Andalou (1928)* are representative of these surrealist impulses. Surrealism by no means dominated the film avant-garde, either in practice or in theory. Within the movement there was a group of filmmakers who were advocates of *cinéma pur,* "pure cinema": artists who wanted to return the medium to its elemental origins. One of them was René Clair, who wrote in *1927:* "Let us return to the birth of cinema: 'The cinematograph', says the dictionary, 'is a machine designed to project animated pictures on a screen.' The Art that comes from such an instrument must be an art of vision and movement. The cinema purists

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- Clair, Viking Eggeling, Fernand Léger, Hans Richter, among others - were interested in the rhythm, movement and cadence of objects and images within a film - the building of an internal energy through which vision and movement would become both the form and the meaning of the film. The film titles of the cinema purists suggest the musical-like emphasis on animated pictures: *Rhytmus 21, Le Ballet Mécanique, Symphony Diagonale, The March of the Machines, Berlin: The Symphony of a City.* The pure-cinema interests were not limited to rhytmical abstractions alone, but also manifested themselves in the fiction film: in Jean Renoir's adaptation from *1926* of Emile Zola's *Nana,* a film where the original plot is incidental and Renoir abstractly treats Zola's story; in Carl Th. Dreyer's *The Passion of Joan of Arc (1928),* where the ordered use of extreme close-ups produces a spiritual response to the face; and in Jean Cocteau's *Blood of a Poet (1930),* a film made up almost entirely of visual transformations which take place in the mind of the poet.

**BEHAVIOURISM** A form of psychology that analyses human behaviour in terms of stimulus-response mechanisms and that discounts the importance, or even existence, of consciousness and will. It has proved a highly provocative approach, and can easily be caricatured as an attempt to see all human life in terms of the dog that salivates every time a bell rings because it has been conditioned to associate the ringing of a bell with the arrival of food. Behaviourism, however, is capable of rather more sophisticated formulations than this, and remains of interest to film theorists trying to understand the relationships between films and their spectators.

**BLOCKING** The preparatory working out of the *mise-en-scène,* the visual composition of the scenes of a film. It involves planning and rehearsing the positions and movements of the actors, costume, sets, scenery, lighting and the position and set-up of cameras and other equipment.

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**CINEMATIC** A critical term expressing an awareness of that which is peculiar and unique to the film medium. "Cinematic" generally encompasses the full range of techniques available in cinema. When applied to a specific film, the term is used to indicate that the film-maker has employed the editing and visual devices, themes, or structural approaches which are especially appropriate to the medium. "Cinematic" can also be defined historically by examining the innovations of early film artists who sought to break the new medium away from the artistic traditions of the legitimate theater. These innovations - peculiar to the film medium - included the use of camera angles, realistic décor in dramatic setting, mobile camera, naturalistic acting, optical techniques (dissolves, fades, superimpositions, irises), and especially the advantages of cinema editing which allowed (1) variety in the scope of shots, (2) rhythmical control of dramatic action, and (3) the ability to move freely in time and space through editing. "Cinematic" has also been used to describe certain kinds of story material which seem especially suited to the film medium. The chase, for example, is regarded as a narrative element which is peculiarly cinematic. The term has also been used in literary criticism to describe fictional methods which suggest certain affinities with the cinema. Likenesses have been drawn between film techniques and the fictional methods of such writers as James Joyce, Marcel Proust, Virginia Woolf, John Dos Passos, William Faulkner, Gustave Flaubert, and many others. Primarily the cinematic analogy has been used because of these authors' temporal (time) arrangement of their material.

**CLOSE-UP** A shot in which the image of the subject or its most important part fills most of the frame. A close-up shot of a person usually includes the head and part of the shoulders. The close-up has been recognized as a device for (1) directing audience attention, (2) establishing identification with and immediacy for screen charac-

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ters, (3) isolating detail in a scene, (4) creating visual variety in film scenes, and (5) providing dramatic emphasis. Emotions, feelings, and nuances can be suggested by the close-up merely magnifying and isolating an individual in an intensely dramatic moment. Similarly, the close-up view of an object - e.g., a hand or a gun -bestows and conveys dramatic significance which might be lost in longer scenic shots. The duration or length of time that a close-up remains on the screen also has importance as dramatic material. By sustaining close-up shots of a character's face, it is possible for the filmmaker to suggest thoughts and feelings. The French critic André Bazin observed that if an object or person is left on the screen long enough it will begin to lay bare its own reality. This unique perceptual possibility that exists through the close-up is a source of expressive power for the filmmaker as in Carl Th. Dreyer's *The Passion of Joan of Arc* (1928).

**CODE** The rules or forms that can be observed to allow a message to be understood, to signify. Codes are the rules operating on the means of expression (and, thus, are distinct from the means of expression). For example, Christian Metz treated cinema and cinematic text as fields of signification in which a heterogeneity of codes, some specific to the cinema and others not, interacted with one another in ways that were specific, systematic and determinate at certain specified levels of cinematic discourse (individual films, particular genres) and hence at certain specified levels of analysis. Among specifically cinematic codes he distinguished codes of editing and framing, of lighting, of colour versus black and white, of the articulation of sound and movement, of composition, and so on. Non-cinematic codes included costume, gesture, dialogue, characterisation and facial expression. A further distinction was made between cinematic codes and cinematic sub-codes, where the former organise elements potentially or actually common to all films, say lighting, and the latter refer to specific choices made within a particular code, say, that of low-key

in preference to high-key lighting. Codes, therefore, do not conflict, whereas sub-codes do, it being a matter of one choice rather than another. Different codes and their sub-codes are in syntagmatic relation of combination; sub-codes from the same code are in a paradigmatic relation of substitution. For example, Umberto Eco contended that, far from inhabiting a domain below the level of codic organisation, images owe their very existence to the workings of cultural codes, of which no fewer than ten are potentially operative in the communication of the image: codes of perception, codes of transmission, codes of recognition, tonal codes. iconic codes, iconographic codes, codes of taste and sensibility, rhetorical codes, stylistic codes and codes of the unconscious.

**COGNITIVE FILM THEORY** A sub-division or spin-off from cognitive science that explores the similarities and differences between the processing information that takes place in viewing a film and the processing of information that occurs in the non-cinematic environment. A film can be regarded as a simulation of a (possible) real-life situation that engages the viewer's intellect, emotions and body, and that involve a complex negotiation between fiction and reality Key cognitive film theorists include Joseph D. Anderson, David Bordwell, Edward Branigan and Noël Carroll in the USA; Murray Smith in the UK; Gregory Currie in Australia; the Dutch film theorist Ed Tan; and the Danish film theorist Torben Grodal. It is significant, and disturbing, that all of these theorists are male. Although there is no *a priori* reason why women should not become leading exponents of cognitive film theory, it is notable that such theory can, in some instances, take on a crass, stereotypically male, what-nonsense-you're-talking tone. While cognitive film theory is generally seen as opposed to psychoanalysis and to semiotics, a number of European film theorists have attempted to create an approach that combines cognitive film theory and semiotics in a 'cognitive semiotics' of film. These include

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Francesco Casetti, Christian Metz in his *The Impersonal Enunciation* (1995), Roger Odin, Michel Colin and Dominique Chateau. See Warren Buckland, The *Cognitive Semiotics of Film*, (Cambridge University Press, 2000).

**COGNITIVE SCIENCE** A discipline that is concerned to explore and identify the ways in which the human mind comes to know - to cognise - the world through the senses, the mind and the emotions. It draws on biology, psychology and computer science in order to generate models of how human animals process information in order to survive and adapt in the environments in which they live. In contrast to psychoanalysis and post-structuralism, cognitive science tends to be holistic, to see the senses, the mind and the emotions as forming a psychosomatic whole rather than as riven by conflict and in thrall to desire and illusion. It also tends to be ecological, to explore the interaction between human beings, other living organisms, and their environment.

**COMPOSITION** The distribution, balance, and general relationship of masses and degrees of light and shade, line and color within a picture area. The impact of these elements in a film shot depends upon certain psychological and learned facets of visual perception. Lighter objects attract the eye more readily than darker objects; therefore, light can be used as a means of achieving compositional emphasis. Mass, volume, and movement also have importance for emphasis in frame composition. A single figure separated from a crowd will usually stand out as significant. Similarly, a moving actor will draw attention away from static figures. Because of the kinetic nature of the cinema, composition is rarely static, and, hence, emphasis and psychological impact through composition are constantly in a state of flux. A straight-on view of a scene in which actors and objects have been harmoniously arranged so as to fill with equal "weight" all ar-

eas of the screen frame is said to be formally *balanced.* In a deathbed scene., formal composition can be achieved by photographing the scene from a straight-on view taken at the foot of the bed. The placement of a nurse on one side of the bed and a doctor on the other side adds further formality to the scene which would have been lost if both the nurse and the doctor had been placed on the same side of the bed, or if a sharp side angle had been chosen for the camera's positioning. The "balanced" arrangement of characters and objects and the straight-on photography causes the scene to appear "at rest." Whereas formal composition connotes harmony and an at-rest feeling in a scene, a slanted, or *Dutch angle,* shot produces a sense of unrest.

**DECONSTRUCTION** (sometimes called 'deconstructionism' or 'deconstructivism'): An approach to philosophical and cultural analysis primarily associated with the French thinker Jacques Derrida. Deconstruction has three main targets: the idea of a fixed, single meaning, the idea of essence (for example, the view that there is an essential human nature), and the idea of presence (for instance, the idea that Shakespeare speaks to us in his sonnets). The characteristic deconstructive procedure is to examine a text very carefully in order to bring out the ways in which its ostensible or intended meaning is subverted by other meanings that can be discerned in that text, meanings that are often unnoticed, ignored, or relegated to subsidiary or marginal status. It aims to demonstrate that even the most apparently literal text is inevitably invaded by metaphors that destabilise it and lead it into contradiction. The same subversive processes undermine any appeal to essences and presences. A deconstructive approach to film would thus reject *auteur* theory - the idea that the presence of an author-director can be discerned through the marks of his style in a film - and reality theory - the view, associated with Bazin and Kracauer, that sees film first of all in terms of its relation

to reality. Deconstruction would aim to show how any film calls into question its ostensible meanings, its reality-status and its essentialist propositions, and would attend to elements of the film that had hitherto been little discussed or explicitly set aside as unimportant.

**DISCOURSE** The kind of language employed in particular areas of cultural and social activity - for example, in medicine, law, and sexuality. Each discourse has its specialised vocabulary, structure and body of imagery. In the highly influential perspective of Michel Foucault (1926-84), discourses are never simply reflections of reality; rather, they serve to construct the reality that they purport to analyses and to produce a knowledge of that 'reality' that furthers the interests of power and surveillance. For example, discourses of sexuality serve to produce particular categories of behaviour such as homosexuality, and to control sexuality (which does not necessarily mean repressing it). Foucault's ideas have been highly influential in the fields of feminism and of gay, gender and postcolonial studies, all areas in which discourses - about women, about homosexuality, about the 'native' and the 'Orient' - can be analysed in terms of the way in which they construct purported realities and serve the interests of power.

**EMBEDDED SERIES, EMBEDDING SERIES** Terms used by Torben Grodal in his *Moving Pictures*. An embedding series is a dominant narrative sequence within which another narrative sequence - an embedded series - is implied and made at least partly explicit. For example, in a detective thriller that centred around solving a murder, the embedding series would be the narrative sequence of the detective's quest to solve the murder, while the embedded series would be what the detective was trying to reconstruct and make explicit - the sequence of events that led up to the murder and the murderer's subsequent attempts to escape detection. Not all of the implicit details of an embedded series will necessarily be made explicit, however. There

is a famous anecdote that Howard Hawks, while directing the film adaptation (1946) of Raymond Chandler's Philip Marlowe novel *The Big Sleep* (1939), 'once cabled Chandler during the shoot to ask who was supposed to have killed General Sternwood's chauffeur during the original story. Chandler sent back a wire saying "NO IDEA".' (Tom Hiney, *Raymond Chandler.- A Biography* (London: Vintage, 1998), p. 163) The murder of Sternwood's chauffeur was an event in the embedded series of *The Big Sleep,* but even the author of the original novel could not make it explicit.

**ENACTION, ENACTIVE** Terms employed by Torben Grodal in his *Moving Pictures* to indicate a physical and mental preparation for an active response to perceptual, associative and emotional stimuli. 'Me viewer of a film does not usually translate this preparation into action, though this may happen sometimes - as with the audiences who rioted in response to the excitations provided by *The Blackboard Jungle* (1955), which used the song 'Rock Around the Clock' on its soundtrack, and the film *Rock Around the Clock* (1956) itself. Even so, the viewer cannot actually enter and act in the world represented on the screen. Nonetheless, as Grodal says, 'cognitive and "subliminal" motor stimulations of motor schemata exist as underlying, but suppressed and projected, patterns in the viewing situation ... In moments of peak tension during an action-suspense fiction, this muscular pattern will surface as a barely suppressed muscular tension in the viewer aiming at release in physical action.' (Grodal (1997), 48)

**EPISTEMOLOGY** The branch of philosophy concerned with the grounds and nature of knowledge and with the methods of arriving at knowledge. It addresses such questions as: What does it mean to say that we know something? What is the difference between knowledge and belief. Are there different kinds of knowledge - for example, the knowledge that we acquire through experience and the knowledge

that we acquire through a supposedly scientific statement ('The earth goes round the sun')?  In relation to film theory, epistemology can be applied in two main ways.  It can be used to evaluate the claims to knowledge made by film theories themselves, so that, for example, a theory of film that draws heavily on psychoanalysis may be challenged by questioning the status of psychoanalysis as a form of knowledge and pointing to its speculative, untestable nature.  Epistemology can also be used to consider the kinds of knowledge that the viewer acquires from film - is it primarily knowledge of reality, for example, as Bazin and Kracauer might suggest, or knowledge of signifying practices, as a formalist or post-structuralist approach might emphasise?  In what ways does the knowledge that the viewer might feel s/he is acquiring from a film relate to her knowledge that the film is an illusion?  This is a fascinating field that merits further exploration.

**FUNCTIONALISM** The view that cultural practices are to be understood in terms of the functions that they serve in maintaining the existence of a society or a group within a society.  In this perspective, even apparently non-functional practices - artistic or cinematic practices, for example are seen as performing social functions, even if the way in which they do so is not obvious. Hollywood film can be seen, for example, as functioning to maintain the existence of the USA by reinforcing its dominant ideology (even when it may appear to challenge that ideology). When Eisenstein proposes an *'intellectual* cinema of unprecedented form and social functionalism', he wants films that will function to contribute to the revolutionary transformation of society in a socialist direction. The coupling of 'form' with 'function' alludes to a highly influential idea in twentieth-century architecture, summed up in Louis Sullivan's maxim that 'form follows function' - that the functions that a building is to serve should determine its architectural design. A controversial idea within architecture itself, it is interesting to consider how it might be applied to film.

**GAZE** A way of looking at other people that turns them into objects of sensuous and possibly sadistic contemplation. The term has been especially influential in the kind of feminist film criticism that derives from Laura Mulvey. In this perspective, woman, in a patriarchal order, is the *object of the male gaze, and mainstream narrative film reinforces this* order by displaying women as objects for that gaze. The idea of the gaze is closely connected with the idea of covert erotic observation voyeurism - and with what Freud called *Schaulust* (usually translated as 'scopophilia'), the pleasure in looking that is a displaced form of the desire to look fully and frankly at the genitals.

**GESTALT** A branch of psychological theory that argues that the human mind and senses work by perceiving patterned wholes rather than by assembling items of data. Gestalt psychology is interested, for example, in what it calls the 'Aha!' experience - the moment at which what has hitherto seemed a random assembly of data is perceived and understood as a patterned whole (as when, in watching a detective film, the viewer suddenly grasps the whole solution of the mystery). Gestalt psychology was influential in early film theory - in the work of Hugo Münsterberg and Rudolf Arnheim, for instance, which drew analogies between the patterning operations of the mind and the patterning techniques of cinema - but it proved difficult to reconcile with psychoanalysis, post-structuralism and deconstruction, all of which rejected the notion of the whole. Recently, however, it has enjoyed some revival in cognitive film theory.

**HERMENEUTICS** Derived from the ancient Greek word *hermeneus* (an interpreter), hermeneutics means the theory and practice of interpretation- of grasping and explicating the meaning of a text, a cultural practice, or indeed any phenomenon. When a critic provides an interpretation of a film, s/he is engaging in hermeneutics, even if s/he does not consciously use any specific hermeneutic theory. Originally

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the term was concerned with the correct interpretation of the Bible and worked on the assumption that a correct interpretation was possible. Much literary and film criticism has worked on the same assumption and has sought to arrive at the correct interpretation of a poem or movie. Deconstruction and post-structuralism, however, challenge this assumption, arguing that meaning is always contradictory, self-subverting and shifting, and that therefore correct interpretation can never be arrived at; the interpreter can offer only a provisional and transient construction of the meaning of a text. Modern hermeneutics is divided between the view that correct interpretation remains more or less possible and the view that it is never possible. Any film theory, or indeed any film criticism, incorporates an implicit or explicit hermeneutics - a view of whether correct interpretation is possible and of how interpretation is conducted.

**LANGUAGE, LANGUAGE SYSTEM** Unwieldy English equivalents of the French terms *langage* and *langue,* respectively. Cinema is called language, because it is a means of communication, but it is not a language system because it doesn't follow the rules of written or spoken language. Ferdinand de Saussure asked how language works, and the essence of the explanation he gave was that meaning exists only within a system. In contrast to the naive view that language acquires its meaning by reference to a world of things anterior to, or independent of, signification, Saussure argued that meaning derives solely from the system within which particular utterances are articulated. The system, known as *langue,* and actual or potential utterances, *parole,* may be compared to the rule system of chess and to the set of moves that may be actually or potentially played. *Langue* defines both what are permissible or impermissible utterances and what their significance is. In explicating the functioning of language as a system de Saussure distinguished between the signifier and the signified, which together comprise the linguistic sign. The signifier is the actual sound

(or if written, the appearance) of the word; the signified is the concept or meaning attached to it. The essential point is, as de Saussure put it, "in language there are only differences." This so-called 'diacritical' theory of meaning was to prove the single most influental idea operative within film semiotics. Another approach was taken by C.S. Peirce. The Peircean sign points in two directions: on the one hand towards the person to whom it is addressed and in whose mind it creates an idea or secondary sign, called the interpretant, and on the other towards that which it stands for, called the object. A sign thus mediates between the object and the interpretant. Peirce writes: "My language is the sum total of myself; for the man is the thought." Peirce's ideas have been taken into film culture by Peter Wollen, Kaja Silverman, Gilles Deleuze and Teresa de Lauretis. Jacques Lacan's thinking on language had two aspects which were crucial for film theory. The first of these was a Nietzschean conception of language as constitutive: 'the world of words... creates the world of things', 'things only signify within the symbolic order','nothing makes sense until you put a sign on it.' According to Nietzsche, language coerces us into thinking in particular ways through categories that remain largely unconscious. Language, as he famously expressed it, secretes a mythology. By substituting 'ideology' for 'mythology one gets exactly what film theorists took up from Lacan's reading of de Saussure; that film is a language appearing to render the real transparently but actually secreting an ideology. The task therefore was to create a new language. The second aspect was LacaWs conception of meaning as produced in the exchange between the subject and a set of signifiers. Here Lacan modified de Saussure's idea of the linguistic sign by giving primacy to the signifier and by introducing a bar between the signifier and the signified, implying that there is a continual sliding of signifieds under signifiers as these enter into new relationships. Christian Metz thought that cinema is a language without a *langue,* where *langue* is understood in a de Saussurean sense as 'a system of

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signs intended for intercommunication.' The concept of *langue* was inapplicable to cinema for three basic reasons: firstly cinema is not available for inter-communication; next the filmic image is quite unlike the de Saussurean sign, and, moreover, as well as resemblance there is a material link between the image and its object, making it index as well as icon, and therefore motivated. The cinema duplicated rather than articulated reality. And the third reason was that it lacks the double articulation that, according to André Martinet and other linguisticians, is the hallmark of natural language. If cinema is not *langue,* it is nonetheless language, at least 'to the extent that it orders signifying elements within ordered arrangements different from those of spoken idioms - and to the extent that these elements are not traced on the perceptual configuration of reality itself (which does not tell stories), thinks Metz. Cinema transforms the world into discourse, and is not therefore simple duplication. But the semiotics of cinema cannot work at the level of the image, since each image is unique, novel and analogous to reality, with its meaning produced not by its place within a system but by what it duplicates, think Robert Lapsley and Michael Westlake.

**METALANGUAGE** A language in which we talk about language itself, or about the language of a particular field of intellectual inquiry - for example, a metalanguage of film theory would discuss the terms, structures, imagery and other relevant features of the language in which theoretical propositions about film are presented.

**METAPHOR** A term describing the use of imagery by which an analogy can be drawn between one object and an abstract idea so that the two are imaginatively linked. The initial idea is reinforced by its association with a concrete object. Metaphorical associations are possible in cinema through the montage of attraction. As W.C. Fields in *The Dentist (1932)* applies his drill to a patient's mouth, an insert

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cut is made to a construction worker's pneumatic gun tearing at the side of a steel beam. A satirical metaphor is effected. Metaphors in cinema may be of a more extended type than that used in *The Dentist*. In *Battleship Potemkin (1925)* the battleship serves as a metaphor for the entire Russian state under the Czarist regime. Art by its very nature is, as Coleridge called it, *esemplastic* - that is metaphorical. The principal forms by which metaphors are generated are:(1) explicit comparison (epiphor), (2) identity asserted, (3) identity implied by substitution, (4) juxtaposition (diaphor), (5) metonymy (associated idea substituted), (6) synecdoche (part replaces whole), (7) objective correlative, (8) distortion (hyperbole, caricature), *(9)* rule disruption, (10) chiming (parallelism).

**MISE-EN-SCÈNE** This literally means 'putting in the scene', and is a term that can be used of both film and theatre. It refers to all of the elements that contribute to the visual composition of a particular scene on the stage or shot in a film - the position of actors, their actions, their costume, the set, the scenery. *Mise-en-scène* can be analysed as an aspect of the style of a particular auteur-director, as an element of montage or cutting, or as a component of film that is in tension with montage because it invites the director and viewer to linger on particular shots and scenes rather than to cut to other shots and scenes. Eisenstein proposed the term and concept *mise-en-cadre*, 'putting in the frame', as 'a leap from the *mise-en-scène'*, 'a second-stage *mise-en-scène,* when the *mise-en-scène of* changing camera positions **is** superimposed upon the broken lines of the *mise-en-scène's* displacement in space'. But this term does not seem to have caught on.

**NARRATION** Spoken description or analysis of action. Noël Carroll thinks that narration is a form of representation insofar as a narrative describes, and in that sense represents, a sequence of events.

And, of course, film, in its most salient use in our culture, is narrative. 'Classic realism' generally involves at least the use of narration in co-ordination with what are thought of as visual codes of verisimilitude. Typically, a narrative film confronts its audience with a. flow of images or views which are often fragmentary as well as spatially discontinuous. Shots are compounded with shots taken from different camera positions. These views are built up into actions and events, scenes and sequences which, in turn, are worked into whole stories. The question of cinematic narration is the question of the small-scale narrative coherence of films; the question of the ways in which events, scenes, and sequences are constructed from shots and alternating views. Verbal language plays an obvious role in this process. But though one would not dare to say that the role of dialogue, intertitles, and commentary in cinematic narration requires no theoretical investigation, an account of the visual elements in cinematic narration seems perhaps more pressing since it is easy, at least speculatively, to imagine that the shifting views of typical films could result in confusion rather than coherence.

**PACING** The creation of a sense of tempo and rhythm in a film - so that it seems, for example, fast or slow, abrupt or fluid - by the frequency and manner of cutting. For instance, a long take, in which the camera dwells on a particular scene for some time, is likely to create a slower tempo than a succession of short takes that move from one scene to another. A jump cut, in which a middle section of a scene is eliminated by cutting the film or stopping the camera, produces an abrupt, jerky rhythm.

**PERCEPTUAL SALIENCE** A term used by Torben Grodal in his *Moving Pictures*. It means the way in which certain elements of a film will become salient - that is, will stand out more than others - and will make a powerful impact upon the perceiver. For Grodal, salience

is 'the ability of a given fiction to evoke strong experiences and to attract close attention'. (Grodal (1997), 34)

**PHENOMENOLOGY** The philosophical explanation of the modes in which human beings apprehend phenomena, the things of this world. Originated in the earlier twentieth century by the German philosopher Edmund Husserl (1859-1938), it had a considerable influence on mid-twentieth-century European and North American thought, for example in the writings of Jean-Paul Sartre (1905-84)) and Maurice Merleau-Ponty (1908-61), and in the literary criticism of Georges Poulet (1902-91)and J. Hillis Miller (bom 1928) in his pre-deconstructive phase In literary and film theory and criticism, a phenomenological approach can be author or auteur-centred, aiming to infer, from the totality of a writer or director's work, the primary ways in which he apprehends the phenomena of the world; or it can be reception-centred, concentrating on he ways in which readers or viewers apprehend literary works or films. Both André Bazin and Siegfried Kracauer can be seen as phenomenological to some extent in their approach, trying to account for the peculiar sense of presence that film can give the spectator. Phenomenology was displaced for a time by structuralism, post-structuralism and deconstruction; these three approaches tended to ignore the phenomenological dimension or regarded it as an illusion. But phenomenology remains of considerable interest, and has some links with cognitive film theory, although its vocabulary tends to be less (quasi-)scientific and more philosophical, experiential and existential.

**POST-STRUCTURALISM** This approach takes up the structuralist idea that cultural practices are to be seen in terms of structures and systems rather than in terms of human agency; but it rejects the structuralist quest to identify enduring, universal structures. Developing Saussure's notion that the relationship between signifier and

signified is arbitrary, it sees meaning as unstable, constant only in that it is always mobile, subverting any attempt to identify a fixed, underlying system. In a post-structuralist perspective, the belief in fixed meaning is due partly to the desire to maintain the imaginary unity of self that the infant first achieves in the 'mirror stage' described by Lacan, and partly to the wish to ratify existing distributions of power by repressing the possibility of change. Post-structuralism often has a strong political edge, pointing out that what is held to be self-evident common sense is a fragile and questionable ideological production that serves to preserve existing power arrangements. A post-structuralist analysis of a cultural text, such as a film, would examine the ways in which its attempts to present particular meanings were undermined by moments of ambiguity. In many respects, Post-structuralism is close to deconstruction.

**SATURATION** A term used by Torben Grodal in his *Moving Pictures* to indicate a state in which the input/output processing by the viewer of a visual fiction is blocked so that the translation of responses into potential action - into 'a motor attitude' - is suspended. The viewer is thus left saturated, or flooded, by sensations, emotions and images without being able to imagine how s/he might discharge them. Consider a film in which a character loved by the film's protagonist dies: there can be no remedy for this, and the viewer, through an empathic identification with the protagonist, is flooded with sensations, emotions and memories that cannot be translated, even in imagination, into action. It may be possible, however, to mitigate the saturation by some action such as taking revenge, in which case saturation would be succeeded by a mood of tensity, which is a state of arousal that aims at the eventual achievement of a goal that will reduce the arousal - as when, in *The Big Heat* (1953), the detective, Bannion, seeks those responsible for his wife's murder.

**SEMIOTICS** The 'science', or at least study, of signs, originally proposed by the linguist Ferdinand de Saussure (1857-1913). Semiotics analyses the way in which signs, understood in Saussure's term as combinations of signifiers and signifieds, construct meanings in particular cultural and historical situations. A seminal semiotic text is Roland Barthes's *Mythologies* (1957), which analyses a range of signs - on magazine covers and in advertising, for example - and examines the way in which they purvey myths in which socially constructed meanings are turned into supposedly 'natural' ones. For instance, a photograph, on the cover of *Paris-Match,* of a young black soldier saluting the French flag, conveys the notion that France's colonial subjects are 'naturally' loyal to the imperial power. Semiotics has been influential in a range of fields, such as feminism, cultural studies, literary studies, and film studies. In film studies, it has been used to analyse the way in which meaning is constructed through *mise-en-scène,* montage and narrative structure.

**SIGNIFIER/SIGNIFIED** A definition and distinction developed by Ferdinand de Saussure that has been crucial to the development of semiotics and post-structuralism. In Saussure's view, the sign consists of a signifier - a sound or visual mark - and a signified - the mental concept with which a specific signifier has become associated in a particular language. The relationship between signifier and signified is arbitrary - that is, there is no necessary connection between a particular sound/visual mark and a particular mental concept, so that the same sound or visual mark can have different meanings in different languages, or even within the same language. The signified, the mental concept, should not be confused with the particular object to which a sign may refer; such an object is known as a referent.

**STRUCTURALISM** An approach to the analysis of that aims to identify the underlying structures that shape and inform cultural

practices. Its primary model is that of language: all cultural prac-
tices, like language, have a grammar, a syntax and a vocabulary that
determine how meaning is produced. Structuralism is especially
concerned with binary oppositions - good/bad, black/white, man/
woman - and with their permutations through homologies - ways in
which one structure parallels another - and variations. Structural-
ism tends towards the synchronic and the universal - towards seeing
underlying structures as persisting beneath the apparent differences
brought about by time and change, or by cultural variation - and
it challenges the importance of human agency. 'Human beings' are
seen more as products of structures than as producers of structures.
Structuralism is thus sceptical of the idea of the author - or the *auteur*
- as the origin and guiding presence of cultural texts. In a structur-
alist perspective, films are not primarily seen as the products of an
auteur-director; the aim is to identify the implicit structures that give
them meaning, structures that do not depend upon the particular in-
terests of a director. Structuralism has come under attack from both
post-structuralism and deconstruction, which claim that its idea of
underlying structures is too fixed and rigid and fails to acknowledge
the instability of the sign.

**TENSITY** A term used by Torben Grodal in his *Moving Pictures* to
refer to the mood of the viewer of a visual fiction who desires the
achievement of a particular goal in order to reduce his arousal. The
viewer of a detective thriller, for example, will be aroused by the de-
sire to solve the mystery and want the detective, eventually, to achieve
the goal of finding the solution. Tensity can be contrasted with the
mood of saturation, in which a particular goal - for example, the res-
toration of a dead person to life seems impossible to achieve.

# NOTES

## (Endnotes)

[1] Neisser, Ulric (1966), *Cognitive Psychology*. New York: Appleton-Century-Crofts, 4.

[2] Aristotle (1956), *Metaphysics*. Book A,ii.,982aff., 54.

[3] Kuhn, Thomas, S. (1977), *The Essential Tension*. Chicago, University of Chicago Press, 270-77.

[4] Kuhn, Thomas, S. (1969), *The Structure of Scientific Revolutions*. Chicago, University of Chicago Press, 177-191.

[5] Gregory, Richard L. (1981), *Mind in Science: A History of Explanations in Psychology and Physics*. London: Weidenfeld & Nicolson, 161.

[6] Scrutton, Roger (1983), *The Aesthetic Understanding*. Manchester: Carcanet Press, 28.

[7] Wollheim, Richard (1983), "Art, Interpretation and Perception", *Kant oder Hegel: Proceedings of the Stuttgart Conference 1982*. Stuttgart: Kleet-Cotta, 549-559.

[8] Wollheim, Richard (1980), *Art and Its Objects* (2nd ed.). Cambridge: Cambridge University Press, 192-193.

[9] Wolff, Theodore, F & Geahigan, George (1997), *Art Criticism and Education*:Disciplines in Art Education: Contexts of Understanding. Urbana and Chicago: University of Illinois Press, 88-89.

[10] By "cognitive" I mean all mental operations involved in the receiving, storing, and processing of information. The terms "cognitive" and "cognition" include perception and thinking according to this point of view.

[11] Bordwell, David (1985), *Narration in the Fiction Film*. London: Methuen, 27-62.

[12] Flanagan, Owen (1991) *The Science of the Mind* (second edition). Cambridge, Massachusetts: The MIT Press, 179.

[13] Grodal, Torben (1997), *Moving Pictures: A New Theory of Film Genres, Feelings, and Cognition*. Oxford: Clarendon Press..

[14] Wollheim, Richard (1985), "On the question: why painting is an art", in *Aesthetics (Proceedings of the 8th International Wittgenstein Symposium 1983)*. Vienna: Holder-Pichler-Temsky, 101-106.

[15] Persson, Per (2003), *Understanding Cinema: A Psychological Theory of Moving Imagery*. Cambridge: Cambridge University Press, 24.

[16] See, for example, Flanagan (1991), 259.

[17] Pinker, Steven (1988) "A Computational Theory of the Mental Imagery Medium", *Cognitive and Neuropschological Approaches to Mental Imagery*, ed. M. Denis, J. Engelkanp and J.T.E. Richardson, NATO ASI Series, NO.42 Boston: Martinus Nijhoff, 17. 387).

[18] Persson, Per (2003), 7

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[19] Byrne, R. and Whiten, A. Eds. (1988), *Machiavellian Intelligence: Social Expertise and the Evolution of Intellect in Monkeys, Apes and Humans*. Oxford: Oxford University Press.

[20] Johnson, Mark (1987), *The Body in the Mind. The Bodily Basis of Meaning, Imagination, and Reason*. Chicago: Chicago University Press, 104.

[21] Strelny, K. (1990), *The Representational Theory of Mind: An Introduction*. Oxford: Blackwell.

[22] White, A. R. (1990), *The Language of Imagination*. Oxford: Blackwell.

[23] Kosslyn, S. M. (1975), "Information representation in visual images". *Cognitive Psychology*, 7, 341-370.

[24] Tye, M. (1991), *The Imagery Debate*. Cambridge, MA: MIT Press.

[25] Horst, S. W. (1996), *Symbols, Computation and Intentionality: A Critique of the Computational Theory of Mind*. Berkeley: University of California Press.

[26] Andrew, Dudley (1989) 'Cognitivism: Quests and Questions,' *Iris 9* Spring: 1.

[27] As well as differing sharply from psychoanalysis and behaviourist psychology, cognitive science also differs, even more sharply, from post-structuralism and deconstruction. Both post-structuralism and deconstruction are primarily concerned with hermeneutic concepts and practices - in other words, with ideas about the interpretation of texts and the ways in which such interpretation is conducted - and both reject the idea that interpretation can ever arrive at a fixed and definite meaning. In post-structuralism and deconstruction, the notion of 'text' may be extended to cover every apparent phenomenon and practice - a landscape or a football match is as much of a text as a manuscript or printed book - and the meaning of a text can never be finally and definitely ascertained.

[28] See, for example, Gregory, Richard, L (1987), *The Oxford Companion to the Mind*. Oxford: Oxford University Press, 489-490.

[29] Anderson, Joseph, A. (1990), *Cognitive Psychology and its Implications*. New York: W.H. Freeman, 166.

[30] See, for example, Neisser, Ulric (1967), *Cognitive Psychology*. New Jersey: Prentice-Hall, Englewood Cliffs.

[31] Gregory, R. L. (1966), *Eye and Brain*. London: Weidenfeld & Nicolson, 9-11.

[32] Ibidem., 218-219.

[33] Ibidem., 12.

[34] Gregory (1971), 15.

[35] Goldstein , E. B. (1966), *Sensation & Perception*. Pacific Grove: Brooks/Cole Publ., 195.

[36] Hochberg, Julian (1964), *Perception*. New Jersey: Prentice-Hall Inc., 57.

[37] Neisser, Ulric (1976), *Cognition and Reality*. San Francisco: W.H.Freeman and co., 41.

[38] Hochberg, Julian (1968), "In the Mind's Eye", in Haber, Ralph Norman (ed.) *Contemporary Theory and Research in Visual Perception*. New York: Holt, Rinehart and Winston, 309-331.

[39] Ibidem.

[40] Neisser (1976), 55-57.

[41] Ibidem., 20-22.

[42] Höijer, B. (1992), "Socio-cognitive structure and television reception." *Media, Culture & Society* 14, 583-603.

[43] Neisser (1976), 27-28.

[44] Hintzman, D. L., O'Dell, C. S., and Arndt, D. R. (1981), "Orientation and cognitive maps". *Cognitive Psychology* 13: 149-206.

[45] Smith, Ralph, A (1986) *Excellence in Art Education: Ideas and Initiatives*. Reston, VA: National Art Education Association.

[46] For example, a human figure can easily pre-empt attention over scenery, and a face over the rest of the figure.

[47] Neisser, Ulric (1994), "Multiple Systems: A New Approach to Cognitive Theory". *European Journal of Cognitive Psychology*, vol. 6, no. 3., 225-241.

[48] Goldstein (1996), 198.

[49] Julesz, Bela (1975), "Experiments in the Visual Perception of Texture", in *Scientific American*, vol. 232, no. 4, April, 34-43.

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[51] Tarr, Michael (1994), "Visual Representation", in Ramachandran, V. S. (ed.) *Encyclopedia of Human Behavior*, vol. 4. London: Academic Press, 503-512.

[52] Julesz (1975), 42-43.

[53] Treisman (1993), 31-32.

[54] Pomerantz, James, R. (1981), "Perceptual Organization in Information Processing", in Kubovy, Michael & Pomerantz, James, R. (eds.) *Perceptual Organization*. New Jersey: Lawrence Erlbaum Associates, 141-180.

[55] Biederman, Irving (1981), "On the Semantics of a Glance at a Scene", in Kubovy, Michael & Pomerantz, James, R. (eds.) *Perceptual Organization*. New Jersey: Lawrence Erlbaum Associates, 213-253.

[56] Biederman, Irving (1987), "Recognition by components: A Theory of Human Image Understanding", *Psychological Review*, vol. 94, no. 2, April, 115-147.

[57] Ibidem.

[58] Ibidem.

[59] Ibidem.

[60] See, for example, Lawson, Rebecca & Humphreys, Glyn, W. (1996), "View Specifity in Object Processing: Evidence from Picture Matching", *Journal of Experimental Psychology: Human Perception and Performance*, vol. 22, no. 2, April, 395-416.

[61] Marr, David (1982), *Vision: a Computational Investigation into the Human Representation and processing of Visual Information.* San Francisco: W. H. Freeman and co., 34-37, 318-328.

[62] Gregory (1981), 403.

[63] Ibidem., 413-415.

[64] Neisser (1994), 225-237.

[65] Arnheim, Rudolf (1974), *Art and Visual Perception: A Psychology of the Creative Eye.* Berkeley and Los Angeles: University of California Press, 269.

[66] Gregory (1971), 85-87.

[67] Lewis, Michael, B. & Johnston, Robert, A. (1997), "Familiarity: Target Set and False Positives in Face Recognition. *European Journal of Cognitive Psychology*, vol. 9, no. 4, 437-459.

[68] Arnheim, Rudolf (1970), *Visual thinking*, Berkeley: University of California Press.

[69] Ibidem., 14, 37.

[70] Arnheim, (1974), 46.

[71] See, for example, Kahneman, David & Tversky, Amos (1982), *Judgments Under Uncertainty: Heuristics and Biases.* New York: Cambridge University Press.

[72] Gregory, R.L. (1971), *The Intelligent Eye.* London: Weidenfeld & Nicolson, 161-162.

[73] Se, for example, Nakayama, K. Z. J.He, and Shimojo, S. (1995), "Visual surface representation: A critical link between lower-level and higher-level vision", in S. M. Kosslyn and D. N. Osherson, Eds., *An Invitation to Cognitive Science*: vol.2, *Visual Cognition*. Cambridge, MA: MIT Press.

[74] Arnheim (1974), 107.

[75] Ibidem.

[76] Gombrich, E.H. (1982), *The Image and the Eye: Further Studies in the psychology of pictorial representation.* New York: Phaidon Books, 280-284.

[77] Arnheim (1974), 163.

[78] Ibidem.

[79] Ibidem., 164.

[80] Ibidem., 165.

[81] Ibidem., 166

[82] Gregory (1971), 40-42.

[83] Arnheim (1970), 140.

[84] Rock, Irving (1984), *Perception*. New York. Gibson, J.J. (1950), *Perception of the Visual World*. Boston.

[85] Arnheim (1974), 53.

[86] Ibidem., 58.

[87] Ibidem., 55.

[88] Ibidem., 67.

[89] Ibidem., 69-70.

[90] Ibidem., 78.

[91] Ibidem., 63.

[92] Arnheim (1970), 233.

[93] Gregory (1971), 30-32.

[94] Gombrich, E. H. (1987), *Art and Illusion: A Study in the Psychology of Pictorial Representation*. Oxford: Phaidon Press, 218-219.

[95] Persson (2003), 43.

[96] Arnheim (1974), 411-412.

[97] Ibidem., 412.

[98] Ibidem., 419.

[99] Carroll (1988), notes that "computer, a product of human invention, is being exploited by cognitive scientists as a model or analog of the mind ... which is an eminently defensible strategy because having designed computers, we know a lot about them, and we can attempt to extrapolate the wealth of information to mental operations." Noel Carroll, 'Film/mind analogies: the case of Hugo Münsterberg' *in Journal of Aesthetics & Art Criticism*, vol.46, 489-499.

[100] Johnson-Laird, P. (1988), *The Computer and the Mind: An Introduction to Cognitive Science*. Glasgow:Fontana Press, 356.

[101] Johnson, Mark (1987), *The Body in Mind: The Bodily Basis of Meaning, Imagination and Reason*. Chicago: University of Chicago Press.

[102] Lakoff, George and Johnson, Mark (1980), *Metaphors We Live By*. Chicago: University of Chicago Press.

[103] Ibidem., 460.

[104] Ibidem., 48.

[105] Sapir, Edward (1931), "Conceptual Categories of Primitive Language", in *Science*, 74, 578.

[106] Dutton, D. & Krausz, M. (1981), *The Concept of Creativity in Science and Art*. The Hague / Boston / London: Martinus Nijhoff Philosophy Library 6.

[107] Arnheim (1970), 19.

[108] Can theories of mental imagery, conscious mental contents, developed within cognitive science throw light on the obscure but culturally very significant concept of imagination? Three extant views of mental imagery are considered: quasi-picto-

rial, description, and perceptual activity theories. The first two face serious theoretical and empirical difficulties. The third is (for historically contingent reasons) little known, theoretically underdeveloped, and empirically untried, but has real explanatory potential. It rejects the "traditional" symbolic computational view of mental contents, but is compatible with recent situated) cognition and active vision approaches in robotics. This theory is developed and elucidated. Three related key aspects of imagination (non-discursiveness, creativity, and seeing as) raise difficulties for the other theories. Perceptual activity theory presents imagery as non-discursive and relates it closely to seeing as. It is thus well placed to be the basis for a general theory of imagination and its role in creative thought.

[109] Carroll, Noël (2000), *Philosophy of Art; A Contemporary Introduction*. London: Routledge, 32.

[110] Ibidem., 33.

[111] Ibidem., 104-105.

[112] Ibidem., 65.

[113] Ibidem., 80.

[114] Ibidem., 105.

[115] Goodman, Nelson (1976) *Languages of Art: An Approach to a Theory of Symbols*. Indianapolis: Hackett, 40, 143.

[116] Weitz, Morris (1962) The Role of Theory in Aesthetics. In J. Margolis (Ed.) *Philosophy looks at the Arts. Contemporary Readings in Aesthetics* (pp. 48-62). New York: Charles Schribner's & Sons.

[117] Carroll (2000), 117.

[118] Ibidem., 145.

[119] For example, the abilities to categorize visual and tactile characteristics, to see underlying structures, and to perceive principles of design, and to discriminate among design elements are seen as parts of aesthetic study and aesthetic perception.

[120] Intuitive search for spatial unity, supported by locally applied systems of construction, found its final geometrical codification in the principle of central perspective, which was formulated for the first time in the history of mankind in Italy by artists and architects such as Alberti, Brunelleschi, and Piero della Francesca.

[121] Parsons, Michael J. & Blocker, H. Gene (1993), *Aesthetics and Education*. Urbana and Chicago: University of Illinois Press, 122.

[122] Räsänen, Marjo (1998) *Building Bridges: Experiential Art Understanding*. Helsinki: University of Art and Design. 63-83.

[123] Ibidem. 3.

[124] Graham, Gordon (2000), *Philosophy of the Arts: An Introduction to Aesthetics*. (Second Edition). London: Routledge, 49.

[125] Räsänen (1998), 67.

[126] Wimsatt, William K. & Beardsley, Monroe C. (1946), "The Intentional Fallacy", *Sewanee Review* 54. Summer, 468-488.

[127] Graham (2000), 62.

[128] Malraux, André (1953), *The Voices of Silence*. Garden City: Doubleday, 13.

[129] Eliot, T. S. (1932), "Tradition and the Individual Talent," in *Selected Essays 1917-1932*. New York: Harcourt, Brace, 3-11.

[130] Neisser, Ulric (1967), *Cognitive Psychology*. New York: Appleton-Century-Crofts, 94-95.

[131] Polanyi, Michael & Prosch, Harry (1975), *Meaning*. Chicago: University of Chicago Press, 46-65.

[132] Carroll, (2000), 203.

[133] Gardner, Howard (1983), *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.

[134] Congdon, Karen (1986), "The Meaning and Use of Folk Art Speech in Art Criticism". *Studies in Art Education*, 27(3). 140-148. Hamblen, Karen (1986) "Exploring Contested Concepts for Aesthetic Literacy". *Journal of Aesthetic Education*, 20(2).67-76.

[135] Kindler, A. (1994), "Artistic Learning in Early Childhood: a study of scial interactions". *Canadian Review of Art Education*, 21 (2), 99-106.

[136] However, the term "mental imagery" may be potentially misleading in itself. For one thing, all these expressions suggest, more or less strongly, a purely visual phenomenon. In fact, most discussions of imagery, in the past and today, have indeed focused upon the visual mode. Nevertheless, there is every reason to believe that other modes of quasi-perceptual experience are just as common and important, and "imagery" has come to be the accepted scientific term for referring to them too: interesting studies of "auditory imagery", "kinaesthetic imagery", "haptic (touch) imagery", and so forth, can be found in modern psychological literature.

[137] Mitry, Jean (1980), *Esthétique et psychologie du cinéma,* vol. I. Parus: Editions Universitaires. 19.

[138] Ibidem., 15.

[139] Durgnat, Raymond (1970), "Art and Audience", *The British Journal of Aesthetics*, Vol. 10, No. 1, January, 18.

[140] Münsterberg, Hugo (1970), (first publ. 1916), *The Film: A Psychological Study*, 53.

[141] Lewis, Brian (1984), *Jean Mitry and the Aesthetics of the Cinema*. Michigan: Umi Research Press, 51.

[142] Koestler, Arthur (1964), *The Act of Creation*. London : Hutchinson, 390.

[143] Danto, Arthur, C. (1981), *Transfiguration of the commonplace: A philosophy of art*. Cambridge, MA: Harvard University Press.

[144] Ibidem., 108.

[145] Wooster, Ann-Sargent (1995), "Reach Out and Touch Someone", in *Illuminating Video: An Essential Guide to Video Art*, Doug Hall and Sally Jo Fifer (eds.), Aperture in Association with the Bay Area Video Coalition.

[146] Ibidem.

[147] Crane, Tim (2001), *Elements of Mind: An Introduction to the Philosophy of Mind*. Oxford: Oxford University Press, 130-131.

[148] See Arnheim, Rudolf (1974) (Orig. 1960), *Art and Visual Perception*. Berkeley: University of California Press; Ehrenzweig, Anton (1963), *The Psychoanalysis of Artistic Vision and Hearing*. London: Routledge & Kegan Paul; Gombrich, Ernst (1960), *Art and Illusion*. New York: Pantheon Books; Kepes, György (1966) *Sign, Image, Symbol*. London: Brazilier.

[149] Arnheim (1970), 374.

[150] MacKay, Donald (1969), *Information, Mechanism and Meaning*. MIT Press, 24.

[151] Ibidem.

[152] Ibidem.

[153] A simple example includes a dotted line which is the *phantomisation* of a continuous line through a row of dots.

[154] Münsterberg, Hugo (1916), *The Film: A Psychological study*. New York: D. Appleton, (1970), New York: Dover Publications.

[155] Ibidem., 58.

[156] Ibidem.

[157] Ibidem., 88-90.

[158] Carroll, Noël (1988), "Film/mind analogies: the case of Hugo Münsterberg" *in Journal of Aesthetics & Art Criticism*, vol.46, 489-499.

[159] Andrew, Dudley, J. (1976), *The Major Film Theories: An Introduction*. Oxford: Oxford University Press, 20-21.

[160] Carroll (1988).

[161] Ibidem.

[162] Andrew (1976), 23-24.

[163] Carroll (1988).

[164] Bordwell, David (1989), *Making Meaning: Inference and Rhetoric in the Interpretation of the Cinema*. London: Harvard University Press, 8-9.

[165] Ibidem.

[166] Durgnat (1984), 97. See also about cinematic syntax, Sharff, *The Elements of Cinema*, 21-35, and the chapter "*Form*" in Arnheim's *Art and Visual Perception*.

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[167] Durgnat (1984), 97.

[168] See Arnheim (1974), 135.

[169] Ibidem., 136-141.

[170] Whittock, Trevor (1990), *Metaphor and Film*. New York: Cambridge University Press, 13.

[171] Gregory (1981), 420.

[172] Ibidem., 416.

[173] Arnheim (1974), 140.

[174] Gombrich, E. H. (1970),"The Mask and the Face: the Perception of Physiognomic Likeness in Life and Art", *Art, Perception and Reality*. Baltimore: The Johns Hopkins University Press, 13.

[175] Ibidem., 12-24, see also Hochberg's article "The Representation of Things and People" in the same book.

[176] Hochberg, Julian (1970), "The Representation of Things and People", in *Art, Perception and Reality*. Baltimore: The Johns Hopkins University Press 77.

[177] Ibidem., 78.

[178] Ibidem., 89.

[179] Gregory, Richard, L (1970), *The Intelligent Eye*. London: Weidenfeld & Nicolson, 174.

[180] Arnheim,(1970), 156-162.

[181] Arnheim (1974), 250.

[182] Ibidem., 251.

[183] Ibidem., 253.

[184] Ibidem., 261.

[185] Hochberg, Julian (1978), *Perception*. New Jersey: Prentice-Hall, 40.

[186] Ibidem.

[187] Vernon,M.D. (1962), *The Psychology of Perception*. Middlesex: Penguin Books, 140.

[188] Ibidem.

[189] Hochberg, Julian & Brooks, Virginia (1996), "Movies in the Mind's Eye," in Bordwell, David & Carroll, Noël (eds.) *Post-Theory: Reconstructing Film Studies*. Madison: The University of Wisconsin Press, 368-387.

[190] See Gibson, J.J.(1950), *The Perception of the Visual World*, Chapter seven. Boston: Houghton Mifflin.

[191] Vernon (1962), 159.

[192] See about audience research, for example, in Schröder, Drotner, Kline & Murray (2003), *Researching Audiences*, London: Arnold.

[193] Gibson, J. J. (1979), *The Ecological Approach to Visual Perception*. Boston: Houghton–Mifflin.

[194] Durgnat, Raymond (1990), "The Long Take in Voyage to Cythera: Brecht and Marx vs. Bazin and God", *Film Comment*, November-December,, 43.

[195] Ibidem.

[196] Ibidem.

[197] Horton, Andrew (1987), "Theodor Angelopoulos and the New Greek Cinema," *Film Criticism*, Vol. XI, Nos. 1-2, Fall-Winter, 88.

[198] Durgnat (1990), 43.

[199] Benjamin, Walter (1969), *Illuminations*. ed. by Hannah Arendt. New York Schocken Books, 239.

[200] Sharff, Stefan (1982), *The Elements of Cinema: Toward a Theory of Cinesthetic Impact*. New York: Columbia University Press, 6.

[201] Durgnat (1990), 44.

[202] See, Jameson, Fredric, "Theo Angelopoulos: the past as history, the future as form", in Horton, Andrew (1997) (ed.), *The Last Modernist: The Films of Theo Angelopoulos*, Flicks Books, Wiltshire, 78-95.

[203] See Horton, Andrew (1997) (ed.), *The Last Modernist: The Films of Theo Angelopoulos*, Flicks Books, Wiltshire; Horton, Andrew (1997) *The Films of Theo Angelopoulos: A Cinema of Contemplation*. New Jersey: Princeton University Press, Princeton..

[204] Arnheim (1974), Gregory (1990).

[205] Hollander, Anne (1989), *Moving Pictures*. New York: Alfred A. Knopf, 20-21.

[206] Bender, R. & Mangels, J. (1992), "Looking at Pictures, but Remembering Scenes," *Journal of Experimental Psychology: Learning, Memory and Cognition* 18, 180-191.

[207] See Arnheim (1974), 288, 293.

[208] Grodal, Torben (1997), *Moving Pictures* 59.

[209] Ibidem.

[210] Aumont, Jacques (1987), *Montage Eisenstein*.London: BFI, 26-72.

[211] Grodal (1997), 59.

[212] Grodal calls this effect ' saturations'.

[213] Grodal (1997), 59.

[214] Arnheim (1970), 13.

[215] Ibidem.

[216] Merleau-Ponty, Maurice (1962), *Phenomenology of Perception*, Routledge and Kegan Paul, London, 21.

[217] Ibidem.

[218] Ibidem., 36-37.

[219] Ibidem., 38.

[220] Hanson, N. R (1958), *Patterns of Discovery*, Cambridge, 7–8.

[221] Ibid, 19.

[222] Gregory, Richard, L. (1981), *Mind in Science: A History of Explanations in Psychology and Physics*. London: Penquin Books,(reprinted 1988), 388.

[223] Arnheim(1970), 13.

[224] Ibidem., 14.

[225] Valkola, Jarmo (1993), *Perceiving the Visual in Cinema: Semantic Approaches to Film Form and Meaning*. Jyväskylä: Jyväskylä Studies in Art, 42, 20.

[226] Sobchack, Vivian (1992), *The Address of the Eye: A Phenomenology of Film Experience*. New Jersey: Princeton University Press, Princeton, 72.

[227] Ibidem., 73.

[228] Arnheim,(1974),15.

[229] Kraft, R. N. (1987), "The Influence of Camera Angle on Comprehension and Retention of Pictorial Events," *Memory and Cognition* 25, 291-307.

[230] See, for example, Carroll, Noël, *Mystifying Movies: Fads and Fallacies in Contemporary Film Theory*, Columbia University Press, New York 1988; Carroll, Noël, *Theorizing the Moving Image*, Cambridge University Press, Cambridge 1996; Bordwell, David, *Narration in the Fiction Film*, University of Wisconsin Press, Madison 1985.

[231] Routila, Lauri, Olavi (1986), *Miten teen tiedettä taiteesta*. Keuruu: Clarion, 22.

[232] Taylor, Gordon, Rattray (1979), *The Natural History of the Mind*. London: Secker & Warburg, 258.

[233] Carroll (1988), 199.

[234] Lewis, Brian (1984), 115.

[235] Mast, Gerald (1977), *Film/Cinema/Movie: A Theory of Experience*. New York: Harper & Row, 25.

[236] Ibidem.

[237] This kind of emphasisis can be found in the semiotic thinking of Juri Lotman.

[238] Whittock (1990), 20-21

[239] Lotman, Juri (1976), *Semiotics of cinema*. Michigan: University of Michigan, 41.

[240] Ibidem., 3.

[241] Sharff (1982), 9.

[242] Durgnat (1983), 8.

[243] Sobchack, Vivian (1994), "Phenomenology and the Film Experience", in Williams, Linda (ed.) *Viewing Positions: Ways of Seeing Film*. New Jersey: Rutgers University Press, 41.

[244] Bell, Clive (1958), *Art*. New York: Capricorn.

[245] Carroll (2000), 110)

[246] Ibidem.

[247] Durgnat, Raymond (2003), Psaume Rouge, in Feigelson Kristian avec Jarmo Valkola (eds.) *Cinéma hongrois, le temps et l'histoire*, Théorème. Paris: Presses Sorbonne Nouvelle, 111.

[248] Petrie, Graham (1998), *Red Psalm*. London: Antony Rowe, FB, 26.

[249] Thompson, Kristin & Bordwell, David (2003), *Film History: An Introduction*, (2nd edition) London: McGraw Hill, 465.

[250] Petrie (1998), 30.

[251] Durgnat, Raymond (2003), Psaume Rouge, in Feigelson Kristian avec Jarmo Valkola (eds.) *Cinéma hongrois, le temps et l'histoire*, Théorème. Paris: Presses Sorbonne Nouvelle, 120.

[252] Ibid.

[253] Grodal (1997), 5-6.

[254] Ibidem.

[255] This compilation after Tredell (2002).

[256] Grodal (1997), 5-6.

[257] Tredell (2002), 207.

[258] Ibidem.

[259] Ibidem.

[260] Ibidem., 279.

[261] Ibidem., 280.

[262] Ibidem., 131.

[263] Tredell (2002), 214.

[264] Bordwell (1986), 36. This also after Elsaesser & Buckland (2002), *Studying Contremporary American Film*. London: Arnold.

[265] David Bordwell's *Narration in the Fiction Film* pioneered the cognitive theory of film, which flourished in the 1990s with books such as Joseph Anderson's *The Reality of Illusion* (1996), Edward Branigan's *Narrative Comprehension and Film* (1992), Gregory Currie's *Image and Mind (I 995)*, Torben Grodal's *Moving Pictures* (1997), Carl Plantinga and Greg Smith's (eds) *Passionate Views* (1999), Murray Smith's *Engaging Characters* (1995) and Ed Tan's *Emotion and the Structure of Narrative Film* (1996).

[266] 'The theory I advance attends to the perceptual and cognitive aspects of film viewing. While I do not deny the usefulness of psychoanalytic approaches to the spectator, I see no reason to claim for the unconscious any activities which can be explained on other grounds' (Bordwell 1985: 30).'

[267] Nearly all story-comprehension researchers agree that the most common template structure can be articulated as a 'canonical' story format, something like this: introduction of setting and characters state of affairs - complicating action - ensuing events - outcome - ending. (Bordwell 1985: 35)

[268] Branigan (1992), 17.

[269] Ibidem., 18.

[270] See Bordwell (1989), 3.

[271] Arnheim, (1970), 140.

[272] Ibidem.

[273] These views are extensively due to Nicolas Tredell's (2002) handling of them in *Cinemas of the Mind*, London: Icon Books.

[274] Valkola, Jarmo (2000), *Aesthetic & Cognitive Perceptualism: Signs, symbols, and Concepts in Art Educational Context*. JULPU: University of Jyväskylä, 100-102.

[275] Personally Tarr admires the work of Bresson, Ozu, Cassavetes, and Fassbinder.

[276] Orr, John (2001), "Béla Tarr circling the Whale". *Sight & Sound*, April 2001.

[277] Aumont, Jacques, Bergala, Alain, Marie Michel, Vernet, Marc (1992), *Aesthetics of Film*. Austin: University of Texas Press, 162.

[278] Lynch (1996), 35.

[279] Tarkovsky (1986), 108.

[280] Ibidem.

[281] Petric, Vlada (1989-90), "Tarkovsky's Dream Imagery". *Film Quarterly*, Vol. 43, No. 2, Winter, 32.

[282] Delluc, Louis, quoted in Stuart Liebman (1983), French Film Theory, 1910-1921," *Quarterly Review of Film Studies*, 4, no. 1, Winter 1983, 12.

[283] Wees, William, C. (1992), *Light Moving in Time: Studies in the Visual Aesthetics of Avant-Garde Film* Berkeley: University of California Press, 12.

[284] See, Rosenbaum (1995), 58.

[285] Gibson, J. J. (1979), *The Ecological Approach to Visual Perception*. Boston: Houghton–Mifflin.

[286] Benjamin, Walter (1969), *Illuminations*. ed. by Hannah Arendt, Schocken Books, New York, 239.

[287] Exposition, description, and narration are three major classes of discourse. Narration applies to "stories", that is, chronological states involving alternative possibilities. Description covers states and systems (such as cycles) where choronology is non-alternative, secondary, or non-existent. Exposition applies to slightly more complex configurations of considerations. The structure of discourse usually incorporates aspects of the structure of subject. But, particularly when the subject has no particular structure, or several structures, the discourse devises its own order. Even when the subject matter is clearly structured, -he structure of the discourse may be designed to gear into the present structure of ideas in the target audience.

[288] Walsh, Michael (1989), "Around the world, across all frontiers: *Sunless* as depays". *CineAction!*, Fall, 30.

[289] The French filmmaker Chris Marker (Christian Francois Bouche-Villeneuve) was born in Neuilly sur Seine on 29.7.1921.

[290] He is, in addition to being a director and screenwriter, a novelist, poet, play writer and journalist. He formed the SLON film co-operative (*Société pour le lance-*

*ment des oeuvres nouvelles*, 1967), which is one of the leading political film co-opera-
tives still operating in France. At the 1961 Berlin Festival for *Description dun combat*,
he was the recipient of the Golden Bear, and he also received the International
Critics Prize, for *Le joli Mai* in 1963. Marker's movies have taken the form of per-
sonal essays, combined with the genre of documentaries. He began his carrier
by writing poems, essays and translations, and he also worked as a journalist. He
founded the *Edition du Seuil's petit planete series*, which is series of books gener-
ally photographed and each devoted to a particular country, combining subjec-
tive experiences and historical fact. Marker writes his films himself and is also
the cinematographer in many of them. The films contain verbal and visual images
with philosophical speculation and erudition. The commentaries he creates to ac-
company the film-images come close to streams of consciousness and they can
be very poetic. The poetry of the text combines with rather subjective seeing and
hearing experiences. The philosophical background apparent in many of his films,
for instance the script of *La.letée* (1962) follows the lines of French philosophical
tradition. It especially draws from the philosophy of memory and time, which are
central issues in works from Henri Bergson to Marcel Proust and in the *noveau ro-
man*. The issues of memory combine Marker's work to films dealing with specific
view on temporality, like Hitchcock's *Vertigo* or Resnais' *Je t'aime je t'aime*. After
the war, Marker joined the staff of *Esprit* journal, where he wrote political com-
mentaries, poems, articles and film reviews. He formed the so called Left Bank
Group of the New Wave French directors together with director Alain Resnais,
novelist Jean Cayrol and co-editor Henri Colpi, all of whom often contributed to
each others films. In 1952, Marker made his first full-length 16 mm movie *Olympia
52*, about the Helsinki Olympic games. The next year he made a humanistic study
of African art (*Les statues meurent aussi*) and its decline under colonialism, together
with Alain Resnais. Marker is a world traveller, and he has always been interested
in transitional societies. The films and documentaries that Marker makes are not
only representations of these chosen places, they also represent the cultures of
those places. Amongst Finland, and Africa, Marker has perceived in his works also
China ((Dimanche à Pekin, 1956), Soviet Union and Russia (*Lettrè de Sibérie*, 1958,
*Le Train en marche*, 1971, *Le tombeau d'Alexandre*, 1993), Cuba (*Cuba si*, 1963, *La Ba-
taille de six millions*, 1970), Israel (*Description d'un combat*, 1960), France (*Le Joli Mai*,
1962) and Japan (*Le Mystère Koumiko*, 1965, *Sunless*, 1982). He has also done instal-
lations, CD-ROMs (Immemory) and portrait documentaries on Akira Kurosawa,
Christo, Andrei Tarkovsky and Simone Signoret.

[291] Marchessault, Janine (1986), "Sunless". *CineAction!,* Spring, 3.

[292] Nichols (2001), 102.

[293] Ibidem.

[294] Ibidem.

[295] Ibidem., 103-104.

[296] Narita, for instance, was the site of ideological confrontations in the 1960s, whilst Okinawa was the location of one of the most harrowing battles of the Second World War.

[297] See, for example, Pourvali, Bamchade (2000), "Chris Marker, cineaste inclassable" *Théorème – Recherches sur Chris Marker.* Paris: Presses Sorbonne Nouvelle, 115-116..

[298] Rosenstone (1995), 156.

[299] Kear (1999), 15.

[300] The prime example is *Lettre de Sibèrie* (1957).

[301] Sturken & Cartwright (2001), 99.

[302] Walsh (1989), 32.

[303] See, for example, Shiel, Mark & Fitzmaurice, Tony (2001), *Cinema and the City: Film and Urban Societies in a Global Context.* London: Blackwell, 5-10.

[304] These images that invoke the queues of spectators buying tickets for admission to the cinema.

[305] Walsh (1989), 33.

[306] Branigan (1992), 216..

[307] Jenkins, Steve (1984), "Sunless (Sunless)" *Monthly Film Bulletin*, July, 196.

[308] Lyotard, Jean-Francois (1993), *The Postmodern Explained.* Minneapolis: Minnesota University Press, 9.

[309] Hochberg (1978), 16.

[310] Durgnat, Raymond (1972)," The Fantastic Voyage" in *Symposium Humanities*, n: o 1, Winter issue.

[311] Sharff (1982 ).

[312] Berger, John (1985), "The Moment of Cubism," in *Sense of Sight.* New York: Pantheon, 171.

[313] Two films exist which depend on the indistinguishability of separate shots on different planets, Robert Parrish's *Doppelganger* (1969), and Andrei Tarkovsky's *Solaris* (1972).

[314] Durgnat (1983),2.

[315] Ibidem., 64.

[316] Ibidem., 119.

[317] Vernon (1962), 222.

[318] J.M. Wilding uses the terms *holistic* and *analytic* processing: see Wilding, J.M. (1982) *Perception:From sense to object.* London: Hutchinson, 80-81.

[319] Ibidem.,79-91.

[320] Hochberg (1978),, 60.

[321] Durgnat, Raymond (1983), "Through the Looking Sign", *Quarterly Review of Film Studies*, Fall, 6-7 (offprint). Durgnat thinks that theoreticians like Arnheim gain a powerfully dynamic and sensual way of analyzing pictorial forms.

[322] Ibidem.

[323] See Wilding, J.M. (1982), *Perception: From sense to object*. London: Hutchinson, 49.

[324] Durgnat, Raymond (1984),"Mind's Eye, Eye's Mind: Transformation by Context", *Quarterly Review of Film Studies*, Spring, 94.

[325] Ibidem. Further on Durgnat thinks that sound introduces an intriguing paradox, because sound is informationally less rich than light. Sound relates primarily to the vibrations of physical *substances* (a lenght of catgut, etc.) whereas light is infinitely more responsive to the surface features of indivisual objects. By and large, therefore, light, and sight, are richer in information about the outside world.

[326] Durgnat uses an example for analysis, it is a still from Michelangelo Antonioni's film *Cronaca di In Amore* (1951), which gives possibilities for fifferent kinds of point-of-view variations and also for many ways of interpreting a picture. See Durgnat (1983), 7.

[327] Ibidem., 6.

[328] Elsaesser, Thomas (1988), "Games of Love and Death – or an Englishman's guide to the galaxy." *Monthly Film Bulletin*, vol, 55, n:o 657., 291.

[329] Walker, John, A. (1993), *Art & Artists On Screen*. Manchester: Manchester University Press, 119.

[330] Corner, James (1992), "Representation and landscape: drawing and making in the landscape medium," *Word & Image*, Vol. 8, No. 3, July-September, 247.

[331] Ibidem.

[332] Heidegger, Martin (1975), *Building, Dwelling, Thinking, Poetry, Language, Thought*, trans. and intro. by Alfred Hofstadter. New York: Harper and Row, 156.

[333] Corner (1991), 249.

[334] Woods, Alan, (1996), *Being Naked Playing Dead: The Art of Peter Greenaway*. Manchester: Manchester University Press,, 45–46.

[335] Ibidem., 46-47.

[336] Burch, Noël (1981), *Theory of Film Practice*. New Jersey: Princeton University Press, 34.

[337] Ibidem.

[338] Durgnat (1983), 7.

[339] See Braudy, Leo (1977), *The World in a Frame, What we see in Films*. New York: Anchor Paperbacks, 23.

[340] Ibidem.

[341] Durgnat (1983), 8.

[342] Durgnat (1984), 93.

[343] Persson (2003), 43.

[344] Odin, Roger (2003), "*La famille Bartos* de Péter Forgács, ou coment rendre 'histoire sensible" in Feigelson Kristian avec Jarmo Valkola (eds.) Cinéma hongrois, le temps et l'histoire, *Théorème*. Paris: Presses Sorbonne Nouvelle, 193-207.

[345] Nichols, Bill (2003), "The Memory of Loss: Péter Forgács's Saga of Family Life and Social Hell." *Film Comment*, Vol. No. 56 issue no. 4, 4.

[346] See on found footage, for example, Wees, William, C. (1993), *Recycled Images*. NY: Anthology Film Archives.

[347] This compilation after Tredell (2002), and Valkola (1993).

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