

The Arrow of Time

© Seppo Oikkonen 2004

Translated by Andras Lahdelma 2014

1.

When looking at the character string [////] with enough imagination, one could experience it as being in motion. This is because it is inclined to the right, and as Europeans we read from left to right - there's a certain dynamic allowing us to personify characters. Similarly, we experience this [\\\\] to represent some sort of a backward movement, a reversal, or possibly a change of level: a descent, etc. The arrow-tip figures [>] and [<] are used not only to symbolize direction but also, e.g., to express greater-than and less-than relations in mathematics. Are such symbols generated by coincidence, or can their form be reduced to some fundamental structural factors of our visual observations, to elementary visual units? After all, research in perceptual psychology has suggested that the picture built up by our brain of the reality we see consists exactly of such fragmentary forms, elementary structural units that are perceived separately and, as it were, glued together to form a single overall picture in a later processing phase. If a blind kitten opens its eyes and it is raised in an experimental room with only selected influences, for instance in a room in which all vertical lines are absent, it will never learn to perceive such lines. In reality it will constantly bump into chair legs, door posts, etc. Similarly, it has been observed that eye injuries suffered as a newborn or at a very early stage of development may render human beings "blind" to very specific forms for the rest of their lives. As if the elementary structural units of seeing had each their own sensitive periods of development in which quite specific stimuli are needed to produce the relevant ability of perception.

Such considerations are not confined to developmental or perceptual psychology but extend to philosophy of knowledge. If structural factors determine the qualities of our sensations, we perceive the world on terms of the atomic structural parts of our observations. The "meaningfulness" of the world is our own experience of the pieces fitting together as we get an overall picture of something that we call reality. However, the atomistic pieces characteristic of the structure of our senses are responsible for the selection of the incoming material of our sensations, and it could well be that our human consciousness is very limited when compared to an ideal "objective" reality. Anyway, we are unable to perform such a comparison. Yet we can deduce our own limitations from the fact that we have looked on phenomena and the natural laws controlling them very differently in different ages. Our own ways of comprehending the world as a dynamic whole have varied - the interfaces, starts and ends of phenomena, our visions of natural forces, causal thinking - the best purpose of a history of thought would be to map these ways in which certain thought arrangements characterize a given civilization and how these arrangements change. These might be the exact points at which our European history of thought deviates from what is going on in the rest of the world, and not only historians but also the philosophers of knowledge who analyse our current way of thinking should come to realize that the "given" premises of their reflections crave for their structural, developmental psychological and developmental historical background. Maybe someone should promptly throw down the gauntlet at the eyes of the philosopher of knowledge and ask them to view what they see. Bright flashes, stars, stripes, sawtooth patterns etc. might represent something far more essential and significant in their relation to reality than accuracy-oriented chains of logical reasoning built upon fundamentally vague concepts.

With the proper amount of imagination, the arrow-tip character [>] could be experienced as a perspective, in which case the arrow-tip would be the perspective's vanishing point. In the foreground everything looks bigger, and everything diminishes when moving further away. The impression of magnitude creates the impression of depth, or is in any case related to it. Perception of the depth perspective probably requires similar elementary visual units as those contained in the arrow-tip figure. It is said that human sight is three-dimensional because our two eyes are sufficiently close to each other to look in the same direction, yet sufficiently far from each other to look at the same object from slightly different angles. We have stereo sight as well as stereo hearing - we know the direction from which a sound is coming because it enters one ear at a slightly different time than the other. As it is difficult for a one-eyed person to perceive depth, a person with single-sided hearing cannot guess the direction of sounds. On occasions, one-eyed persons may bump into things constantly like the experimental cats. A person with single-sided hearing in turn looks frantically in every direction when alerted by a car horn. If one were both one-eyed and half-deaf, one could not tell the direction in which an approaching car is closer and which car has beeped.

But these are not the only problems related to the perception of perspective. Humans have always had two eyes, but perspective has not always been perceived in the same way. We know strange things about early European man. For some reason the lack of the depth dimension seems to characterize many ancient cultures from which pictures have been preserved. For instance, the fact that humans were regularly represented from only selected points of view and in a peculiar way could point to the peculiarity of spatial perception. It was typical to depict the head in profile and the body from the front. It must be noted that humans never appear in such a position in nature. The question is: did such a division of the human being occur based on elementary units of perception, or does the drawing of a two-dimensional picture pose some special performance problem? The world is three-dimensional, the image surface is two-dimensional - and between them there is a problem concerning our entire cognition. The production of three-dimensional objects, even art objects, idols or statues was not a problem, but the drawing of a picture was. Even in ancient Greek reliefs some figures are still presented in a primitive drawing perspective. Did a strangely depicted human look "realistic" in the eyes of the humans of early cultures? Human interaction with the world is two-way -- aren't our entire cognition, perception, mental images and their externalization involved in any case? Landscape pictures were not made, and only one surface was depicted of objects appearing in pictures of situations. An Assyrian picture of a horse chariot couldn't have served as a construction plan. Or maybe it could? Who knows?

Such typical ancient pictures are, by the way, no historical curiosities. Loads of them can be found in the nearest nursery. The same rudiments of figure-formation can be found in children's drawings as in the visual arts of ancient cultures. Children also do not have a sense of perspective. Children draw e.g. human faces always from the front, starting with a round head, followed by the eyes and the mouth and then by two ears. Isn't there a stage of profile drawing before one acquires the skills needed to depict the human face from the dynamic middle ground between these extreme viewpoints?

There is some connection between the perception of perspective, the perception of the depth dimension, the expression of psychic movement and dynamic and, ultimately, the sense of time - physically, the time dimension. This connection is two-fold. Firstly, it can be observed in the history of the human species, in which, at least from a European perspective, perspective is found in the visual arts roughly at the same time when people start to measure time and orientate accordingly in their everyday lives - i.e., after the Middle Ages, at the dawn of the rebirth, the Renaissance. Secondly, the same connection can be found in the cognitive development of today's children. How do these two, the sense of perspective and the sense of time intertwine? What is the developmental content repeated in both the historical and the developmental psychological aspect?

Seemingly, these perceptions are of totally different nature. One would not necessarily expect place and time to have anything to do with each other. But why do so many documentable facts seem to interconnect these things, then? If we could somehow map the weavings of our mind in which place and time intertwine, wouldn't it quite decisively increase our self-understanding? Maybe thereafter we would be able to see more clearly how other civilizations, whose prevailing psychic dynamics and elementary units of perception, signalling characters and notion of time as a part of the whole of cognition can possibly be fundamentally different from ours, differ qualitatively from our European kind of thought?

It would be important to dig out and emphasize such cultural and national differences, because the globalization of the world has given rise to dangerous blindness. Supranational market economy based on tightening competition is used as a basis to evaluate all the nations and people of the world within the framework of the same monetary thinking, and it forces virtually everyone to challenge each other. In this competition there are only apparent winners and actual losers, and the apparent winners like to explain the miserable fate of the losers by saying that the latter do not possess the qualities needed for "success" as defined in Western terms. Perhaps we should challenge the measure first, i.e. ourselves, and decide on our prerequisites to evaluate the spiritual capacities of other cultures only thereafter.

2.

One of the facts that most clearly demonstrate the thoroughly social character of the human species is the extraordinary dependence of an infant on its mother and, further, on its community: its parents, family, herd, tribe, people. Actually the dependence starts already earlier: a mother's chances to survive a birth without outside help are marginal, and already during pregnancy her wellbeing, and in primitive cultures even her survival, requires special care from others. And already before she has become pregnant, the males qualified for reproduction through tests of manhood have selected the begetter through various struggles among themselves, and the selected male has performed the appropriate acts of courtship. One fight is won by the strongest, another by the fastest and most astute, and the most skilled and respected hunter is not necessarily the one with the biggest muscles, but the one who creeps most silently and throws the spear most accurately. Even the most primitive human communities rely on division of labour and on differentiation, thus preserving a variety of features in the population and making the group more resilient than any of its members would be alone. Thus, it is not only the case that the smallest unit of the human species consists of two persons, a man and a woman; instead, humans can survive only as a species that meets the challenges of the struggle for existence, not as an individual. Humans are through-and-through social as a species.

The multi-annual symbiosis between mother and child is a universal human factor, which results in that all humans and cultures have some common features arising directly from the biological-psychosocial character of the species. As a human child's eye opens up, it sees light and shadows, bigger and smaller figures, and also good and bad things. Feelings and knowledge are originally similar in structure: just as feelings are used for reacting immediately and on a full spectrum, the cognitive challenges of the world are met with contrasting symbolic pairs of concepts, and people strive to control reality on the true/false axis of description and explanation. Emotive interaction, feelings and knowledge, signals, symptoms and symbols, finally conceptual thinking and the entire cognition up to consciousness of the self and to the experience of the continuity of existence - they all develop on the basis of the early years, always tightly within an existing social form of life.

A human being becomes a human being by being born and raised among people. There are known cases in which wolves have adopted newborns who have been abandoned in the forest. When found, these creatures do not display any signs of humanity.

Due to socio-cultural factors, species-specific universal human development is characterized by different expressions of the same basic humanity. For example, no-one has ever found a single human community without some kind of religiosity, though the forms religions take are diverse. From a Freudian perspective, all religions reflect certain universal human characteristics comprised by the psychic development process. Such characteristics are e.g. the temporal extension of the experience of existence in such a way that good and bad deeds always receive their reward and punishment, if not in this life, then in the life extension, i.e. in the afterlife. Also the cognitive side is originally interwoven in the religious mode of thinking, and all religions contain some explanation of the world or a cosmology within which people make an effort to organize everything that exists into some holistic meaning relation. Feuerbach has strongly realized how the first general concepts of human language are actually deities. Primitive humans saw mountains here and there, and when they saw a really big mountain, a mountain with mountain traits in extraordinary quantities, it appeared to them as a MountainGod or a MountainRuler. Thinking in general concepts carries divine force even in our present cognitive aspirations, as we feel like taking over the world through abstractions. In the eyes of a little human being the giver of his or her life, the mother, or the father, standing as an authority, are located above. Therefore, throughout life, everything that is big is also impressing - and divine. Orders of precedence naturally take the form of hierarchies, and one ascends in rankings from the bottom up. Power structures take the shape of a pyramid, with the greatest power on the top. Thus, the mother of all religions, the mountain god still lives on in us.

It is still not impossible to recapture primitive man's experience of the mountain. Let us make a thought trip: let us imagine that we are at the bottom of a mountain. The mountain would be high, with its snowy peak visible at times but often concealed by the fog and sometimes above the clouds as if in another reality, in heaven. Even if it was big, it could be captured in a single view. Its perspective would betray us: although it is miles away and miles high, it would seem to be right near. When you start to walk towards it, you'll be surprised by the distance. A mountain often surprises its conqueror. You start the journey as a challenger whose long-cherished purpose is to meet the gods living on the top of the mountain face to face, but you come to realize that you lack the required strength. The length of the trip, the steepness of the ascent, the strains and all sorts of hardship and unexpected adversities exhaust you. It really feels like a wall has been erected. Be glad if you survive. What looked easy from the valley below proves to be as impossible as the construction of the tower of Babel. --- No, it's probably better to just look at the mountain from a distance. It may be alluring, but its invitation shall be refused. Let it be somewhere out there, you can best feel it within yourself. It is accompanied by its remarkable mystique; you don't know if it's dead or alive. If there was a cottage at the bottom of the mountain, you could go to the window and look at the mountain in the morning. "How does the mountain look like today?" "- It is calm and beautiful, but somehow threatening. Hopefully it does not do anything." "How does it look like usually?" "- It is rugged, stagnant and serene, as if secluded."

A very conventional subject that is depicted repeatedly in landscape painting, a similar clichéd object as flower compositions or fruit still lifes, downright some kind of an icon of kitsch art is a landscape with water in the foreground, perhaps a spring, a flowing river, possibly the stream pool of a waterfall that is located further back, bordered by trees or bushes to provide some depth perspective, and behind everything, somewhere further away, a rugged mountain whose peak looks as if it was illuminated. As if it were glorified by a certain supernatural purity. The masters of oil painting have developed recipes that allow even amateurs to adopt the technical work phases of such mountain landscape painting with relative ease. And when the basic technique is mastered, the same formula can be utilized with different colours, so that the reflections of the water, the light straining through the foliage of the trees and the mountain itself appear optionally in the light of the morning or evening sun, in the gentle sunshine of a fair-weather day or in the fatal atmosphere of a dark and stormy night, etc. It is unlikely that such an icon has emerged and developed simply by chance. Something of an eternal idea crystallizes therein, something of a myth-like or magical setting, certain eternal elements, feelings of invitation and longing, proximity and distance, the idea of perspective -- and as we raise our sight from the painter's canvas and think about the past, the fact that such an icon-like mountain landscape is repeated in today's reality in endless millions of copies beautifully revives the long historical perspective in which that subject has lived on and remained significant from the early primitive times of humanity.

3.

Sometimes massive cumulus cloud formations appear on the horizon, and when the sun hits the tops of the clouds and illuminates them, they could be mistaken for snow-covered mountains. These massive, mile-high formations create a perspective illusion similar to that of a real mountain: they appear to be much closer than they actually are. Maybe primitive man climbed mountains to get on top of the clouds. Maybe they did get there - it is possible to climb above the clouds - and thus, fantasy and reality met. This was reflected in that clouds effectively are of the same matter as the mountain top: snow, crystals, ice. They say that truth is stranger than fiction, but for primitive man all was true. What did he experience, what did he think? The mountain had a soul, the clouds had a soul, the world had a soul.

Children always think of clouds as an image of something. Everything that is present in a child's world is objectifiable by its nature and has a form-essentializing and form-recognizing mind, and objectification creates figures, borderlines and interfaces, starts and ends to the surrounding obscurity. By entering into the spirit of such an early stage of thinking, also a connection between the perception of place and time can be found, because starts and ends structure not only space, place and distance but also time.

A child's observations take place in some sort of a "tunnel world" in which intensity might be strong, but the scope required for a sense of proportion is left outside. A child's world of thoughts is limited in a special way: both spatial and temporal localization are purely experiential and in no way cognitive. A child wonders where clouds come from and where they are going to. The horizon is, at the same time, a child's event horizon: the world starts from there and ends there. There are, of course, no causal relations in this kind of a world; actually, the sense of causality develops relatively late, at some point in the teen years. In the mind of a child, "weather" is not a phenomenon determined by air flows, low and high pressures and temperatures spread around the world, or by any other cognitive explanation, but an experiential state that prevails under the sky. Such

an immediate experience of the world, such experiential connection and such a fullness of experience can only be envied by adults. A child may well imagine that the clouds fall down or the sky collapses, and the sun indeed is a golden wheel of a heavenly creature's chariot, shining fiercely during the god's daily ride across the zenith. Maybe the sun is lifted up to the sky every morning like a flag is flown - namely, flags are not any colourful pieces of cloth fluttering in the winds, but worshipped and respected holy signs, symbols that are bigger than people and life, ones for which even adults fight and sacrifice their lives. --- As a child grows, he or she wonders and asks questions about everything, and the wondering arises out of experiences, while the questions and answers arise out of the existing language and the concepts being used. In this way phenomena receive their cognitive definitions and their sense. But the original conditions of experience and the elemental experiences are never entirely swept out of the way of cognitive explanations; instead, these contents, or at least some essential basic element of meaningfulness related to them, remain as the connection diagrams of the psyche and as a driving force of thinking until the end of our lives.

Does someone remember the childhood experience of being followed by the moon when walking in the dark? For instance, the moon seemed to follow you with every step, and if you stopped suddenly, the moon stopped immediately, too. That experience results from the mentioned "tunnel world": a child perceives everything intensively and as being "close", as if looking through some kind of a magnifying but somewhat blurred tube. Distance and depth dimension are not perceivable in the child's world, because the "transmitters" of distance that generate perspective are missing from the child's perception. They are excluded from the child's world. Even school-age children are unable to comprehend e.g. traffic like adults do, and in this respect children could be compared to the aforementioned one-eyed and half-deaf persons. A child perceives the moon as belonging to the same plane as the rest of the reference points in the landscape, such as rooftops, tree tops, and the like. Therefore, the moon appears to be racing through the sky in proportion to those closest landmarks. There, above the rooftops, it follows the wayfarer, creating a mystical connection between the child's consciousness and itself.

Such a budding self-consciousness clearly displays the local "tunnel" of perceiving the world, a later effect of which could possibly be that even as adults we see e.g. the rising or setting sun or a full, yellow moon lying low and close to the horizon as if they were swollen, bigger than they actually are. In paintings we can depict them as they appear in our mental images, but to our annoyance, e.g. photographs taken with a normal lens cannot completely capture these romantic moments in their overwhelming fullness. However, such an experiential tunnel leads not only to locality, but also to consciousness of one's own existence, i.e. to a budding experience of the continuity of one's own existence. That is also the case: the moon is in the sky, but the little observer is conscious of his or her every step. Thus, the "tunnel" is also temporal - it connects together the world's location and the sense of time of the psyche. The relation of the external and the internal is joined by the relation of place and time.

The external, so called objective reality, i.e. the real world, and the conditions of perception, i.e. our subjective psychic apparatus, are always inseparable, they live on each other's terms, supplementing each other - and quite similarly, place and time coincide in our brain. They are elements that belong to the same cognitive functional entity, they are supported by each other, they were born together, and they grow and develop together. This connection is present already in the primitive mind, and it is still there in Einstein's theory of relativity. Is it only coincidental that what was originally common in experience finally reunites also in the form of externalized physical quantities, dimensions, space and time?

4.

In the European Middle Ages, also time was stagnant. The order of life, in which all was local and in place, in which everyone knew their place, lost not only dynamic and dramatics, but also the sense of time. Pictures depicted the eternal Madonna with the eternal Child Jesus in her arms, and eternal maternal care was reflected in her eyes. The other pictures, which usually also depicted biblical themes, were without perspective. In the so called hierarchical perspective, important persons or events are depicted bigger than less important ones. Hierarchical perspective can well be considered as a child's typical thought arrangement. The educational contents of the Bible were conveyed this way e.g. in church art - the pictures were indeed some kind of comics intended for the illiterate, illustrating the stories and teachings of the Bible. Altarpieces, frescoes on the ceilings and walls of churches - eternal ideas were pursued in all of them. Natural perspective was missing. Landscapes look incomprehensibly distorted even in the paintings of the Late Middle Ages. Nowadays, pictures like that could be drawn by a small child, but for an adult the comprehension of such a visual image is difficult.

If one were to point out one turning point in history at which European man reaches the age of majority, in other words, becomes conscious of himself and starts to realize the motives and effects of his deeds, i.e. the level of maturity at which a human takes individual responsibility for his own actions, on several grounds this turning point would be located at the turn of the Middle Ages and the modern era, at the period known as the Renaissance. Of course, medieval theocracy, sanctified by divine revelation, did not make a complete reversal at that time, but the Renaissance must be considered as a long period of a maturation phenomenon during which the new consciousness gradually but inevitably breaks free from the encapsulated egg shell of the Middle Ages. The very broadly-defined transition period lasts for two hundred years, from about 1300- to about 1500-. "Rebirth" is an apt name for it for at least two distinct reasons.

Firstly, at that time a specific spiritual function called memory is recovered. Roughly speaking, the human sense of time was set back to zero for the entire millennium of the Middle Ages. The lack of the temporal perspective implied also a spatial limitation of the world: the event horizon of medieval man was limited to what was the local present moment. The lack of dynamic arches in the psyche shrank also the entire memory function. As the mind broadened out, it became possible to travel in time to the past, to the ancient world, via Latin to Greek. Scholars regained interest in Aristotle who experienced a rebirth, as did the entire ancient civilization. Stagnant waters started to flow again. Another reason why the name "rebirth" is descriptive is related to the character of the psychic breakthrough. Past phases of life recapitulate; they take on a new meaning as consciousness is renewed and shows the past in a new light. Many things that happened in the Renaissance period correspond to puberty and the related changes in current individual development. In puberty, a human being "is born to adulthood" - it is said that serious thinking arises at that time, a new kind of consciousness of the self is gained, new questions arise, and the construction of a world view is started. Spiritual prerequisites are of the most importance here, and the Renaissance actually is a proof of how in history mind precedes matter. New thought precedes a new form of life. Spiritual forms are reborn first, practice follows.

As Spengler recounts in his great historical narrative poem, mighty cathedrals with vertiginous interior spaces reaching for the heavens are built at the dawn of the European rebirth, and at the same time, as part of the same change in the thought of the times, church bells start to ring and church clocks start to measure time. This is not a religious but a cognitive awakening, and a significant part of the knowledge is pure psychological awareness of the "I" or the self. Within its framework humans rearrange themselves in relation to both space and time. A new way to perceive the world, collect observations and to define the starts and ends of events arises, and it sets new coordinates, the dimensions within which people experience their own existence and, from this point on, the continuity of one's existence. One's own self and its continuity is exactly the new feature of the modern era. The entire existence of medieval man was depersonalized, experientially non-individual. The own self implies the ascent of self-consciousness above a form of life that was reduced to locality - it implies personality and perspective - and the sense of time in turn means the freedom to imagine the past and the future, to imagine alternatives, to analyse events, draw conclusions and to make prognoses. This spirit of the Renaissance opens up and shows the way for the coming world of knowledge and instrumental reason. At some point, somewhat later in history and with the help of these new spiritual resources, it becomes possible to move on from the deductive mode of thinking typical of the Middle Ages to inductive reasoning. Then, still a bit later, the natural sciences were born on the basis of causal thinking.

In the depersonalized existence of the Middle Ages, the world was perceived as consisting of the thoughts of God, and the church was the body of Christ. The magic of concept formation allows the concrete and the metaphorical level to merge into each other. The Word was Word, Revealed Truth, and Truth existed as Truth beyond everything earthly, somewhere outside the personal and the individual, as far as these concepts can in any way be used in this description. Truth was outside observations, like perspective in a child's perceived world. And as a child's experience of perspective does not contain the characteristics we expect from perspective in our great wisdom, similarly the Truth appealing to medieval man does not correspond to anything we expect from truthfulness. Nevertheless, it was enough for the nature of medieval thinking, or rather, it was not only enough but constituted an essential part of it. People's behaviour was programmed by an invariable, almost petrified form of life. They experienced their lives as meaningful as we do, and explained the world and their own position in the world order with the help of internalized religious dogmas. The degree of this internalization is indicated by the fact that this period of stagnant spiritual character lasted for almost a thousand years. If a culture is evaluated according to how well it answers the questions that can be posed within its framework, the Middle Ages would probably be the happiest period in European history.

It is always a prerequisite for historical change that the event horizons break down and that perspectives are shattered. The change can be machinated by a new experience or a new thought, feeling or piece of knowledge, arts or science, because these apparently different lines of action of our cognition can be reduced to the same basic tunings of our thought apparatus. Major upheavals mean exactly that the change happens on a broad front and that many seemingly separate things are shattered simultaneously. Thus, one can speak of eras and their internal "spirit", which maintains a sort of integrity and whose ruptures are either patched with existing materials, or they crumble down as wholes as their supporting structures collapse. The Middle Ages were a millennial empire of extremely stable and spontaneous spirit, and as this monolith came crumbling down, it needed patching material for each of its cracks. Therefore a whole range of new, seemingly different spiritual forms emerged. In analysing these we have a unique opportunity for psychohistorical analysis - an opportunity to learn something essential about the human being and the foundations of human forms of life.

At some point during the Renaissance, perspective appears in the paintings, and rules for controlling the depth dimension are created. In fact, art history, as odd as it may seem, claims to know relatively exactly the point of time at which the aesthetic inertia typical of medieval pictures of saints was replaced by the dramatics of the secular type, and natural perspective was introduced in replacement of hierarchical perspective. This happened in Giotto's Lamentation, a painting completed ca. between 1304 and 1306. The painting displays the descent from the cross in a new way: The loved ones of Jesus are represented as individuals, their inconsolable despair and sorrow is captured on the canvas, and the drama of the situation is expressed in the persons' positions, gestures and relations to each other. Although golden halos surround the heads of everyone, even of the little angels hovering in the sky, it was precisely the "realistic" character of the picture that astonished people. It was said that the picture represented reality so vividly that it was as if everything actually happened in front of the eyes of the public. In retrospect, this reality effect is not so easy to recapture. But a quite similar reality effect was produced by Masaccio's fresco "The Holy Trinity" from the year 1427. People from all around came to Florence's Santa Maria Novella church to look at the painting of which it was at first sight impossible to tell that it was painted surface: it was as if the artist had carved a hole into the wall, allowing people to see into another room. These paintings must have made a huge impact on anyone watching them at the time. It is probable that these very examples have gone down in history because of the exceptional attention they received. In the big overall picture of development, however, it was only a question of time when and where perspective would enter the picture.

Somewhat later also the sunshine, the light was included into paintings. Piero della Francesca, a peculiar master active at the court of Urbino, who, by the way, already wrote even textbooks on perspective, used sunshine to create a lighting covering the entire image surface in his painting "The Flagellation of Christ" from the year 1460. As if someone cast a powerful source of light at the painting - the picture turns into a stage of consciousness, and the light of this consciousness allows for the display of something that could not have been displayed earlier. Without light, the painting would be clearly partitioned, because the picture shows two separate, spontaneous spaces, each of which tell their own story. One of the stories is the flagellation of Christ, with all the related deep semantic content. In the other half of the painting, citizens of Urbino discuss politics. Various interpretations have been proposed on the plot threads by which these play stories are interconnected. But perhaps they are not even essential. In any case, the painting is a miniature of the entire renaissance and of its spirit. The past, the present and a new consciousness allowing for a new way of comprehending things are all present.

Such a painting provides an excellent example of how new ways of perception and new contents of consciousness gradually penetrate the cracks of earlier world materials. But even though light created a new additional element, historically it turned out to be impossible to save the earlier contents in the long term. Instead, painting rapidly developed new contents corresponding to light. The first instance of such content was portrait painting which, in the spirit of the Renaissance, highly emphasized individuality. Light was later utilized in many ways as the conveyor of painting-related information. It could also be claimed that the seeds that burst into full bloom four hundred years later in Impressionism were planted by the Renaissance. After all, Impressionism is the purest expression of the idea of conveying a depth impression by light.

5.

The problems of perception, consciousness and thinking involve a variety of issues, and one of the possible starting points and aspects of consideration is related to development. It is quite undeniable that humans experience some sort of a universal development event both as a species and as individuals growing up from a child to an adult. Primitive humans were and are in some respects similar to the children of developed cultures. As for the sense of perspective and time, the stage of development is definitely significant. There's a certain stage at which the depth dimension seems to bring along time. It's as if time entered the picture as an extension of distance. However, time isn't anything that could be perceived directly by the senses; there are no particular concepts for it, words that would be reserved exclusively for its description. The words of our language that express distance and time are pretty much the same - in both connections we speak naturally of starts and ends, for example. Is time something more than concepts moved from the local world to the area of "sense of time"? Our mental images of both place and time are built up of certain kinds of elementary units of perception, but as we know from history, the images built on such elementary conceptual units do not necessarily correspond to the physical reality. Sometimes even the paradigmatic initial images of thought are shattered: our notion of time was totally changed by the theory of relativity. In this connection, we can see how an empty space, sort of a vagueness was left between experiential reality and the conceptually elaborated laws of physics, enabling a scientific development step or, rather, quite a leap. With new physical tools in our hands, we can set out to conquer the mountain again - we have a more realistic view of how far the summit is.

How is an "image" of the world formed in our brain, and how separate is the problem posed by, for instance, drawing a three-dimensional picture onto a surface? We don't know. It is not even sure whether it is possible for us to understand this. When the man of the Middle Ages draws a picture onto a surface, the surface is a different instrument to him than to painters of later ages. He arranges the rational structure of his world onto the surface, which means that the surface cannot act as a window to the landscape. If we look at e.g. our own childhood drawings, our empathy fails us as we try to recapture the way in which the world "opened itself" to our perceptions when we were children. Memory has its limitations - it uses the present as a starting point, and as we look far back to our past, it's as if we tried to see through slightly cloudy bottom waters. However, we cannot think that people had drawn pictures without perspective throughout history up until the modern era for some secondary reason, e.g. only because some aesthetic fashion dictated them to do so. Styles have their roles, but the difference between the effects of style and of a developmental stage lies in that there is no aesthetics that fully covers the history of thousands of years. The lack of perspective, however, does exactly that.

To make the picture complete, all the developmental psychological issues are accompanied by the fact that we always live in communities, and that these communities give birth to spontaneous and tradition-forming phenomena such as "the arts", which live their own life in the fluctuations of their styles and fashions. Without a doubt, culture plays a part in determining what we perceive of and in reality. It is e.g. possible that those basic models of interaction occurring at the early stage of development also convey some sort of a cultural program. Perhaps our brain excludes certain potentials from the picture and builds the foundations of our "consciousness" in a specific way, thereby determining the specific character of our entire later development? -- In this connection the importance of words such as "consciousness" becomes evident once again. Without such a concept, we couldn't even describe these incomprehensible phenomena.

In a certain sense we are all born into a ready-made world. Language, which is intersubjective, contains the concepts with which reality is described and defined, and a growing-up child must first be content with the truth provided in these concepts. In the very beginning, thinking operates with the initial truth contained in concepts. Certainty is the starting point for everything, as Wittgenstein puts it: to be able to lie, you must learn how to tell the truth first. As far as the concepts of language turn out to be unsatisfactory on later occasions, their content must be adapted, which in practice means that they have to be redefined by other concepts. For any development to take place in this respect, the concepts of language must be somehow vague - they must breathe, so to speak. If all concepts were permanently and precisely defined by other concepts, as if determining their contents and meanings with absolute precision, we would return to the fixed-concept world of the Middle Ages. In this case, all development would stop, and change would be eliminated from the world. Would the absence of change also lead to the absence of depth and time? Who knows? We do not have answers to these questions.

In striving for conceptual clarity, philosophers are forced to occupy themselves with considerable amounts of concept confusion. The difference between immediate seeing and conceptual elaboration can be clearly seen in how concepts indicating location move on to describe time at a certain stage of cognitive development. Also in philosophy, new meanings and concepts are commonly developed based on earlier ones - thus, doctrinal philosophy has long ago become a spontaneous field of operation defining its own preconditions and methods. Through the centuries, philosophers have withdrawn themselves to their dim chambers for research, immersing themselves in utterly thankless concept definitions and ruminations. Yet at the same time, artists have painted their views on walls and canvases, and in their works the forms of the world may be far more recognizable than in the explanations of philosophers.

6.

It is said that our European cultural heritage contains a linear notion of time, i.e., for us time is something that proceeds in a straight line from the past through the present to the future. "The arrow of time" is the metaphor for expressing this. Perhaps some fundamental elementary units of perception and thought in the Western mind are indeed different than in Eastern cultures, as it is more common there to perceive time as something renewable, repetitive, cyclical. In the Western world, into which apparently also the early cultures of Assyria, Babylonia and Egypt must be classified, phonetic writing was implemented as the basic cultural solution, which probably implies a different cognitive structuring of initial images than the pictograms of the Eastern cultures do. Perhaps also the elementary units of time are built up at these early development levels. The ancient Greek philosopher Heraclitus said: "It is impossible to step into the same river twice, for everything is perpetually breaking down and uniting, approaching and moving away." For the purposes of our doctrinal reduction, we pick up only the first part of this passage, which is a clear mental image. Still, somewhere along the way, we have reduced even that mental image, and now we say simply: "Everything flows." This in turn is already a verbal image. Heraclitus' preserved passages, creditably translated into Finnish by Pentti Saarikoski, remain through and through concrete mental images into which time is incorporated in the form of occurring. But apparently we are no longer capable of experiencing the structural level of elementary temporal units based on which ancient man comprehended his reality. The saddest thing is when our understanding is blinded by doctrinal philosophizing, which leaves us unable to comprehend that the return to the basic levels of such elementary units of perception and thought is the only way to really understand the ancient world.

Are the structural elementary units of time born differently into a language that ends up using pictograms rather than phonetic writing? This could be the case. The journey from mental images to verbal images may be a journey from locality to temporality, and the Eastern cultures' pictograms that express happening may be more fixed and rigid than Western verbs, which have developed further away from their contexts and are more independent. When using pictograms, the way a sign represents content differs from what is contained by a phonetically expressed concept. To be exact, the overall shape of pictograms is conveyed before all the individual messages contained by them are arranged with relation to the whole, which means that reading them involves, in a sense, deductive reasoning. Reading linear lines of letters in turn creates mental images at the rate of progress, and this constitutes the early stage of induction. As if by chance, the "arrow of time" points to different directions in the East and in the West. Also the writing direction is, as if by chance, the opposite. What can such different cognitive solutions expressed on an initial level mean in the long perspective? An imaginative thought experiment for reflection: as we currently measure intelligence using figure reasoning tests, people from Eastern cultures are more successful in these tests than us Westerners. Why? Possibly because, contrary to what we think, the figure reasoning test is some kind of a deduction in terms of its actual content, and solving it can be reduced to a similar use of elementary thought units as that related to pictograms? Perhaps we should rethink some issues around so called intelligence.

The absence of linear time from where pictograms are the basic cultural solution is neatly supported by the observation that the millennial Middle Ages experienced by our own European civilization, during which time was erased from our world, lost and forgot not only the sense of time but also, almost completely, the reading and writing abilities that had already existed in Ancient Rome. It was replaced by - nothing else than strange sign magic. Medieval number mysticism with its enigmatic hidden mysteries or curious cryptic letter monograms could be used as such in today's intelligence tests, for they involve the same sort of deductive resolving, i.e. backward reduction from a given problem to an overall shape with the help of a rational rule, that is utilized in both number series and figure reasoning tests. For some reason we think that our own intelligence tests favour the inductive, much advertised "creative" way of problem solving and that they are in no way "culture-specific". Neither is true, and the fact that these tests are marketed as such indicates that we are hardly able to grasp how culture is built up of the elementary units of perception and thought that are typical for cognition.

7.

Myths and religions follow the everyday notions of time, and in the Western world, Judeo-Christian heritage has carried along temporally tuned paradigmatic initial images that have come to expression also in the so called "grand narratives" of the modern era, such as Marxism and Freudianism. Behind these doctrinal constructions we find a linear notion of time, a strong idea of development and a prophetic prediction. Although these doctrines address audiences in different ways and although Marxism is supposed to address the masses while psychoanalysis should concentrate on the individual, the underlying agitating message behind the apparent differences is that of religious salvation in both cases. As, according to Marxism, the consciousness of the masses is determined by the historically prevailing material conditions of life and the economic relations of production, psychoanalysis sees the consciousness of the individual as a mere superficial structure under which the real factors determining personality are hiding. All "grand narratives" can be treated in the same way: their deeply mythological nature undoubtedly reduces and crystallizes some truth into them, yet in themselves they are also still surface, consisting of endless networks of very small elementary units. These tiny structural elementary units live through the entire human history.

The problems of perception, consciousness and thinking involve a variety of issues, and one of the possible starting points and aspects of consideration is related to development. Our thinking operates with mental and verbal images, but the way in which an "image" of the world is formed in our brain is problematic. A mental image is perhaps something completely different than we imagine. Perhaps it is nothing like a still picture of objective reality taken by the camera of our eyes, but a significant part of a mental image actually consists of the elementary units produced in the depth direction by a long historical development together with our personal psychic design. For some reason we are as yet unable to clearly distinguish this temporally constructed mimetic perspective in our mental images. We do identify paradigmatic initial images in mental images, the aspiration for standard forms is a topic in perceptual psychology, and the holism expressed in figure-formation is a superficially known and understood truth to us, but so far no-one seems to have resolutely pointed out the fact that these patterns are something similar to star constellations: on the retinal surface level, they combine points which are seemingly close to each other but very far apart in reality, in the depth dimension. On such a basis, the doctrinal truths formed by us under these conditions are based on a similar optical illusion as the descriptive names and characters associated with the constellations of the night sky - for the time being, we form our doctrinal truths at the level of horoscopes.

It's as if cameramen grown in our brain, those well-known little men, agents and homunculi, indeed sent some kind of a sight ray, a light beam to reality through our eyes into the world, and projected that view onto the cave wall of our consciousness, where it serves all our orienteering attempts as a cognitive map. It looks natural to us, but its most defining features are the result of historical transillumination, and to be fully understood, the image would need an interpretation that corresponds to its own nature, just like an X-ray image does. On the cross-sectional surfaces of the history of the species, of cultural history and of individual development, on the temporal levels, those images look very different from each other, and the very variation of essential common traits in them forms the character of eras and the boundaries between different eras. It's just that our mind is not really well adapted to see these elements of mental images. They do not appear in our doctrinal considerations of reality - the more contemporary a theory is, the thinner the contact with reality.

Thus, mental images are not separate independent packages stored in our brain's memory centres. It could possibly be said that images are some sort of invariances in the functioning of the neural network of the brain. Neither elementary visual units nor elementary thought units are located in a given part of our brain. Therefore, what we call personality, the own self within the framework of which we experience the continuity of our existence, may remain relatively intact even if entire areas of our brain would have to be cut out. It's as if our thinking shed light on its elementary structural units from the perspective which generates a harmonious overall picture. The British biologist Rupert Sheldrake describes memory as being more like an AV receiver striving to maintain external and internal "transmissions" on a certain wavelength, rather than a recorder saving given program packages. The brain functions always as a whole; it is the physiological basis for the holism of our thinking. Images are rather functional than structural, and they are not "located" in our brain but rather in our thinking. However, the potential is in our brain. As a violent stream of blood flushes our brain with our last breath, it is indeed possible that it brings to the surface "all the images of our lives like a filmstrip".

8.

In the essay on Spengler contained in his book "Thought and Preaching", Georg Henrik von Wright ponders the question of the criteria by which an historical cultural period can be distinguished and defined. What is the nature of the common factor that allows us to speak of a certain era's spontaneity, of its own "spirit"? von Wright:

"It is important to note that the "bond" linking the various expressions of culture into a whole is n o t a nation, language, religion, form of society, philosophy, art style or any other historical phenomenon with definite content. It seems to follow from this that the bond in question must be u n i f o r m i t y, which is expressed in several different "parts": in religious, political, social, scientific, artistic and other kinds of cultural phenomena. It is exactly this similarity that is referred to when the "spirit" or "style" of a culture is discussed...

... It is clear that the similarity meant here cannot be "physical" similarity, i.e. the kind of similarity that, for example, often characterizes the appearance and behaviour of the members of a family. It may be suggested that this similarity, if it exists in the first place, is "psychological". This would imply that, e.g., a certain type of architecture and music gives rise to similar emotions. Of this answer, to which serious consideration should be given, I can only say here that I consider it to be only an apparent answer. It is true that architecture and music can give rise to similar emotions. But the problem is reproduced by asking in what sense the emotions are the "same"."

von Wright strives to resolve this problem setting by constructing some kind of a "motivational" aspect, some kind of a common network of aspirations and reasons supporting each other, which would provide the various fields of human activity with their characteristic all-pervading similarity. For von Wright, the beginning of the modern era illustrates the yet undifferentiated coil of human motivation: at that time, thinking was still uncategorized and unspecialized. Starting from music, one was able to arrive through sound waves at the mathematical modelling of wave motion; technical questions could generally inspire purely philosophical problems. --- Also this kind of an answer could be considered, using von Wright's own medicine, only apparent. Mechanical interaction between the various fields of human activity cannot be the factor internally unifying a culture. The tracing of such a factor has its own motives; it is the "realism" needed to support doctrinal considerations. Such argumentation may function on the doctrinal surface level, but when going deeper, the questions recur.

It is not mystical to look on humans as profoundly social beings, as "AV receivers" built into their community through all of their nerve endings and thought antennae, with the respective form of life being essentially some sort of a field of morphologic "transmissions". Strong paradigmatic initial images, such as the mountain god, are like carrier waves at strong frequencies that have followed us all the way through

human history. The dimensions of thinking, place and time, can ally differently at different times, and it follows naturally from the social nature of our thinking that a certain achieved stability gets stronger and creates a spontaneous whole aiming for temporal continuity. Great cultures of history, like the ones envisioned by Spengler with the mighty powers of his spirit, are possible, but so are also the more limited periods during which a certain stylistic trend influences the spirit of the time in its own way. There is no fundamental difference between universal human preconditions, great cultures and limited style periods. The same basic humanity is realized in all of them, but the diversity of its expressions is astonishing.

Spengler sees the formal structure of great cultures as life-cycles: a culture organism is born out of a strong initial image, bears its fruits, matures and dies out. In Spengler's vision of history, our Western, so called Faustian culture with its characteristic perpetual strive for exceeding its own boundaries is already experiencing the period in which its vitality is depleted and in which it will break down. A cycle is approaching its fulfilment. The term "Faustian" used by Spengler in reference to the content of the era we are experiencing stands in strange contrast to how great cultures, in the sense of formal structures, always represent some sort of an eternal recurrence, temporal cycles. For instance, Spengler does not observe that the Renaissance resonated in and recapitulated the ancient world. New contents flared to life in old egg shells. If culture were something entirely spontaneous, it wouldn't do so. Instead, if the eternal basic patterns of humanity are realized in culture, the old becomes the new.

The Renaissance style indeed repeated ancient architecture's static impressions, its structural solutions that emphasized supporting forces, its corner points and colonnades, and Renaissance aesthetics were generally characterized by the localization and control of physical forces, the stabilization of a certain rest state of mechanics. As is typical for temples, buildings were meant to be viewed "from outside", which indicated that the "self" had not yet been diverged from the depersonalization of the Middle Ages. The self was not experienced as the centre of the surrounding world in a way which would have projectively enabled the perception of interiors. The viewer had to experience balance and harmony. It can be said that in the ancient era the perceiver's time settled down when confronted with the beauty of the ancient times. However, somewhere in the internal depths of the mind, a long return to the past had been accomplished. This is an astonishing paradox repeated throughout history: often when something new is born, the eternal origins are revived first. Creative work is always rebirth by nature.

As the dynamic demons of the modern era were released in the soul of European man, also the aesthetics changed. The 17th century introduced the subject-self and the object-world, the new basic contrast, and this most influential basic experiential arrangement of the modern era created an entirely new mode of thinking, which at least in its doctrinal expressions can most aptly be called Cartesianism. Also the corresponding aesthetic style, the Baroque, is born. In the Baroque style, the harmony of the ancient era changes to its opposite. Where something used to be linear, now it appears in the form of threads. Where the perception of interiors was missing earlier, now multiple layers of frames appear around everything. Heavily overdone massive frames surround both dramatic paintings and mirrors, with the latter emerging as the true key symbols of the era. The idea of the mirror is to reflect the human self, which is now reborn at each glance. The heads of both men and women were covered with curly wigs. Impressions were strong. A world of contrasts stepped forward in all spheres of life; an action and a reaction, a theme and a counter-theme could be found in everything. Questions and answers were formed also by melodies in music; the themes piled up on each other. The purely refined Baroque spirit can be heard in Vivaldi's concertos, and this spirit is perfected and at its most massive in Bach's work.

If the Renaissance is considered a stylistic thesis, the Baroque is clearly its antithesis, and the reconciliation between these two extremisms was naturally provided by the Rococo, in which one of the key aesthetic ideas was to dissolve all the clear-cut boundaries of the extremisms. The Rococo is, as it were, constant movement, a constant escape of the object under consideration from a stationary point at which either of the alternatives on the external-internal axis would receive an opportunity to be realized. The Rococo curls dissolve the boundary between the object and the background, in them the object seeks to continue into and merge with the background. Also in music, the dynamic expresses interpenetrating tone swirls and lines. Mozart is the spirit of the era.

It is probably not exaggerating to say that the big course of developmental of the European modern era is built upon these three paradigmatic themes, with the Renaissance as thesis, the Baroque as antithesis and the Rococo as synthesis. Later, these paradigmatic initial style idea images define also the 19th and 20th centuries in the form of attenuated follow-up waves. Beethoven could be viewed as the last great spirit of Faustian culture. But thereafter, from a Spenglerian view, the peak of the culture has been passed and the decline has begun. After the world war the world wasn't the same anymore. It seems to be vain to expect that the beginning of a new great culture could be found anywhere along the way which was historically produced by the European modern era. Now it is necessary to go back much further in time again, to the primitive origins of the species in order to find the starting points for new ways to arrange the mosaic of the world's elementary units.

All kinds of cultural-historical descriptions have been made, and even more, different ones could be written. All of them have more than a mere metaphorical meaning. The fact that none of them is conclusive and correct does not rule out that they are all as correct as possible. Messages exchanged between the self and the world are repeated in them on the respective temporal surfaces. They are some sort of impressions, both in the sense in which Hume used the word and in which Impressionism influenced painting in the end of the 19th century. Just as Hume searched for the invisible thread through which the causal relation between the trigger of a gun and the bang from the barrel could be proved, the French impressionists searched for reflections, elementary units of light which convey an impression of reality to the viewer. The subject can be different, but the aspiration and the inner movement are the same. The big name of Impressionism, Monet, started with depicting the sea, developed mastery in the reflections of water, and finally made everything bath in a vivid yet immaterial light. For the last decades of his life he ended up beside the lily pond he had established in his garden, faithfully painting its reflections till the end. The name of the style, Impressionism, was originally a derisive term that was picked up for use by Monet with pride and defiance. Impressionism reached its perfection in Paul Cézanne, whose life cycle repeats the common story of a genius misunderstood and rejected even by his fellows. His correspondence with his only life-long peer and friend, Hugo, gives us a disconsolate picture of an exuberant and artistic youngster turning into a disappointed and withdrawing old man. Towards the end of his life, Cézanne moved back to his home village, Aix. There he painted the landscapes of the village, being especially interested in Sainte-Victoire, the hill or mountain rising in the background. The man and his mountain. The story of a human being.