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Times

Abstract

Time is divided into static time and dynamic time, the first to be called *aion*, the second to be called *chronos*. Aion is the incorporeal, omnipresent host of events. Chronos, however, is time in being. If we regard chronos as being quasi-objective—the mere passing of equal parts of time—then kairos would express how this time is being. In this article I claim that any shape of kairos stands to chronos, as Euclidean space stands to topological space.

Previous work with students of cinema and architecture made clear there were no instruments precise enough to describe different states of time. This led to the development of a taxonomy of the appearances of time, which are reflections of the progression of time from the moment it transformed from aion into chronos. This article will present this taxonomy, called “Eight Avatars of Time”, using the following categories: volume, significance, necessity, sequence, bearing, indexicality, simultaneity and proximity. It will also elaborate on how this nomenclature is helpful to bridge philosophical concepts of time with the practice of manipulating time.

Eight Avatars of Time: An Affective Temporal Taxonomy of the Epistemology of Time beyond Chronology

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1. Waddington, Conrad. *The Strategy of the Genes*. London: George Allen & Unwin. 1957.

2. Bateson, Gregory. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution and Epistemology*. Chicago: The University of Chicago Press. 2000 [1972]. p. 272.

3. Thelen, Esther and Smith, Linda. "Dynamic Systems Theories". In *Handbook of Child Psychology, Vol.1 Theoretical Models of Human Development*, Damon Lerner (ed.). Sixth Edition. Hoboken, NJ: Wiley & Sons. 2006. pp. 258-312.

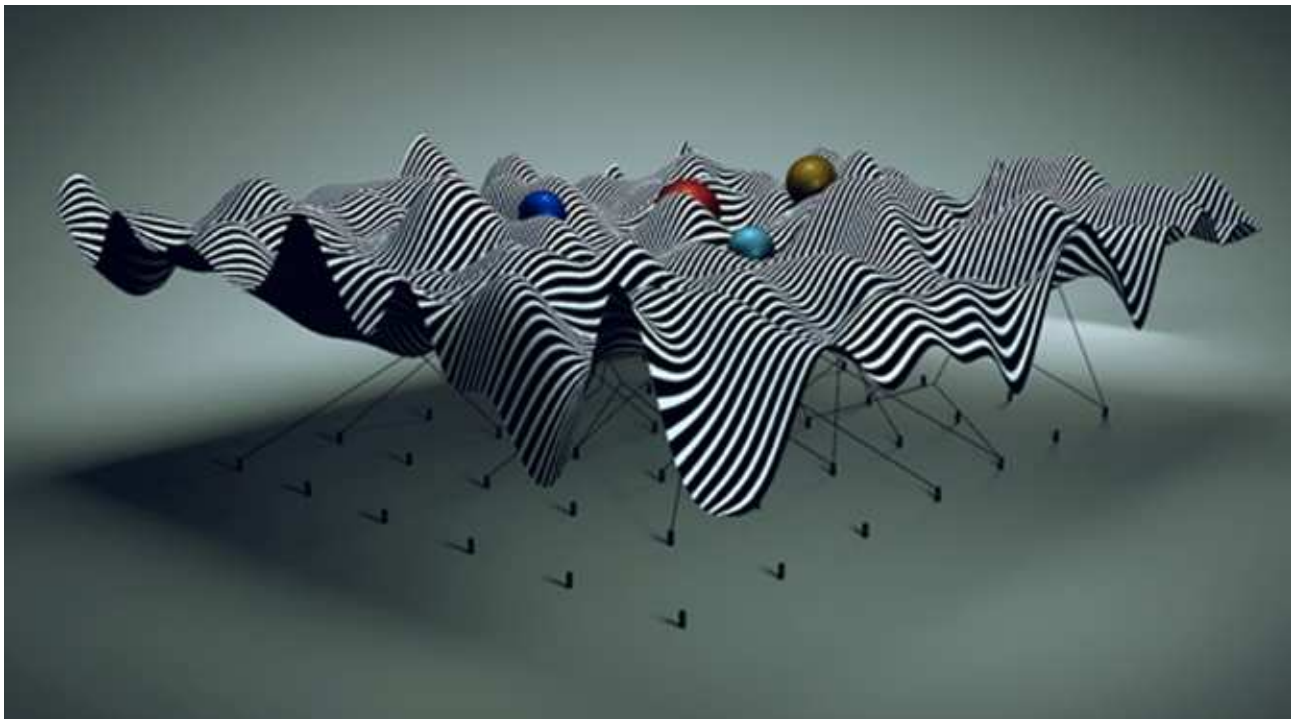
4. Massumi, Brian. *Parables for the Virtual: Movement, Affect, Sensation*. Durham, NC: Duke University Press. 2002.

5. Kwinter, Sanford, *Architectures of time: toward a theory of the event in modernist culture*. Cambridge, MA: The MIT Press. 2002.

Epigenetics

One of the premises of this paper is the assumption that an outcome of becoming is never the product of a logical necessity, but contingently obligatory. This allows for the existence of multiple optima, indicating the possibility of the formation of different, yet equally important outcomes. Moreover, this outcome can only be established after its formation, never as a result of a predefined procedure. Evolutionary biologist and philosopher Conrad Waddington developed a metaphorical landscape to visualise the ways in which evolution progresses and "takes turns". This is called the "Epigenetic landscape" and is an excellent allegory for this presupposition.¹ His scheme consists of a number of marbles rolling down a hill.

The particular path taken by the marble is called chreode (also spelled chreod or creode), a term coined by Waddington. It holds both the meaning *path* and the meaning *necessity*. This necessity-path is used in conjunction with the concept of homeostasis, which describes systems that return to a steady trajectory. Each marble will "compete" for the grooves on the slope, and eventually all will come to rest at the lowest points. The marble presents a mutation in time and the grooves present the number of options the marbles are confronted with (in the "making" of evolution). The "competition" of the marbles and the attraction of the different grooves could not only affect the outcome of the distribution, but also affect the landscape itself.



"The Epigenetic Landscape", Dr. Mhairi Towler, Link Li and Dr. Paul Harrison - all Duncan of Jordanstone College of Art & Design, University of Dundee.

Within the anthropocentric domain we could perhaps regard “autonomous” drives (the need for food, sex, shelter, warmth and so on) as being the deep attractors in Waddington’s epigenetic landscape and name them desires. We could take “connected” drives (such as interactions, stimuli, preferences) as specified forms of drives and call them affects. In that case (in relation to Waddington) desires could be seen as the strength of the attractions (the depth of the groove) and affects can be seen as accelerators (the slope of the groove). Affects are, to paraphrase Gregory Bateson, “the differences that make a difference”.² To be able to experience these strata, to witness and engage with these flows in everyday life, is called “intensive thinking”.

The concept of epigenetics plays an essential role in the understanding of perceptions of time, as it is in the creation of dynamic time that both matter is actualised (the form of content) and expressed (the form of expression). Psychologists Esther Thelen and Linda B. Smith have a specific take on Waddington’s epigenetic landscape as a metaphor for dynamic systems theory.³ The introduction of the epigenetic landscape and its subsequent formalisation has played a major role in the understanding of the stochastic variation in cell development (as a system) and cell differentiation and propagation (at the level of the cells itself). In more general terms, system dynamics are modes of comprehending the behaviour of complex systems over time. Dynamic systems theory studies the whole complexity of a given system, including all feedback loops, time delays, interferences, flows and contingencies that constitute the particular system. The primary aptitude that this approach gives us is the strength of non-linearity and stages contingency as the prime mode of thought.

System dynamics shows how seemingly small and insignificant forces within a system can have a tremendous impact on the development of the system as a whole and on its physical manifestations. There are many good reasons to use this system in a larger theory, even if there are critical

forces claiming that the concept belongs to the dominion of biology and should be regarded purely as a conceptual framework within that realm. Biological development follows paths that are very well described by mathematics, and perhaps the mere existence of mathematical logic stems from the imprint of biological development. Given the element of the development of systems over long timeframes (beyond the lifetime of any living creature), analogical thinking would be the only instrument of research that can be applied.

The very moment the virtual becomes the actual can be called an event, as Brian Massumi puts it:

Call that substanceless and durationless moment the pure event. The time of the event does not belong per se to the body in movement–vision or even to the body without an image. They incur it. It occurs to them. As time form it belongs to the virtual, defined as that which is maximally abstract yet real, whose reality is that of potential–pure relationality, the interval of change, the in-itself of transformation. It is a time that does not pass, that only comes to pass.⁴

The entire course of the chreode is determined by all these variances and there is absolutely no difference between conscious and unconscious behaviour: it all falls under the same set of systems. Architectural theorist Sanford Kwinter refers to the system of the chreode as an invisible but not imaginary future in an invisible but not imaginary landscape.⁵ With this Kwinter emphasises that the chreode’s path is not literally foreseeable because of the complexity of the acting elements, yet it does not have unlimited degrees of freedom, especially because of these actors.

Anticipation and Other Actors

It is possible to contextualise some of the actors that influence the way we perceive time through the perspective of philosopher Gilles Deleuze’s concept

6. Deleuze, Gilles. *The Logic of Sense*. New York, NY: Columbia University Press. [1969] 1990.

7. Gilles Deleuze: "The crystal is like a ratio cognoscendi of time, while time, conversely, is ratio essendi. What the crystal reveals or makes visible is the hidden ground of time. That is, its differentiation into two flows, that of presents which pass and that of pasts which is preserved. Time simultaneously makes the present pass and preserves the past in itself. There are, therefore, already, two possible time-images, one grounded in the past, the other in the present. Each is complex and is valid for time as a whole." See Deleuze, Gilles. *Cinema 2*. London: Continuum. 1989. p. 95.

8. See Reichenbach, Hans. *The Direction of Time*. Los Angeles, CA: University of California Press. 1956; Sider, Theodore. *Four-Dimensionalism*. New York, NY: Oxford University Press. 2001; and Sklar, Lawrence. *Space, Time, and Spacetime*. Berkeley, CA: University of California. 1974.

9. Mullarkey, John. "Thinking Time Beyond Philosophy: On Widder's Nonsense of Time". *Parrhesia*. No. 9. 2010. pp. 52- 54.

of the "Body without Organs".⁶ This concept has become an often used way to describe the distribution of "basins" or nebula, of flows, potentiality, relations, affects, engagements, and so forth, that are also part of our body-mind, but do not belong to the physical, i.e. actual world. This extended part of the body is by no means unreal: it not only influences all actualisations directly, but it is also a place where experience is actualised. An actualisation is a body that "crystallises" from a field of potential into "something" present. That process can produce tangible results, but not all actualisations are tangible. For instance, a dangerous situation can be feared (it is real because it can happen), when it actualises it is real *and* happening, yet not tangible. One could think of standing on a beam of fifteen centimetres wide and four metres long, which is not a difficult task if the beam were lying on the floor. Yet it becomes difficult when this beam is attached to and suspended between two buildings, 30 metres high. The void may not even be seen as an entity; its effects are very substantial nevertheless. The fear alone can already cause substantial damage.

Any component is always part of many assemblages, so therefore its properties can never explain the relations that are exterior to its body, let alone explain anything about it as a whole. This whole does not exist of (the connections of) its components in a formally logical way, that would make the component a logically necessary part of that totality. And this would be assuming a pre-deterministic position, the whole is then supposed *to be* prior to its own existence. Rather, these relations are "merely"

contingently obligatory in order to create the whole, which is at the core of the thought that gives us the "Epigenetic landscape". This is the "moment" before causality kicks in (without causality there is no chronology); it is a state of non-chronological time. This occurs before recognition, automation and classification (before the ball starts "rolling" down the hill).⁷

Taxonomy

It is imperative to stress the ethereal character of these notions. Matter is not to be seen as material in a classical sense: it can be both virtual and actual. The actual exists and the virtual "subsists", the latter can be energy, material or motion, but whatever the case, it is real. This notion of reality is highly significant since it bridges the realms of the virtual and the actualised, the potential and the unfolded, in other words, all the elements of the assemblage.

The origin of the following taxonomy of time, or rather the classification of *the appearances* of time, comes from the practice of pedagogy. For years I have been working with students in different settings on topics related to or stemming from the work on the relationship between two media: architecture and moving image. These meetings also served as a testing ground for some of the research on the reversal of the space-time axis, which enabled me to harvest insights and opinions from an architectural point of view. The initial concept hinged on the proposition that time is antecedent to space; space is created through motion and is not something

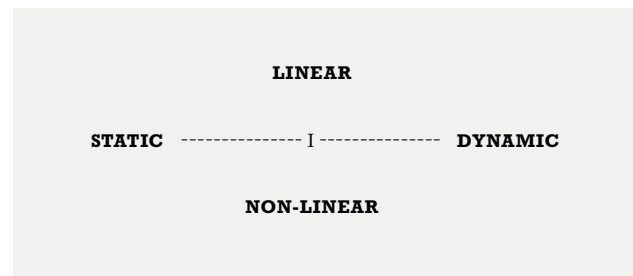
that has pre-given existence. Following this line of argument, space is not the third dimension, but the fourth. Space is a derivative of time. Space is 4D. This is not a philosophical exercise, although this thinking finds much resonance with the philosophy of Deleuze, whose work has been used in various contexts to create a framework for experimentation and exploration in this field. Yet I would like to address this proposition on a very practical level. When we regard the narrative level in a moving image as the programme (its logic, its cause etc.) of its design, then the creation of its structure would follow the instructions that are generated from this. But if we generate the instructions on the basis of some other structure, a previous or distant structure, then the narrative would follow that structure. A narrative in architecture places action in space. The amount of movement or specific use of the space and the demands of the user determine the usability of the space. In cinema we do the opposite. Time is inhabited by the “user”. Motions sculpt space on the basis of the demands of the programme (the narratives). This is not just a reversal of outside-in to inside-out or any of those kinds of conceptions; this is a fundamental reversal of concept.

In order to “flatten” the field of options and to be able to work with these notions on a comprehensible level, I propose that architecture writes time through space and cinema writes space through time. This is a reversal of the space-time axis.⁸ This means that the quintessential quality of a moving image lies in the concept of the production of space through time, rather than the other way around. Within the studios and during lectures (especially when working with architecture students) I have encountered the problematic of clarifying this concept, not because of any uncertainty of the concept of space and its possible manifestations (whether these remain virtual, or become actualised), but the real problem lies in the very rigid and narrow vision students have on the concept of time. The general perception is that time is time: no more, no less. It is an entity with one direction, one unit of measurement, unbeatably

thorough in its capacity to progress in a steady fashion, and—perhaps most importantly—dissectible into small units.

Avatarism

Rather than starting from this angle (in an attempt to overthrow the dissectible concept of time) I began by making a classification of how time *appears* to us, focusing on the question of what time *does*, rather than the question of what time *is*. For this I searched for a language that could function in the practical realm of moving image production, and be used in a metaphorical or even metaphysical context. For this I would distinguish a static/dynamic dualism and a linear/non-linear polarity, which could be put into this type of axial scheme:



The position of the static and non-linear is called *aion*, which is time before its unfolding, before its actualisation in some type of chronology. Philosopher John Mullarkey explains:

Deleuze talks of the paradox of the present as the need for a time in which to constitute or synthesise time (as the succession of past, present, and future): “there must be another time in which the first synthesis of time can occur”. This time, moreover, cannot be time understood as succession, as change or tensed, for this would just bring us back to the question of how and where such a time was constituted, how did it flow. Rather, it is empty, the time of eternity—what Deleuze calls the Virtual or Aion.⁹

On the basis of the deliberations and motivations mentioned above I have now defined eight avatars of time: (i) Volume (not duration), (ii) Significance (intensity), (iii) Necessity (instrumental or social), (iv) Sequence (order), (v) Bearing (heading and speed), (vi) Indexicality (now, then, when), (vii) Simultaneity and (viii) Proximity (relative distance of timescales). The appearances (avatars) of time are only perceivable in the dynamic and linear sense; they leave out the condition of aion. All these categories fall under the axiomatic position of linear, dynamic time. Within this “group” we can differentiate three sub-groups, which will not be formalised in any way as it serves no purpose to over-classify these notions. However, it is helpful to cluster some of them to relate to their “provenance”; with this I mean to what degree it could be claimed that they “descended” from either chronos (measurable time) or kairos (lived time). We can then see four “types” of avatars emerging; those that are rooted in the physicality of time, those are rooted in the motion of time, those are grounded in the experience of time, and finally those that are founded in the relativity of times. How these classes work and relate to each other will be made clear through the description of all eight separately.

1. Voluminosity

Volume of time is arguably the most “chronologic” of them all, as this would indicate “how much time” we perceive. But, as we already made the assumption that time never appears as a sole element of chronos, we could not translate this to “how long this time takes”; volume does not equal duration, in the same way as mass does not equal weight. The volume of time is conditional and a product, or better, a residue, of the conditional duration of time. An analogy can be found in the difference between air and wind: we can measure the flow, but not the amount of physical particles that move. The progression and direction of time produces a duration (that can vary under different conditions) and can only be measured in hindsight. It is like shaving foam coming out of

an aerosol canister: the flow, direction and shape will be determined by the local conditions (angle of gravitational pull, possible obstructions, pressure in the can, viscosity—and therefore temperature etc.), only once it is out there, in its crystallised appearance, can we define its ultimate volume. And this is how we should interpret the volume of time; under stable conditions it is measurable through its flow, its duration, but as we do not know what the local conditions are, we can only determine the exact volume in hindsight.

2. Indexicality

A second category that is rooted in the “physicality” of time deals with the indexicality of time, or rather, indexicality as a point on the progression of time. This concept has a simple part and a complex part. The easy one is that of the clock. This relatively primitive machine has the prerogative to indicate “how late it is” and “how much time has passed”, and even if it is driven by the motion in an atom, it is of a fundamental different order than time itself. Firstly, it is good to realise that the naming of hours is highly, if not completely, arbitrary. Nothing would happen to the world at large if we decided to switch to an 84.7-hour-day system instead of the 24-hour system. The time measuring system has been devised to approximate the duration of the day cycle and this is far from flawless, and again, only usable under highly defined conditions. Put the same clock on the moon and all rational connection to its environment is lost. And clearly its measurement of the progression of time is not in any way connected to the real progression of time, it does not “feel” something when a second has passed as a basis for moving its arms, in fact, it is the moving of the arm that indicates that a certain moment has passed. But, as much of the other conditions are also unknown (the volume of time, the effect of local conditions and so forth), it does not really matter that the instrument is crude and imperfect, we can still make appointments on the basis of the information provided by

the clock, we can still put a cake in the oven for a certain duration of time.

It becomes more complex if we incorporate its expression in *kairos*, because then we need to take into account the entire complexity of the local conditions and the assemblage of the system. Note that “local” does not only literally refers to physical geographical conditions, but also to the notion that there will always be specific differences in whatever situation we investigate, which include mental, social, physical, economic and (seemingly contradictory) temporal differences. The consequence of this is that we can never speak of experiencing time in the same way, ultimately leading to different timescales for the same duration. In this sense, the indexical component becomes more reliable than the seemingly more objective measurement of time: it is after all often quite possible to determine when the time has come, but impossible to quantify the interval needed to move from position *x* (the moment of departure) to position *y* (the moment when it is time). The indexical value of time is under certain conditions far more important than the “chronological” time. This avatar can be seen as the completion of a certain volume of time. Regardless of the flow (the speed of time), there comes a moment when any given volume is met, therefore I have classified this alongside the volume of time. Yet the volume itself is not determined by the indexicality. Of a different order are appearances of the bearing and order in time, and both concepts are obviously heavily connected to the production of moving images.

3. Directionality

Previously I have made a classification in terms of static and non-static time and the introduction of a segregation of linear and non-linear time. For

this following section it is paramount to be aware that this taxonomy solely deals with dynamic and linear time. One could say that dynamic time is in need of a direction, i.e. linearity, to be rendered actual. A common view is the understanding of time in analogy with the central perspective; we conceive time as single lines that converge in the past, or as the ancient Greek proverb goes “we walk backwards into the future”, which is also the basis of the modernist worldview; the extrapolation of a linear view of the past into a linear future. Consequentially, logic dictates that if something moves, it moves in a certain direction: one could only speak of this movement through its (temporary) course and therefore heading. This seems rather guileless; as soon as we know its velocity and bearing, we can start to calculate its course. Yet how does such a system behave if this movement were idle, returning to the same position, for instance, in a circular or elliptical figure. If the movement would be progressively curved—like spiralling in- or outwards—it would imply that anything moving on that line would never be in the same position more than once, yet it would be subjected to a continuous revisiting of angles and relative position towards its pivotal point. As for example in the stroboscopic effect, an element might appear to be in a stable position, but this is only because its movement is disguised by the effect of a stroboscopic light. It would be imperative to investigate alternative modes of perception. Part of this could involve rethinking if whatever is being perceived is only explicable through the notion of simple linearity, or whether in fact a more complex system could be active, such as anamorphic, pseudomorphic or morphomorphic systems.¹⁰ I have no answer to what implications that would have on our understanding of the direction of time, but I think it is justifiable to consider the possibility of looking at (the progression of) time through different systems than we have done so far.

10. Pseudomorphic refers to a shape that appears to be different than it actually is (for instance, the reflection of an echo indicating a warship, while in fact it reflects the presence of a whale, or the Japanese Hashima Island, whose silhouette resembles that of a warship so much that it has been torpedoed several times

during World War II. Morphomorphic means the ability for a system or an organ to adapt to a form, yet its actual form is in fact shapeless or irrelevant (like the casting of a shadow of a cloud).

11. George Simondon coined the term “transduction”: “For the process of transduction to occur, there must by some disparity, discontinuity or mismatch within a domain; two different forms or potentials whose disparity can be modulated. Transduction is a process whereby a disparity or a difference is topologically and temporally restructured across some interface. It mediates different organizations of energy.” See Mackenzie, Adrian. *Transductions: Bodies and Machines at Speed*. London: Continuum. 2002. p. 25.

12. Hawking, Stephen and Mlodinow, Leonard. *A Briefer History of Time*. New York, NY: Bantam Publishers, 2005. pp. 48-49.

4. Sequentiality

The fourth avatar of time is closely connected to the progression and the direction of time: it deals with the sequences and orders of events. This automatically draws two issues into the equation. The first is the necessity to incorporate all the mentioned “counter-assumptions” into the question on what exact direction we want to apply to the notion of order; after all, if we adopt a different “time perspective” we could find a completely new definition on the direction of time. The second issue is that of causality, which *causes* us to move, on very slippery grounds. The prerogative of “firstness” (that which happens first) in relation to the “truth” and “ownership” has its roots in the central perspective of time: in fact it is an assumption that is conditional for the system to function. The logic of cause and effect needs to be anchored in the intrinsic security that that which has happened remains “happened”. Reality is far more complex than that. In affect theory the figure and ground principle does not apply; figure and ground are interchangeable positions, or consequently non-existent. Affect precedes affection: it is the creation of a charged environment that allows for interaction, transduction, perception and affection.¹¹ A consequence of this reasoning is that causality can never be seen as a local event, yet it can manifest itself locally. This becomes immediately clear when we look at the notion of information, which, in my definition, is the pivotal point between the virtual and the actualised; it is—for lack of a better phrase—the exchange node between both realms. The closed concept to causality that can deal with these notions

is that of non-local causality. Non-local causality recognises the input of information as a cause, yet this will manifest itself in respect to its effect. This allows for a much wider range of effects and causes, which might not be directly and locally connected, yet they can manifest themselves that way. Non-local causality is very important for the understanding of the fourth of the avatars of time: the sequentiality of time, meaning the order in which situations occur, the sequence of events. It seems fairly simple to classify events on the basis of their chronological hierarchy; event one precedes event two, therefore event two cannot influence event one. Again, this vision is grounded in the tradition of central perspective, of what happens first stays first. Yet this view is losing support, surprisingly especially among historians. There is a growing belief that history should not be seen as a fixed grid in which all that ever was has a predetermined place. As theoretical physicist and cosmologist Stephen Hawking remarks:

Space and time are now dynamic quantities: when a body moves or a force acts, it affects the curvature of space and time—and in turn the curvature of space-time affects the way in which bodies move and forces act. Space and time not only affect, but are also affected by everything that happens in the universe. Just as we cannot talk about events in the universe without the notions of space and time, so in general relativity it became meaningless to talk about space and time outside the limits of the universe.¹²

In this there is much need for alternative chronologies. The canonical view of timelines, in which the essential elements are woven together by a web of causal logic, is losing support.

5. Simultaneity

There is a growing awareness that reality—present, future and past—is far too complex to arrange along the crude and simplifying lines of causality and interdependencies. Instead, one should recognise the numerous occasions at which events unfolded simultaneously, or situations in which there were contradicting movements of which only one is seen as relevant. There are also situations in which the importance and relevance was only assigned afterwards, while those involved in the actual event (could have) had no clue of its role in history. This is not even including deliberate or unintentional exclusion of information, which would cast a complete and potentially reversing light on a given action or event. This is why the mantra “you cannot change the future, but you can change the past” is, despite its simplicity, so truly profound. Information (as the pivotal point between the actualised and the virtual) has the potential (*infoduction*) to dramatically change our entire history, as this history is built on the belief in a single-file chronology and canonical relevancy. A single line of text such as “I am not your biological father” can change someone’s entire personal history. All and everything they have ever taken for being the history of their personal relationships is jeopardised, or even permanently destroyed by this very small bundle of information. This entails the recognition of fact, without the connotations of interdependencies, meaning that although the actuality of the fact might be painful and emotionally destabilising, the event is seen as a separate string of elements, grounded and belonging in another chronology, namely the personal history of someone else, not one’s own. This, of course, demands a very strong and stable mental image of that concept, maybe an almost “religious” belief

in that construct. It supposes an unrelatedness of events in “different timelines” to such degree that even the simultaneous unfolding of those would not be seen as interfering, and although this might appear to be belonging to a very peculiar and uncommon mental condition, rather the opposite seems to be true.

Any category of cognitive dissonance, conceptual dislocatedness and emotional non-connectedness seems to have its grounding in this concept, causing the endless stream of mental and physical abuse, racism, hierarchical misuse, moral injustice and pure criminal behaviour that has been part of the chronology of humanity itself. It seems to be an asset that can be applied and denied at the same time. It is the contrasting position of non-local causality: local non-causality. This explains why there is no separate category for this type of parallel unfolding: it is the negative position of one that is already listed. The direction of time is connected through the notion of causality, to non-local causality, to local non-causality, to sequencing.

6. Proximity

So far this has only been mentioned in respect to the unfolding of different times within the realm of one type of speed of time. It is now high time to consider unfoldings of different speeds, only related to each other by a physical closeness and not by a shared chronology. The supposition I will be making here is not that there are different speeds in the unfolding of time—that would be a possibility in a different model which I am not addressing here. The system that is central here supposes that different objects, materials, organisms, non-organisms, in fact everything known today deals with the same unit of time objectively. This means that there is no difference in the objective ageing or emerging of matter in any of the mentioned structures. Yet there is significant difference in what I would call the relative effect of time on that element. If we look at

13. With “unweight taxonomy” I mean a classification that has no hierarchy in its componential “weight”. For instance a safe with its key; 99,999% of its volume, mass and structure will be in the safe, yet the key is equally important for the system to work. This asymmetry lies at the heart of understanding dynamic systems theories.

14. Latour, Bruno. *An Inquiry into Modes of Existence; An Anthropology of the Moderns*. Cambridge, MA: Harvard University Press. 2013. p. 23.

15. Guattari, Felix. *Chaosmosis*. Indiana, IN: Indiana University Press. 1992. p. 135.

the half-life time of different elements or bodies, it becomes immediately clear that there is a very large dissimilarity in how the progression of time would affect the various complexities or simplicities. If we would compare a clump of metal (iron, for instance) and a piece of wood (oak, for instance) then the difference in “life expectancy” is significant. So if we would look for a synchronisation of lifetimes (as opposed to timelines), then we would get a completely altered perceptual field with regards to the perception of time: we would have to group objects and elements on the basis of their relative position in their “lives”, which means that all concepts of “older” and “younger” would instantly be rendered ridiculous. A 90-year-old oak would be younger than a 60-year-old man, a 20-hour-old mayfly would be older than a 70-year-old turtle, and so on. These types of timescales are still operational within the comprehensible domain of humans, and the mere recognition of their existence makes one hungry for more. To exemplify this among architecture students, I often use the notion of horizontality. When we are engaged in a design process, an essential assumption is that the surfaces we build are flat, the lines we draw are straight and the angles we work with are (often) perpendicular. Yet, it does not take much imagination to see that if we would draw a line long enough, it would bend with the curvature of the earth, the surfaces would even bend in all directions, creating a dome-like structure and all the straight angles would in fact convex towards outer space and converge towards the centre of the earth. Everyone knows this, and yet we are able to live, work, build and design with the notion of “flatness” as a fun-

damental element of our environment. Apparently this system does not have to be univocal and scale-less to be workable, and perhaps that goes for more systems. This is what I mean with the reversal of knowledge; that what we can control is perceived as knowledge, although we cannot explain how it relates to that what is unknown; all that is unknown is perceived as speculation, although we can state with certainty that what we “know” does not align with that. Both systems are based on division, exclusion and hierarchy and it is my strong belief that the reductions made in and by these systems are far more speculative than any systematic that refuses to follow that road. Any system that fronts relationality as the only “essential” quality (note that the vocabulary automatically reduces the concept; essential does not exist as such, as it is the relation between bodies that is the smallest denominator), any system that starts from flat ontology and “unweight” taxonomy, is far more realistic than any of the reductionist positions.¹³ System is used here as a foundation of another mental model; inevitably the ultimate consequence of this reasoning is that there is no separate system possible, all systems are part of another system, thus rendering the notion of system useless. This is why we prefer to speak of ecologies and assemblages as that which can—to a certain extent—be isolated for observation, yet as all bodies in an assemblage are always also part of other assemblages, this isolation is only hypothetical. Is that not the same as any other reductionism one might ask at this point? Sociologist and philosopher Bruno Latour comments:

The question is not as idle as one might think, if we remember that the adventure of these last three centuries can be summed up by the story—yes, I admit it, the Master Narrative—of a double displacement: from economy to ecology. Two forms of familiar habitats, oikos: we know that the first is uninhabitable and the second not yet ready for us! The whole world has been forced to move into “The Economy”, which we now know is only a utopia—or rather a dystopia, something like the opium of the people.¹⁴

Despite the doubtfulness of transitioning from one system to another, it is my belief that this is not even a matter of choice. If anything has become clear in the last two centuries, it would be that politics cannot be isolated, not be stratified into some type of “objective” arena that has no direct attachments to the actuality of smallness and individuality. Felix Guattari warns:

Psychoanalysis, institutional analysis, film, literature, poetry, innovative pedagogies, town planning and architecture—all the disciplines will have to combine their creativity to ward off the ordeals of barbarism, the mental implosion and chaotic spasms looming on the horizon, and transform them into riches and unforeseen pleasures, the promises of which, for all that, are all too tangible.¹⁵

The proximity of timescales borders on the previously mentioned speculation on the existence of different entities living “in between” the world as we know it, simply by having a completely different referential time unit (or the reverse, where we have a much faster timescale than something else, therefore we cannot see that), with the addition that this has not to be seen as some type esoteric endeavour.

When we look at the built environment, it is rather obvious that this is not a pre-given condition and that its reality (both virtual and actualised) is subject to constant change. Structures are rendered obsolete,

constructions overhauled, expanded or demolished, buildings erected and torn down, usages changed or upgraded and social structures emerge, become redundant or are rejected, altered and modified. The city as we know it, as a place of solidity and rigid structure does not exist, we just live too fast to see it move. The instrument to register this is, of course, the camera which, by working with time-lapse, stop motion or sped up, can render these movements perfectly visible. A slightly abstract exemplification of this is found in the work *Sehnsucht* (2002) by the Dutch artist Jeroen Eisinga, which shows the decomposition of a dead zebra in a surrealist environment. He filmed and sped up the footage in such a way that the zebra appears to be breathing or at least moving, although quite the opposite is true. All kinds of other things are alive (rats, insects, maggots, bacteria etc.) except for the zebra itself. If we were to film a city for 35 years (about half a human lifetime), and speed that recording up to cover only half an hour, we would obviously see the movement of the city very clearly. This is all that is meant by the proximity of timescales, and that is all but abstruse. We are already faced with a number of problems caused by systems and industries that no longer exist, and that number will only increase. Think of chemical or nuclear waste and instruments of warfare that include toxic, biological and nuclear components. All the effects of industrial processes and infrastructure in terms of production (demolition of natural habitats, exhaustion of resources, direct pollution), markets (exclusion of alternatives, elimination of pre-industrial organisation), and consumption (waste, overconsumption, fresh water issues, inequality). We can easily see that the timelines of these problems are much longer than our own. A city like Amsterdam, for instance, faces environmental issues on a daily basis, which have their origin in industries that have long been extinct: the inner city still has sections polluted by the industry of the eighteenth century, while along the perimeter of the heart of the city much pollution has been found that is the result of gas production facilities of the nineteenth century, and in certain

16. McLuhan, Marshal.
*Understanding Media: The
Extensions of Man*. London:
Routledge. 2005 [1964].

areas a plethora of polluting elements can be found caused by former shipbuilding, car assembly and oil processing industries, which all ceased to exist in the last 50 years. In other words, we have surrounded ourselves with timelines that are much larger than we can oversee, and that has caused us to lose ownership of said problems.

Necessity and cause are two different entities, their connection only rendered legible at the moments of morphogenesis, territorialising and coding. In the formation of any (metaphorical) shape (morphogenesis) the difference between cause and necessity can only be determined from the perspective of either the state before, or the state after this formation (in retrospect). Seen from the perspective of “the shape”, certain elements are necessary to come to said shape, yet seen from the perspective of the elements the shape can only be perceived as caused by their presence as it cannot be known what is necessary to form said shape before its very existence. In this interplay causality and necessity “battle” over this perspective, claiming the territory of their effects in the chain of events. This territorialisation of perspective is expressed in the semiotic domain as forms of coding, in which, for instance, denotations and connotations alter place in the semiotic chain of events and meaning. In the context of the proximity of timescales the difference between necessity and cause can only be defined on the basis of the perspective of one or the other timescale. In the one timescale one could be looking into the future (cause) of the other, while simultaneously looking into the past (necessity) of the other.

7. Requirement

The seventh and eighth avatars of time—significance (how valuable) and requirement (what is needed)—might be seen as existing linear to each other as well as parallel. To start with the linear, the first phase could be that the requirement of time is the amount of time that must pass (or not) to reach a certain goal. Very physical examples can be found in any situation in which only a restricted amount of physical matter is able to move from A to B per second. For instance, when filling up the car at a petrol station, or the amount of electric current that can pass through a copper wire of a certain diameter. These amounts of time that must be invested to reach a certain outcome are classifiable objectively; if the water tap passes x litres of water per minute, and I need to fill a 10-litre bucket, then it will take 10/x minutes to fill that bucket. The reverse logic is also very measurable and could be called objective in that sense. If a certain type of food deteriorates within five days to a level below the edible threshold it needs to be discarded. In some cases these two lines need to be in conjunction with each other to lead to a certain (desired) outcome. A soufflé needs to be in the oven not too long, but not too short either, otherwise it will not have the desired consistency. Biology is full of such balances: in many zoological processes there are designated timeframes, windows of opportunity for certain behaviour or acts based on the balance between too long and not long enough. This is exactly why we have to be careful with naming this approach “objective”: none of the processes above are described fully without explicit

reservation on conditionality being made. Flow of liquid also depends on many other factors than time alone, such as pressure, temperature, viscosity, and all other forces that come with the material it is surrounded by. Even the most precise description of such a system is not capable of dealing with all these elements, and can therefore only approximate the actual situation.

8. Significance

The second phase in this linear sense of aligning the avatars requirement and significance, is to observe the time that is needed in a non-objective way, similar to the reasoning followed above. The definition of the significance avatar could be the time needed to reach a desired level of communication, affective transfer or critical mass in a decision-making process. Obviously this works three ways again: there is both a minimum and maximum amount of time and a precise amount of time. In contrast to the “objective” approach in the requirement, the determining elements for building the thresholds in these equations lie in the realm of perception, and might therefore be considered less precise or even trivial compared to the hard components of the exterior, such as those mentioned in the requirement section.

As we deal with the eight avatars of time as ways of learning through perceiving time, not as a mode of investigating the nature of time directly or descriptively, it is in fact this mode that might be far more precise than any of the others. This mode operates on the boundary between perceiving and knowing, albeit not in a descriptive fashion. It is not learning by doing, it is not the learning that results from a couple of cycles of trial and error. It truly deals with knowledge that is accumulated itself, as a result of many elements, including all “hard” facts, all previous knowledge and all intuitive inputs combined. This is not a linear process, and it is certainly not a logic of necessity: it could well

be that not all of the components need to be there, or in any perceptible amount. The outcome of such a process indicates only the contingent obligation to reach that particular state, making that state a destination that could be reached through different roads.

Conclusion

In the end it is the relevance in respect to the main questioning in this essay that caused the formulation of this taxonomy of perceptions of time. As indicated, this process started from discussions with students on ways of editing their audiovisual products and the *montage* of their work, but slowly it grew bigger than is needed for that purpose. This classification of time is very helpful as some type of ruler applied to different types of media, and their behaviour. In analogy with Marshall McLuhan’s system of hot and cold media that classifies types according to their ability to contain and release information, we could use the avatars of time to classify the way they handle, absorb, release, convert and modify perceptions of time.¹⁶ The eight avatars of time are a system for investigating media capacities, both in the conscious and non-conscious realms, and it produces a shadow of reasonable doubt on most of the existing epistemologies of time itself.