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Capricious Texture of Time in Awareness and Art

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Abstract

We present a speculative account of lived-time at the level of sentience as distinct from sapience. It implies refraining from reference to clock-time. The account is necessarily in terms of meaning. Thus, familiar concepts such as the specious moment, retention and protention mechanisms are re-evaluated. Lived-time does not have a 'time-line topology'. It has a volatile, irregular texture rather than a sequential linear order. Indeed, lived-time is necessarily an articulate moment, because awareness is not extended, but here-and-now. Thus, Gestalts in static images often have temporal qualities. Yet they can hardly reflect clock-time, as they are 'frozen happenings'. This applies to many works of art. We especially focus on painting, sculpture and cinema. Narrative structures in the arts have a close similarity to lived-time. Thus, the analyses of the arts and of visual awareness, including day-dreams and dreams, mutually illuminate each other. Our account rides the edge that separates sentience from sapience.

Keywords

Clock-time, lived-time, time in art, cinematic narrative, time in painting, time in sculpture

1. Introduction

Any account of *lived-time* is necessarily speculative because it sticks exclusively to bare experience (Husserl, 1997). Such accounts are rare. Virtually all — including those from transcendental phenomenology (Husserl, 1964

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[1893–1917]) — at least implicitly refer to clock-time (see Note 1). This silently introduces an external perspective. In contradistinction, awareness proper is here-and-now. Lived moments are occasions of Hoyle's pigeonhole theory of time (Hoyle, 1966). Hoyle's novel vividly illustrates what we mean with the 'capricious texture' of time. Time is in no way a linear thread. The moments include the now of the now, the now of the past and the now of the future, but distinct moments have no necessary temporal relation.

Accounts of temporality have to be semiotic. This biological approach was pioneered by Jakob von Uexküll (1909, 1920). It eventually resulted in 'ethology' (Note 2). Recognizing that humans are sentient animals before being sapient selves suggests that this might address human proto- or pre-conceptual mentality. This again suggests a possible relation to the arts.

The experienced 'flow' of self–induced *movements*, in multi–modal awareness, is prior to clock-time. In fact, one does not appear to 'feel' clock-time at all (Sheets-Johnstone, 2014) (Note 3).

In this paper we refer to 'awareness' (Koenderink, 2012a) as relating to *sentience* and as distinct from *sapience*, implied in (human) 'consciousness' (Note 4). Since awareness proper is ineffable, the ability to point to such experiences is the prerogative of the arts (Fiedler, 1887; Hildebrand, 1893).

Awareness is here-and-now. Estimates of the shortest duration of an awareness are like the tenth of a second, but belong to external description. Phenomenologically, the atom of time is "… *in ictu oculi*, …" (1 Corinthians 15:52; the King James Bible has … *a moment, in the twinkling of an eye*, …) (Note 5).

The transcendental phenomenology of lived-time is not only of academic interest. It has immediate applications in the understanding of the visual arts. These are about *perceptions* as distinct from *conceptions* (Note 6).

We abstain from references to clock-time, because clock-time derives from an external perspective. We also abstain from differentials, since these derive from clock-time. However, we admit *change* (Note 7), especially movement, as an elementary *quality* distinct from a change–with–clock-time.

This bars the way to kinematic extrapolation, either forward or backward in clock-time (Note 8). Such extrapolation is an essential element of the retention or protention mechanisms (Bergson, 1889) (Note 9). It is involved in many physiological and somatic processes that run largely autonomously (Note 10). But pure change or *'flow'* fails to enable formal kinematical extrapolation.

One may also admit *goal-directed* elements of experience. Goals derive from emotive or instinctual drives and lead to intentional actions, often movements. Their sequential nature does not refer to clock-time, but implies actual and desired (counterfactual, future) states.

A biological, that is, semiotic perspective is required for transcendental phenomenology. This is because the account has to be entirely in terms of meaning.

We start with an Uexküllian model of the mind–body–environment Trinity. The model of pre-conceptual mind fits the biological setting. It is an implementation of von Uexküll's *Innenwelt*, complementing the *Umwelt*. In von Uexküll's terms, there is no bridge that leads from the brain to the mind (Diekwisch, 1984; Höfer, 2007; Petit, 2003; von Uexküll, 1940) (Note 11). Where there is no possible science, one requires a heuristic (Note 12).

An apt heuristic is due to Erwin Schrödinger (1944). It fits the setting of the natural 'language' suggested by Dieter Lohmar (2008). Meanings are imposed by psychogenesis. It is *sense making* according to Giambattista Vico's (1968 [1744]) *Verum Factum*, close to von Uexküll's original semiotic (*Bedeutungslehre*, von Uexküll, 1940). As applied to the human case there are parallels to Husserl's notions (Note 13).

We depart from the fact that humans before 'being human' are animals too and that animals are not robots (Schilhab, 2015) (Note 14). Biological notions apply to humans without essential change. Animals are capable of many feats that would conventionally be labeled 'cognitive', but animals lack 'sapience'. Sapience includes the use of symbolic, conceptual systems that piggy-back on the common animal foundation. Examples include spoken and written language, music, visual arts, dance and more (Cassirer, 1923–1929; Langer, 1953).

Our model of psychogenesis refers to Jason Brown's (1977, 1991, 1999) insights, based on extensive studies of psychiatric patients. It complements the biological model.

We then proceed to analyze the texture of lived-time. It is based on the structure of awareness, either free intuition, or *concrete actuality*. Intuitions are driven by emotive feelings, perhaps memories, or counterfactual anticipations. *Concrete actuality* implies sensorimotor feelings and externalization of invariants.

Awareness and 'actuality' are practically synonymous. In transcendental phenomenology, awareness is a brute fact. The texture of lived-time is part of its structure, akin to Leibniz's (1997 [1714–1716]) *Monadology*.

Lived-time is by no means linear, like clock-time. Its topology is indeterminate and fluctuating, although polarized locally. The polarization is due to the flow of movements and the semiotic goal-directedness of emotive longings. This teleonomic arrow of time contrasts with the time of physics (Barbour, 1999), which has no arrow.

In a final section we explore the relations between lived-time and artistic structure. We propose that the relation is tight and that the study of one topic

may well throw light upon the other (Note 15). This even extends to arts that explicitly address the temporal domain such as cinema (Pollmann, 2013). It involves the uncharted region between sentience and sapience.

With the temporal relations in the arts we enter the no-man's land between sentience and sapience. This largely unexplored region is essential in any discussion of the arts. Indeed, art is a typically human enterprise. Animals (sentient beings) have no art (Morris, 1962). But neither has sapience proper. Mathematics has neither art, nor jokes (Note 16). This in-between position equally holds for poetry, even though it has an explicit relation to language.

2. Preliminaries

2.1. The Animal and Its Umwelt

Animals have sensitive body surfaces that serve as sensoria. In highly articulate animals the physical structure of the changes at the sensitive body surface is mapped on brain structures that we refer to as 'blackboards' (Note 17). Blackboards are volatile buffers that are overwritten in real-time by environmental structure. They store the action patterns of the environment on the body in brain readable form, suitably filtered and formatted (Note 18). The momentary blackboard activities are meaningless, for structure is not data (Note 19).

Animals have somatic structures such as muscles or glands that act on the environment. In highly articulate animals the generic actions are taken care of by dedicated drivers. These generic actions can be triggered conveniently by way of 'keyboards'.

Most of the animal's brain volume is dedicated to the implementations of blackboards and keyboards (Note 20). Even so, the activity in these parts tends to be *irrelevant to the psychogenesis of awareness*, as they are largely autonomous and mainly serve to implement a basic 'robotic' infrastructure (Note 21).

Animalicity occurs in intentional probing of the blackboards and playing of the keyboards. Such abilities draw on a large store of 'sedimented experience' (Husserl's term) and may be understood as implementing a 'user interface' (Hoffman, 2009; Hoffman *et al.*, 2015; Koenderink, 2011). The sedimented experiences are associations and habits. David Hume (1938 [1740]) aptly describes habit as 'the cement of the universe'. Indeed, sentient beings are aptly characterized as autonomous habit machines.

This is captured in von Uexküll's 'new loop' (*Neuer Kreis*), a process that involves both the body and the environment (Fig. 1). The agent acts on the environment through the keyboards and suffers actions of the environment through the blackboards. The 'counter-world' (*Gegenwelt, Spiegelwelt*) enables the animal to anticipate sufferings on the basis of its actions, thus

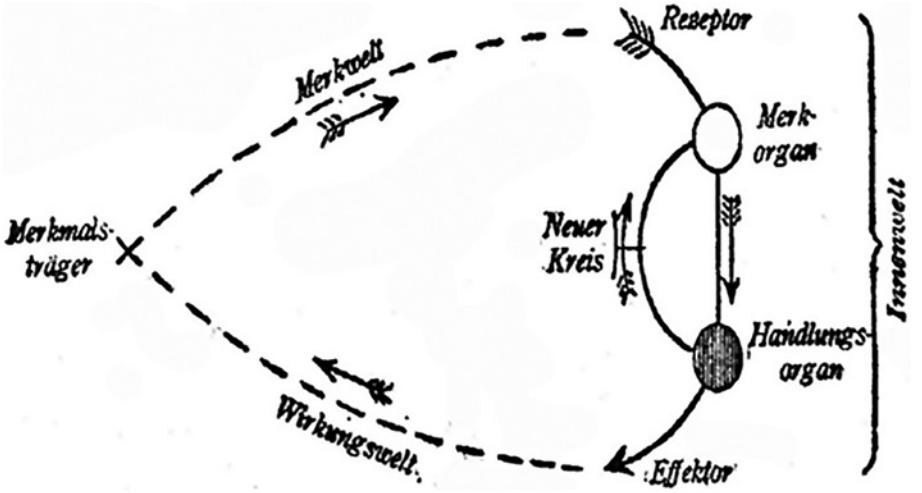

Figure 1. Von Uexküll's *Neuer Kreis* ('new loop'). The dashed lines relate to the environment, von Uexküll invites you to ignore them. It is the *Gegengefüge* ('counter structure'), that is the physical structure that confronts the animal. The *Merkorgan* ('noticing organ') is a blackboard, the *Handlungsorgan* ('handling organ') a keyboard. In a reflex machine one would have a direct link from the blackboard to the keyboard, implying that there is no true agency. The 'new loop' involves anticipations of the effects of actions, it involves a simulated environment, a *Gegenwelt* ('counterworld') or *Spiegelwelt* ('mirror world'). Hence the indication *Innerwelt* ('inner world'). The inner world may be understood as a user interface. The *Gegengefüge* is only available to an external observer, say 'God's Eye' (Berkeley, 1709; Koenderink, 2014). In the internal account the physical and the mental objects are identical.

enabling efficacious acting in the world. The user interface (Koenderink *et al.*, 2019) is entirely dedicated, it implements the life style.

The counter-world comes up with counterfactual, alternative possibilities instead of a computation of the state of the world. Thus, awareness rarely is of some well-defined 'reality' (Note 22). It has an implicate structure. This is closely related to the artistic quest (Hyatt, 1992) 'what else is it?' The meaning of anything is implicit in the bundles of metaphors that pertain to it.

The characteristic agency of animals is due to 'appetites' (Leibniz, 1997 [1714–1716]) launching creative probings driven by emotive factors (including instincts and drives). Animals are by no means mere reflex machines, they are proactive agents of specific kinds.

Lived experience is not exhausted by awareness. Much of our behavior is 'automatic', that is to say, is handled by the body in the environment without much of an appearance in awareness.

When such somatic processes enter awareness, they change character and tend to be taken for sensations or actions. For most processes we possess only a subsidiary awareness (William James's "fringe"; Mangan, 2003), but

experience is grounded in them. Even in its presentations lived experience remains pre-reflective.

For professional dancers the kinesthetic body is a major sense organ (Sheets-Johnstone, 1999), but we all have a subsidiary awareness of our body. The body (Note 23) is more than just another physical object in the environment, *it is the pivotal anchor*. It grounds us in the physical world.

This content of lived experience may be identified with Husserl's 'hyletic data'. It is yet another manifestation of the essential unity of body, mind and environment. Awareness yields only a narrow window on lived experience, reflective thought even less (Note 24).

2.2. The New Loop

The *Umwelt* of an animal is exhausted by all its potential actions and all its ways of suffering action by the environment. Thus, it is far more restricted than the 'physical environment'. In order to act efficaciously, the agent wields a model of its *Umwelt*, its counter-world (*Gegenwelt*, or *Spiegelwelt*), its *user interface* (Note 25). Different from neuro-ethology, or neuro-cognition, von Uexküll had a *semiotic*, rather than a neuro-physiological concept in mind (Note 26).

Von Uexküll understood the user interface as brought about and sustained through its use, much like the muscles are strengthened or weakened through their use. The animal does not so much 'use' its body, as that it *is* its body. The body ('lived-body' [Husserl's *Leib*], as distinct from 'living body' [Husserl's *Körper*]), reflects and implements the life style.

We denote any entity that is 'mental' — in the sense of intentional, meaningful — as 'thought'. Then most elementary thoughts are not different from somatic processes, e.g., the primary thought of sorrow is the crying, a hyletic experience. Generic 'thoughts' are intentional movements.

Boundaries between body, mind and environment are largely conventional (Note 27). Body, mind and Umwelt form an inseparable Trinity. The mind is 'spread out' and the tree in your mind is identical with the tree in front of you (Manzotti, 2017). These notions may need getting used to, since they deviate from common naive beliefs in the sciences. Yet they are hardly novel.

2.3. Schrödinger's Psychophysical Bridging Heuristic

Awareness and somatic processes have distinct ontologies, thus there can be no causal explanation of awareness in terms of somatic processes (e,g., brain activity). 'How awareness arises' is a scientific problem for the external observer (Note 28), whereas for transcendental phenomenology awareness is a *brute fact* — not science.

Schrödinger (1944) proposed a heuristic that has been reinvented multiple times. His proposal is that awareness arises when intentional poking encounters a friction, for this is where the animal *meets the world* (Note 29). This admits of degrees, thus it offers a way to understand how awareness might develop through evolutionary processes, starting from the simplest proto-life forms (Riedl, 1985, 1987, 1992; Riedl and Kaspar, 1979).

A closely related notion is that awareness is correlated with *novelty*. Although this is essentially Schrödinger's notion again, it is of interest because related to *creativity*. As Wolfgang von Goethe noticed, awareness is an *artistic* process (Wellmon, 2010). This stresses the fact that awareness is *esoteric* (self-generated). The poking of the environment is due to appetites, instincts and drives, rather than reactions to environmental stimulation.

Thus awareness is necessarily of what is relevant to the animal in terms of its life style and longings. These are the *affordances* (Note 30) (Gibson, 1978) or von Uexküll's *functional tones* (von Uexküll, 1920).

2.4. Brown's Account of Human Psychogenesis

Jason Brown (1977, 1991) (Note 31) describes psychogenesis as a systolic process, in legato style, that generates awareness from scratch at a rate of a dozen beats per second. The process starts in the evolutionary old, deep parts of the brain and ends in the most recent surface additions, like the neocortical blackboard structures.

The process involves the evolution of a large number of subprocesses that start out as vague emotions and evolve over dreamlike states and imagery (not necessarily iconic) to articulate accounts of actuality. The subprocesses diversify and compete not unlike the evolution of species, albeit on vastly shorter (clock-)time scale. The survivors lead to objectified entities that are experienced as existing in the environment. At that stage they are replaced with the survivors of the next beat, which was already under way.

We propose to understand these processes as akin to forensic investigation (Note 32), a *meaning-imposing* (Husserl's *Wertnehmung*) process (Koenderink, 2015). They start with the posing of essentially arbitrary 'plots' (Husserl's *hyletischen Antizipationen*) that allow initially vague anticipations.

Investigation implies searching for what might be construed as 'evidence' and 'sharpening' of the plot. It is a self-focusing process, not unlike what goes on in the game of Twenty Questions (Richards, 1982, 2018; Walsorth, 1882). The plot uses the blackboards, allowing it to ignore the bulk of the structure and imposing sense on what is promoted to 'evidence'. The plot also allows the completion of 'lacking data', a vital form of hallucination.

In the interpretation the investigator wields adaptable template structures from the user interface (Husserl's *typifizierende Apperzeption*). A successful

investigation yields a story that *makes sense* and accounts for singular structures in the blackboard that would be hard to explain otherwise. From the perspective of perception it is an 'analysis by synthesis' (Jin and Bhanu, 2015), rather than an inverse optics (in the case of vision) algorithm (Marr, 1982).

An investigation may be terminated when a case grows 'beyond reasonable doubt', but often will be terminated due to (clock-)time constraints. In either case there is a measure of the 'strength' of the case, enabling *competition between investigators*.

Even the strongest case is not 'true'. 'Truth' is a notion from the external perspective, for it requires an independent knowledge of the environment. What counts from an inner perspective is whether the story *serves* the agent. The biological (semiotic) understanding of 'truth' is that it 'is made' (Vico, 1968 [1744]).

Some investigations never reach termination. Many do not make it into awareness. There remains a limbo of imagery and feelings of diverse nature and articulation. Part of it appears in William James's "fringe consciousness".

The investigations that mark the end of psychogenesis are largely externalized and are experienced as *concrete actuality*. Concrete actuality is a *thought*, rather than a physical state of either the brain or the environment. It is firmly anchored in the mind–body–environment Trinity and it serves life.

2.5. Lohmar's Natural Language and the Innenwelt

Feelings, actions and perceptions are mental entities, thus *thoughts*. Many processes usually considered somatic are thoughts too — we already gave the example of crying — or intentional movements.

Many thoughts have obvious somatic roots. Instead of thoughts eliciting physiological reactions, somatic processes often are the original thought.

When thinking 'blue' one tends to get a short glimpse of that quality (at least we do), which might well be the 'original thought' and is indistinguishable from the result of certain physical stimulations. The observation that thoughts (or phantasms) may be equivalent to perceptions elicited by physical stimulation was considered of fundamental importance by Kant. Husserl's *typizifierende Apperzeption* hints at the same concept. Such thoughts lack conceptual, linguistic origins. There is no problem to ascribe them to animals too. The topic has given rise to philosophical speculations about the ineffability of qualia (Nagel, 1974).

Thoughts span a broad spectrum from dreams, daydreams, various types of multimodal imagery to even concrete actuality. In the latter case the thoughts have been objectified and externalized.

Concrete actuality 'explains' blackboard structures and accounts for sensorimotor correlations. It is much less 'free' than imagery. Yet it is not ontologically

different from it. The freedom of imagery allows counterfactual 'experimentation', which accounts for the biological importance of inner *thought*.

In the Hominidæ thoughts were *shared* through the mirror neuron system (Rizzolatti & Sinigaglia, 2008). This allows a hands-and-feet communication system (Lohmar, 1993, 2003, 2008, 2014). It is doubtlessly the social glue of the early hominids. It accounts for much of the social glue in modern society.

We refer to this personal inner thought and interpersonal communication system as the LOA ('Language of the Ancients'), which seems an apt, pithy term (Note 33).

Our spoken language piggy-backs on the LOA, depending for its concrete content on LOA thoughts. Interactions between the LOA and reflective thought are important because they bridge the sentience–sapience gap.

Von Uexküll's *Innenwelt* coincides with the LOA in the case of the vertebrates. One may only speculate in the case of octopuses or bees, since we lack empathic connections to alien minds.

The most common LOA thoughts are intentional movements. This is the generic case. It is how organisms come to fit the body–environment complex in order to build the mind–body–environment Trinity.

Movements are usually acted out in concrete actuality. In daydreaming, or dreams, they are not necessarily accompanied by motor actions. However, subdued movements are common in dreaming humans and animals. Even certain invertebrates such as the cuttlefish reveal such behavior (Frank *et al.*, 2012).

Generic movements simply occur. It is not that there is a prior decision to act followed by the construction of a motor program, followed by the actual movement. There is an undivided process, the movement, which is also the LOA thought. Generically, reflective thought is not involved. The LOA is not tied to rationality, symbolic systems, or linear progression, nor is it tied to a brain (Note 34).

Many generic thoughts have the structure of happenings: A *becomes* C, *due to* B. Smiles, hand-claps, steps, shrugs, tying shoe laces, or raising the hand in greeting are simple instances. Temporality is 'lived' through habitual kinesthetic flows related to the body moving, or handling objects. It is accompanied by a feeling of control, of 'being able to move'. Animalicity is its own cause.

This kind of temporality is not punctuated by '(clock–)ticks'. The kinesthetic flows are more akin to melodies.

2.6. The Specious Moment

The *moment* as a knife edge between past and future, but partaking in neither of these, is an awkward concept. This is even true in the case of clock-time (Note 35).

As William James (1893, p. 609) clearly perceived, this is why one cannot do without the concept of a 'specious presence'. However, the specious moment is a term from the external description, because it relates to clock-time. From the inner perspective it would simply be the Gestalt–like unity of actuality (Note 36).

Actuality has structure. There is no lived-time in dreamless sleep. It spans necessarily a finite clock-time interval since there is — per definition — no structure at a point (Euclid: "A point is that which has no part"; Euclid, 1956 [ca. 300 BCE]). There is no particular reason why it should be some fixed interval. It is sufficient that it be a single Gestalt.

That 'actuality' paradoxically includes both past and future was eloquently described by Saint Augustine 1300 years ago (Augustine, 2012). The notion is not particularly original.

3. The Texture of Lived-Time

The biological background serves to piece together an account of the texture of lived-time. It is based on the set of investigator reports at the conclusion of the concrete actuality. Each report links to blackboard structures and related keyboard scripts that the report quotes for 'evidence'. This connects the actuality to the current state of the body–environment complex (Note 37).

The reports connect an initial state (the 'past' or 'retention') to a terminal state (the 'future' or 'protention') by way of a 'story', a 'plot', or 'explanation', rather than a causal connection. The notion of 'causal connection' cannot be given a rational sense (Hume, 1938 [1740]). Instead causality is a mental tool of 'sense making'. All reports make (or *are*) sense, even if mutually contradictory.

Even the shortest reports have some structural complexity. This is the essence of Bergson's (1889) *durée*.

Reports have no fixed footprint in clock-time. Those of actual relevance we call *happenings*. Their footprints are certainly short. *Episodes* are concatenations of happenings in sequential order. They involve a higher order report (though not a narrative). Meaning is built on meaning.

Episodes do not necessarily have a broad footprint in clock-time. They too may happen in the twinkle of an eye. Well-known examples include people experiencing a flashback of their life's story in the course of a fall from a roof.

In dreams and daydreaming one deals with *fabulæ*. Unlike episodes, fabulæ are not necessarily in sequential order. A fabula is a nexus of episodes, based on links that depend on arbitrary associations.

3.1. Happenings

Happenings are Gestalts in that they cannot be divided into meaningful parts, yet have structure. A handshake is a happening, there are no partial handshakes.

Generic instances are the delivering of a blow, the breaking of a beer bottle, a smile, a body going limp, or the being of a stone.

The 'being of a stone' is the mere presence of a stone throughout actuality, it has a trivial past and future.

One may think of a happening as the presentation of a multimodal video sequence, including a keyboard script. It may occur in a dream, a daydream or in concrete actuality. In the latter case the presentation is in vivid 'virtual reality', externalized, the keyboard script actually being executed.

In any case the presentation is a LOA thought. It is concrete, for the LOA works with perception as opposed to conception. Hence the LOA does not recognize negation. 'There are no pink elephants and blue mice before me' cannot be thought without having the phantasm of at least a pink elephant and a blue mouse. The LOA does not rely on a framework of logical reasoning, its structure depends on a nexus of arbitrary associations (Berkeley, 1709), Husserl's 'sedimented experience' (Lohmar, 2008), Hume's habits (Hume, 1938 [1740]).

3.2. Psychogenesis

Numerous investigations run their course in the genesis of actuality. In the earliest stages there are no more than vague feelings, as the investigations articulate they become dreamlike images, in the latest stages articulate hallucinations that may become objectified and externalized (Brown, 1991; Koenderink, 2013, 2015).

In awareness, investigator reports are concrete actuality. Most do not make it to that stage. Even those that make awareness may not be effective, because concrete awareness needs to be *coherent*.

This applies to keyboard scripts, because only one can actually be executed at any given time. It is more relaxed with perceptions, where ambiguities are not a problem. Ambiguities are noticed mainly in formal experiments when a unique response is enforced. Otherwise it is unproblematic to live with them.

That there is a huge store of un-actualized reports can frequently be noticed as psychogenesis swaps one report for another in cases of vague, or ambiguous perceptions (Koenderink, 2012b). Part of this chaos occurs in subsidiary awareness as William James's 'fringe', a kind of limbo.

As reports actualize in dreams or daydreams, there are no externalized objects, nor are there kicks or shoves. Although the keyboard script is important, it remains at the level of pure LOA thought and does not lead to major movements of the body.

This is observed in sleeping dogs, as they utter muted sounds and send muscular ripples moving over their bodies. These observations suggest that the dream images were close to completion and might well become objectified in the waking stage. No doubt, the same happens with humans.

In concrete actuality the keyboard script leads to overt kicks and shoves and imageries are objectified to objects 'out there'. Such LOA thoughts are experienced as being acted out in the environment — which they are.

Nothing can be more concrete, yet one no less deals with LOA thoughts. This is yet another case where the notion of a mind–body–environment 'Trinity' is crucial. It is noticeable in cases of a particularly close merge of body, mind and world as in dance, or the martial arts (Sheets-Johnstone, 1999).

As reports evolve, this implies continual rewriting the initial and terminal states as well as the story and the selection of data promoted to evidence. Story, states and evidence form one 'case' together. They have to be considered as inseparable. It is not different from a case brought forward by a prosecutor in court.

This makes good sense in terms of meaning, for the meaning of the past is to be sought in the future and the meaning of a future state is to be found in the past. Of course, it sounds odd in terms of the conventional clock-time accounts, where it would be considered 'retrocausation', or 'magic'.

3.3. No-Self, Multiple Selves and Temporal Scale

People often ascribe 'character' and thus self-hood to their cat. Such a 'self' is the patron's construction. The term anātman (Sanskrit: *no-self*) fits the cat better. As sentient beings go, humans are special, because they also are sapient. Here one has a split (Kahneman and Riis, 2005) between the experiential (sentient) self (which is no-self) and the remembered self (which is narrative). On the sentient side one has those living a picaresque (episodic, haphazard) existence and on the sapient side those living a straightforward (diachronous, linearly ordered) life (Strawson, 2004). In this paper we concentrate on the picaresque life style, as it naturally fits the artistic character (Note 38).

Although the diachronous life is often likened to a single thread, it tends to be more like an alternation between what are often called 'multiple selves' (Bruner, 1991; Kubovy, 2015, 2020; Lester, 2012). This tends to play on a time scale that is longer than what plays at the momentary reactions to art work. As mentioned earlier awareness itself already has an implicate structure in the moment now.

Happenings naturally concatenate to compound episodic reports, or may even be assembled into fabulæ. For those of the diachronous persuasion the life story narrative is perhaps the most complex one (McAdams, 2001).

As we know both episodic memories and narratives are also continually rewritten. Childhood memories grow clearer with age. Often one becomes aware of motives only long after the acts. The structural complexities of such fabulæ is very diverse (Feyles, 2013).

'Memories' are confabulated on the spot in the light of experiences that happened long after (in clock-time). Memories are thoughts that may actualize

as dreams or imagery. Some make it into concrete actuality as when you execute rehearsed dance movements or deliver a specific strike or kick in a fight.

There is not necessarily a before-or-after relation between memories. Some are temporally related, some are not. For most memories such temporal relations are irrelevant anyway.

Formally, lived-time is not a serial order, but at best a partial order. In practice, it is a loosely connected bundle of mutually asynchronous partial orders.

The single deciding factor is that memories are useful if they serve to act efficaciously in actuality. Otherwise they are curtailed, abstracted, or suppressed.

That perhaps explains why childhood memories are so clear and sparse.

4. Visual Gestalts as 'Happenings'

'Happenings', including a 'story', a 'past' and a 'future' can be immediately seen in static images. This remarkable fact was extensively described and investigated by Pinna and collaborators (Pinna, 2010; Pinna & Deiana, 2015; Pinna & Reeves, 2009), see Fig. 2.

These 'instantaneous' happenings are pure visual Gestalts; they are immediately presented in awareness without any trace of reflective thought. The ubiquitous presence of Gestalts, presenting the LOA with objects, may be reified as a *Bildungstrieb* ('urge to form'), a major biological advantage.

It is hardly surprising then, when their nature is like a 'frozen movement', or happening. One not only sees a happening, but also material properties such as elasticity, brittleness or cohesion.

The simplest case is illustrated in Fig. 2 top left. The object looks in pristine condition, it has a 'being', like a stone. Nothing happens to it, it looks like it was like this in the past and one anticipates that it will endure in the future.

In the other figures we see 'things happen' to the object. The past is the object in ship-shape state, in the present some agency is acting on the object, the future is a counterfactual anticipation. It is immediately seen, for instance, that the little square that 'broke off' in the image in Fig. 2 top center, will doubtlessly continue to 'fall to the floor' (Note 39).

Phenomenologically, the agency that causes the object to 'suffer' is seen to be either acting from internal or external causes. The broken off part in Fig. 2 top center seems due to an external cause, as does the 'shattering' due to an amodal blow at top right. The deformations in Fig. 2 bottom left and bottom right look due to some internal cause, like one sees in moving organic bodies.

The case in Fig. 2 bottom center looks ambiguous. The swirling deformation can easily be 'seen as' due to either internal or external causes.

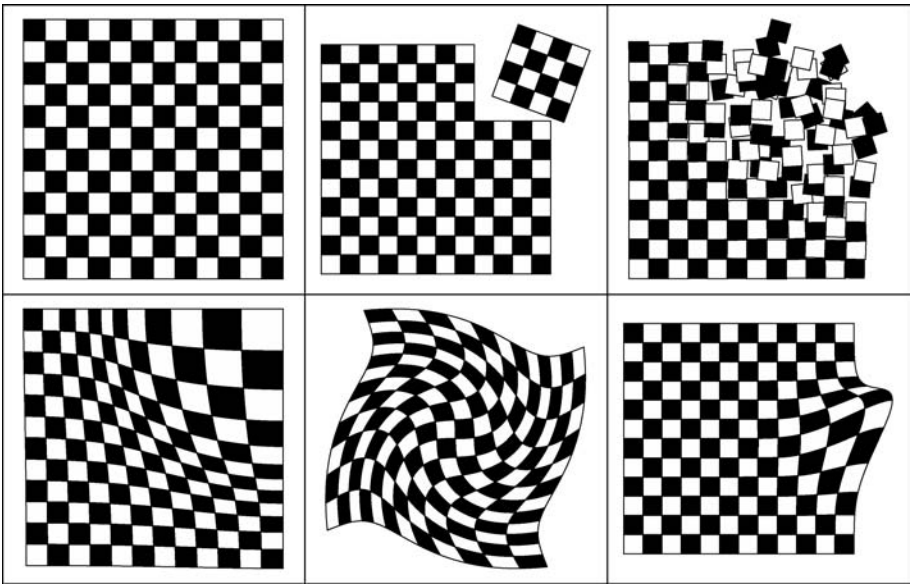

Figure 2. 'How vision creates meaning', from Pinna, 2010; Pinna & Deiana, 2015; Pinna & Reeves, 2009. In all cases one is aware of a 'happening' with a clear 'story', 'past' and 'future'. There is also an immediate 'affordance'. 'Things' are actually *affordances* as seen as counterfactual happenings. These basic 'Gestalt' experiences enable numerous artifices such as comic books or industrial icons. It is not as if we were discussing mere academic instances.

The point we make is that *static images* elicit presentations of 'happenings'. This seems to be the generic case, equally applying to images like that of Fig. 2 top left, in which its nature as a 'happening' is easily overlooked. Yet both the 'memory' and the 'anticipation' are evidently present and so is the story ('simply being').

Any 'thing' presented optically is a Gestalt and therefore a counterfactual happening, which is to say an 'affordance'. Things that merely are and continue to be need not to be noticed, although they help maintain situational awareness.

This places the awareness of 'things' (Gestalts, 'stories', 'remembrances' and 'anticipations') squarely into the context of biological semiotics. This is what an organism needs in order to deal with its immediate future, which is all that counts for its concrete actuality.

Animals are not philosophers, nor are the majority of people. Our presentations allow us to act efficaciously in *actuality*. At least — hopefully — most of the time.

5. Temporality in the Arts

Lived-time, actuality, or concrete actuality, are synonymous with life itself. Small wonder that lived-time is of vital importance in the arts.

Some art forms are coordinated in both clock-time and lived-time, examples are music and semi-formal dance (Langer, 1953). These arts demand a special discussion.

We only consider the conventional visual arts — painting and sculpture, as well as narration in writing, and especially cinema. We do not consider poetry, it really demands a special approach too (Lakoff and Turner, 1989; Langer, 1953).

5.1. The Visual Arts

Paintings and sculptures come to us as physical objects, thus static in terms of clock-time. Yet lived-time plays a key role in their viewing.

One aspect is the facture, the brush strokes and chisel marks that emphatically show the intentions of the artist. They reveal both temporal order and the flow of execution (Fig. 3). Larger, painted macchie often show temporal order through mutual overlap relations. For instance, skyholes in treetops are often painted last, over the rendering of foliage. This avoids the impression of the paintings as a child's coloring book — 'painting by numbers' — and presents a spicy contrast between fore and aft in the environment and on the canvas. Fields of linear elements or dotted forms are read as qualities, a bit like color, apart from their representational functions.

Figure 3. Vincent van Gogh (1853–1890), strokes in a drawing. Notice that you can see in what direction the individual strokes were drawn, as well as the sequence in which the various strokes were put down. The *facture* yields a rich insight into the execution, it adds *time* to the graphics. It is one reason why it is so much more rewarding to study actual pieces than — usually small — electronic copies in which the physical structure is lost.

Figure 4. Henry Cartier-Bresson (1908–2004) tripped the shutter of his trusty Leica (Rogliatti, 1985) at the perfect Decisive Moment. *Callejón of the Valencia Arena*, 1933. He would wait at a good 'setting', sometimes for hours, for a significant happening. Often, he would collect any number of those, picking a winner in retrospect. MoMA, New York.

Another aspect involves the expression of (clock-)time in painting and sculpture by means of the treatment of the subject. The classical reference is Lord Shaftesbury's principle of 'anticipation and repeal' (Checketts, 2014). In photography it is known as 'The Decisive Moment' (Henri Cartier-Bresson, 1952, Fig. 4).

Snapshots of actions tend to 'read' badly, except when taken at singular, 'decisive' moments. Photographs exposed at such moments suggest the action despite being 'frozen', whereas mere random snapshots tend to look very much frozen indeed. Given the shortness of the moment (in clock-time) and the delays in the camera mechanisms, it takes rare mastery to catch such moments (Note 40).

These methods depend crucially on the 'urge to form' of psychogenesis as illustrated in the abstract images of Fig. 2.

The painter may combine salient aspects of any number of clock-time moments, in any order. Examples that recur throughout the history of art include drapery that 'holds' a retention, whereas a person is depicted in a — perhaps anatomically impossible — pose such that a terminal state is visually immanent.

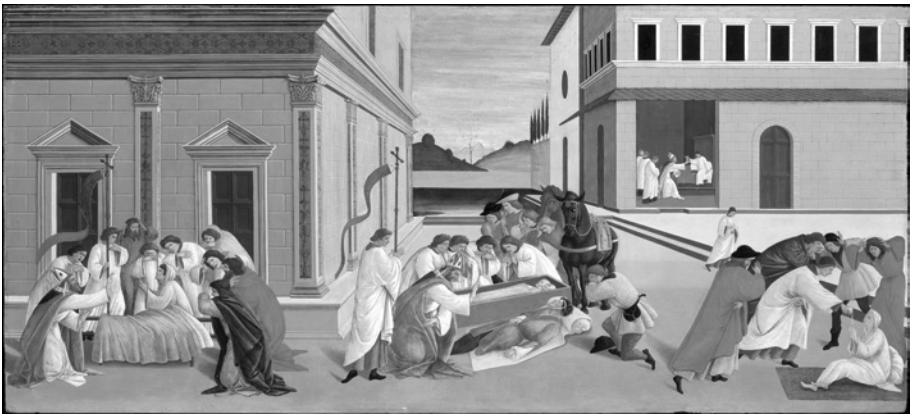

Figure 5. Sandro Botticelli (c. 1445–1510), *Three Miracles of Saint Zenobius* (1500–1510). Depicted are three events from the life of the Saint, the temporal sequence being irrelevant. Although in a single painting, they are not to be read as simultaneous, but as temporally distinct but unrelated. Notice that the perspective architecture suggests a single spatiotemporal setting.

Such painted or sculpted actions are like representations of LOA thoughts and may empathically evoke them.

The painter combines such representations of happenings into something that approaches episode (Fig. 5). Medieval 'lives of the Saints' paintings expand this to life stories, thus turning the paintings into narratives.

This medieval method does not fit the painting format very well, nowadays one would replace such paintings with comic book-style renderings. Indeed, the medieval artist occasionally did that too (Note 41).

In baroque art one sees single, though quite complicated, narrative paintings that work surprisingly well as static compositions.

The painting by Giovanni Bonati (Fig. 6) is a generic example. It illustrates a frequently depicted story from the Legenda Aurea (Note 42).

Although the painting is probably opaque to those who did not hear the legend (Note 43), it clearly illustrates arguments made in a generic debate, or perhaps a mere snapshot of a stage of a debate.

One intuitively sees that the debate started a moment earlier and the gestures make clear that some point or other will be scored a moment later. The painter shows the ongoing debate, the viewer completes the case with an initial and a terminal state. This is due to the anticipation and repeal device. The painting actually represents a specious moment.

This is also true for the depiction by Jan Boeckhorst of Apollo and Daphne after Ovid's Metamorphoses (Ovid, 1717 [ca. 8 ACE]) (Fig. 7) (Note 44).

Apollo's drapery acts as a retention mechanism, showing that the hot pursuit was going on at the previous moment. In contradistinction, Daphne

Figure 6. Giovanni Bonati (1635–1681), *Saint Augustine and the Child on the Seashore*. Notice the gestures and the gazes. Augustine wields a copy of the scriptures, the child a spoon and a shallow water pit, thus filling out the episode for the intended audience. The painting is well suited for educational purposes in a church setting.

Figure 7. Jan Boeckhorst (c. 1604–1668), *Apollo and Daphne* (watercolor painting, chalk, pen and ink, gouache), about 1640. The J. Paul Getty Museum, Los Angeles.

appears to be decelerating, she is depicted at the last moment of the chase, just before she will 'take root'. The sprouting twigs are a protention device to indicate the nature of the next moment.

The painting shows a well-defined happening in a very effective manner (Note 45). The simple composition works remarkably well in the unusual square format.

Notice that such a composition would not work in sculpture and, indeed, in the famous Bernini sculpture of the same happening (Fig. 8) the figures are

Figure 8. Gian Lorenzo Bernini (1598 –1680), *Apollo and Daphne* (1622–1625). The photograph shows the view intended by Bernini: notice how smoothly the bodies take over from each other, almost like a single dynamic entity. The intricate branches, a major technical achievement, were apparently executed by Giuliano Finelli. Galleria Borghese, Rome.

moved closer together in order to arrive at a visually unified shape. Various details, such as the single 'line of action' through the figures' right arms serve the same purpose. However, this forces the epoch to be a little later, thus Daphne's left leg is already covered with bark (Note 46).

The treatment renders the intuition of the initial state — the hot pursuit — a bit vague and leads to a somewhat static impression, despite the intricate drapery of Apollo, which does not use the anticipation and repeal device advantageously.

Even rather static, almost decorative depictions tend to involve ambiguous episodes, that are 'thick moments'.

Consider Jean-Baptiste Greuze's picture of a girl mourning a dead canary (Fig. 9). Here we are given the terminal state and have to intuit an initial state and a story. Of course, this involves major ambiguity.

Just consider: the canary may have suffered a heart attack, the cat may have caught up with it, the girl may have wrung its neck, …. The number of possibilities is only limited by the time one dedicates to consider them. They evidently affect the nature of the final state, thus the tears can be tears of remorse or of empathic pity.

In the case of a rare prize canary, the tears may be due to a realization of economic loss. Thus, the painting may enter one's mind frame, containing numerous mutually weakly connected episodic memories, anticipations, or

Figure 9.
Jean-Baptiste Greuze (1725–1805), *A Girl with a Dead Canary*. Perhaps a currently unfashionable topic, but expertly executed, with exquisite edge quality and a restrained color scheme. Its formal, decorative potential is substantial, although few of our contemporaries would be ready to disregard the topic. However, with some dedication such works readily 'come to life' too.

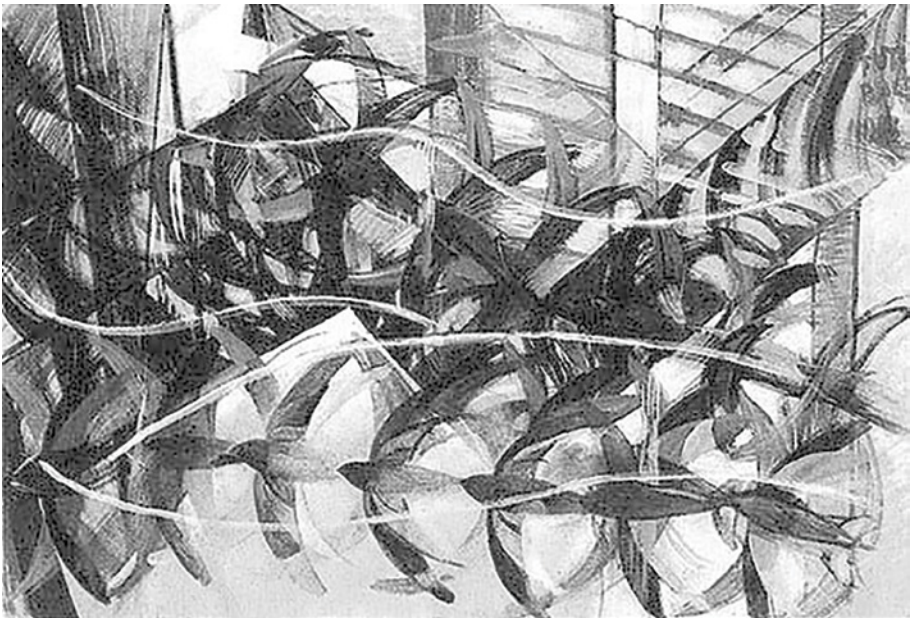

Figure 10. Giacomo Balla (1871–1958) *Flight of the Swallows* (1913). The painting shows seven moments in perfect clock-time order, and summarizes the kinematic 'flow' through arabesque lines. Although it would look great on the wall, it is a questionable achievement. But remember: Balla lived one or two generations before you!

counterfactual imagery, in manifold ways. Paintings have as many meanings as there are viewings.

Here we already move from the sentience to the sapience level. However, we stay clear from mere rationality. This level is, perhaps, akin to that of poetry. The boundary between sentience and sapience is hardly a knife edge, it subtends a gray area of unknown extent.

In the art of the twentieth century one finds numerous attempts to show the flow of time by an adaptation of various devices borrowed from photography.

A generic example is Giacomo Balla, related to the Italian futurist movement (Fig. 10). It is a typically picture-oriented method, similar examples in sculpture being very rare (Note 47). Although the abstract composition (Note 48) makes for an attractive painting, the emphasis on clock-time punctuation clashes with one's feelings for natural flow. This is artfully avoided in other futurist works, especially in Umberto Boccioni's (1882–1916) sculptures *Unique Forms of Continuity in Space, 1913*, or *Development of a Bottle in Space, 1913*, see Fig. 11.

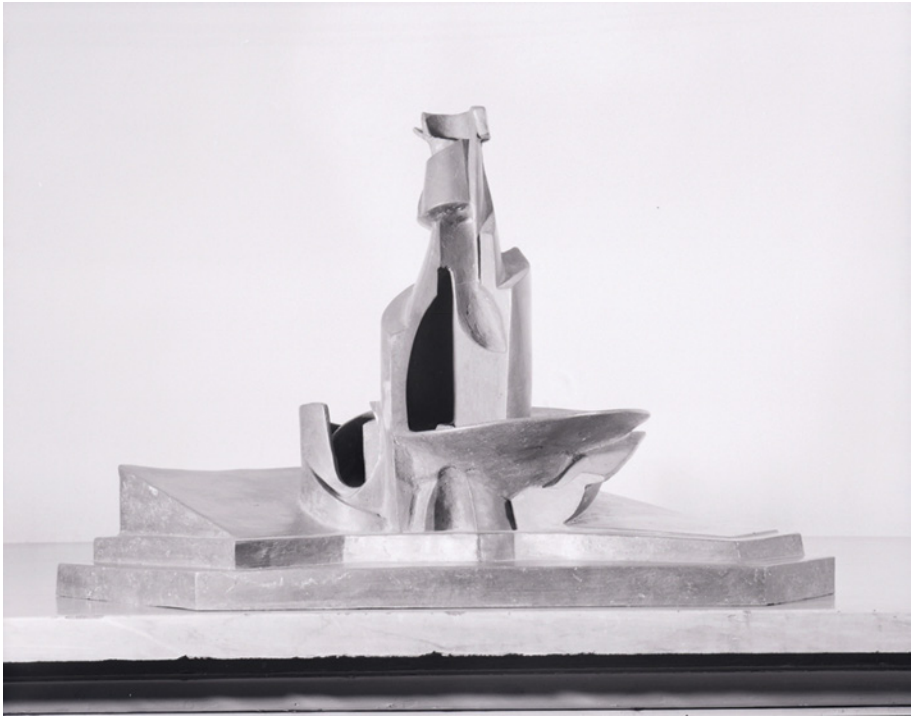

Figure 11. Umberto Boccioni (1882–1916), *Sviluppo di una Bottiglia nello Spazio*, 1913. The 'development of a bottle in space' is a frozen episode. Biblioteca Europea di Informazione e Cultura, ser– s5010–0008628 (Photograph: Paolo Monti, 1969).

5.2. Cinematic Narration

Short video clips perhaps fit the format of the 'cases' of psychogenesis best. However, renderings in sculpture or paintings are immediate too. The nature of the medium yields natural constraints that need to be respected.

Consider a simple example concocted for the occasion. A short movie sequence takes its inspiration from 1 Samuel 17, verses 48–50 (Note 49). We have an initial state, a terminal state and a connecting story.

There will be three short shots of happenings:

i. David putting his hand in his bag,
ii. David slinging the stone (no need for the stone to be actually visible at any moment) to Goliath, and
iii. Goliath falling.

It might fit about a single second worth of movie time, a specious moment.

This is close to a short report as might occur in the imagination, roughly a minimal episode of about three happenings worth. No doubt it would work fine in cinema.

Now consider adding a short shot at the beginning, say David and Goliath shaking hands. This would certainly change the perceived meaning of the final shot, that of Goliath falling.

Or consider adding a shot at the end, Goliath standing up and giving a thumb's up. That would certainly change the meaning of the first shot, that of David putting his hand in his bag.

This illustrates how volatile both past and future are. It is easy enough to suggest other changes that will completely change the movie without affecting the original three shots.

The David and Goliath episode has often been represented in sculpture and painting.

In sculpture Bernini's David is singular in showing David slinging the stone, in perfect 'anticipation and repeal' style. This piece has frequently been copied in both sculpture and painting. It is rightly considered a masterpiece in the technical sense, although it is a doubtful success in the artistic, aesthetic sense. The pose only just avoids looking frozen, but the facial expression most certainly does not. Moreover, the presence of Goliath is sorely missed due to David's intensely strong intention.

So, not surprisingly, in sculpture it remains almost unique, except for the copies. Most representations of the David and Goliath incidence are static, which is indeed much to be preferred from an artistic aesthetic. Famous examples are instances due to Michelangelo, Donatello and Verocchio.

In painting, the preferred scene (Note 50) is David beheading Goliath — not suitable in sculpture — or triumphantly holding up Goliath's severed head. The latter pose can also lead to successful sculptural renderings, like in Benvenuto Cellini's (1500–1571) Perseus with the Medusa's head (Fig. 12).

Different from sculpture and painting, cinema (Dmytryk, 1984) and writing allow much more complex episodes or fabulæ—all the way to full biographies—to be narrated. This yields great examples of our present theories.

We consider a few instances that may suffice to illustrate some of the key features. Although we mention only a few specific cases, numerous alternatives could be quoted. We trust that the reader will supply them.

Distinct structures are listed in no particular order. The choice is frankly idiosyncratic, nevertheless — we believe — very illustrative. An interpretation in terms of lived-time texture is attempted in the next section.

5.2.1. Linear

Linear narrative simply follows clock-time. It is the most natural way of telling a story and indeed the structure used in classical parables, fables and tales like those in Brüder Grimm's (1812–1815) *Kinder- und Hausmärchen*, or Ovid's (1717 [ca. 8 ACE]) *Metamorphoses*. It forms the rock-bottom foundation on which various of the other devices — such as flashbacks — may be grafted.

Figure 12. From left to right: Gian Lorenzo Bernini (sculpture in marble), David all set for the decisive action (exactly located in time; notice facial expression and 'wound up' body); Andrea del Verrocchio, born Andrea di Michele di Francesco de' Cioni (1435–1488; sculpture in bronze), a rather static (or 'timeless') David triumphant; and Gabriel Ferrier (1847–1914; painting), highly dynamic (and locatable in time) David proudly displaying Goliath's head. How about your aesthetic preferences?

In cinema Peter Bogdanovich's (born 1939) *Paper moon* (1973) is a generic example. True to the linear concept Bogdanovich uses deep focus (Note 51) and long takes. The 'ideal' of the linear structure might be a movie in a single (long, long, long) take, but this is very rare. Alfred Hitchcock (1899–1980) comes close in *Rope* (1948), where he uses ten-minute takes (Note 52).

5.2.2. Linear with Excursions

The generic linear narrative is the quest. Francis Ford Coppola's (born 1939) *Apocalypse Now* (1979) is a quest 'up the river' to terminate the 'unsound' command of a Colonel Kurtz. It is loosely structured after Joseph Conrad's (1981 [1899]) *Heart of Darkness*. The movie is brimful of episodes that are really disconnected to the quest and might as well have been put in a different order. It is a narrative structure that reads as easily as linear narrative, but for extended periods one is really disconnected from the main storyline. One simply pushes down the main story line in a memory stack and enjoys the excursion, then pops up to the main line again. One apparently has some kind of stack mechanism (Note 53) that enables us to do it. Hard to say how deep the nesting may go — several layers at least. At some point there is bound to be a point where ones 'loses count' though. An extreme instance is Jan Potocki's

(1996 [1805–1815]) *The Saragossa Manuscript*, adapted for cinema in Wojciech Has's (1925–2000) *Rękopis znaleziony w Saragossie* (*The Saragossa Manuscript*) (1965). It has a nesting depth of five; worse still, there are various odd connections between the episodes.

5.2.3. Parallel Stories

Closely related to the 'linear with excursion' is the device of two or more parallel stories that are intercut and move along parallel time lines. One may be thought of as an excursion of the other, although there tends to be a major and a minor story. Sam Peckinpah's (1925–1985) *Cross of Iron* (1977) is a particularly effective example (Note 54). His 1972 *The Getaway* is another good example (Note 55). For a 'natural' narrative the stories should be obviously related (Note 56).

The picaresque form borrows something from both the 'linear with excursions' and the 'parallel stories'. It is somewhat primitive perhaps, and rare in movies. We do not discuss it here as a separate topic.

5.2.4. Nesting and Infinite Regress

Nesting stories is common (Note 57). A nested-stories movie such as Wes Anderson's (born 1969) *Grand Budapest Hotel* (2014) has four layers of narration. The story in a story in a story… may reach the initial story again, so the whole movie may be presented as an infinite loop. An eerie example is Roman Polanski's (born 1933) *The Tenant* (1976). It can be done for a very short episodic fragment too: numerous examples can be found as gif-files on the Internet. With a periodic sequence of just two or three images one already produces interesting results.

5.2.5. Arbitrary Insertions

Tom Tykwer's (born 1965) *Lola rennt* (1998) is an interesting movie in many ways. One instance involves a few very short insertions, themselves not, or only incidentally, related to the main storyline. Since the movie uses alternative narrative (see below), the insertions are repeated in alternative ways too. Although the insertions are indeed very short — a kind of extended flashes — they may present a full life story. They perhaps resemble the phantasies one has in a split second in the case of sudden disasters such as a fall from a roof (Note 58).

5.2.6. Nonlinear

Nonlinear narrative has become a modern standard. Kurt Vonnegut's (1969) *Slaughterhouse Five* (1969) is a well-known example in writing. In cinema Quentin Tarantino's (born 1963) *Pulp Fiction* (1994) has perhaps become the canonical instance. Its plot is fully out of chronological (clock-)time order.

This is largely made possible due to the use of mutually only weakly connected separate stories, each in chronological order. The out-of-order instances occur at the tangencies of the stories.

Nonlinear montage can also be used on the microscale. A famous example is Nicolas Roeg's 1973 *Don't Look Now* (Italian: *A Venezia… un Dicembre rosso shocking*). In the much discussed sex scene two short, successive periods are intricately intercut. The effect of such time-scrambling is not immediately intuitive, but works after an initial surprise. It then can be experienced as proper visual art, rather than some form of conceptual art.

5.2.7. Repetition

Repeated narrative implies periodic time. It was used to good effect in Roman Polanski's *Che?* (1972) (Note 59). An attempt of much grander scale is Harold Ramis's (1944–2014) *Groundhog Day* (1993), which echoes the despair of Friedrich Nietzsche's (1882) *Ewige Wiederkunft des Gleichen* (Eternal Return).

5.2.8. Alternatives

Alternative narrative presents different counterfactual worlds, which are evidently about a single 'world', but are not repeats. A famous instance is Ambrose Bierce's (2008 [1890], pp. 7–15) *An Occurrence at Owl Creek Bridge*. The alternatives tend to be presented in concatenation. Key examples are Akira Kurosawa's (1910–1998) *Rashomon* (1950) and Tom Tykwer's *Lola rennt* (see above). We know of no example where possible worlds are presented as intercut short episodes. That would be a major nightmare to viewers (consider that bad), though perhaps a major challenge to directors (perhaps appreciated).

5.2.9. Intricate Relations

Intricate narrative establishes unexpected connections between initially disconnected episodes. This forces the viewer to continually rewrite the past and adjust the anticipations. A good example is *After Hours* (1985) by Martin Scorsese (born 1942) (Note 60). It tends to confuse, or surprise viewers (if well done an artistic device), so great care has to be taken in using this form.

5.2.10. Reversal

Reverse narrative is rather uncommon, except in the simple way of starting with a final state, followed by a narrative that explains how this state was reached. The best-known instance is probably Orson Welles's (1915–1985) *Citizen Kane* (1941). An extreme example of pure reverse narrative is Christopher Nolan's (born 1970) *Memento* (2000), which actually intersperses two

storylines, one standard linear, the other also (globally) linear, but in reverse order. The story lines are distinguished by having one in monochrome — suggesting past events — the other in color — suggesting present events. Awkwardly, on the microscale the reversed story must be forward, not reversed (Note 61). Thus one has a high-frequency series of short forward in reverse order. This leads to major problems, despite smart, but artificial methods to counteract them. It is probably right to say that it fails to penetrate the mind-set of most viewers. It works perhaps after repeated viewing, at least on the conceptual level of some especially sophisticated viewers. However, it fails to reach the intuitive level of virtually anybody. Thus, we label it 'conceptual art' as distinct from just 'art'. It excites the modern sophisticated intellectual, but fails to reach a generic audience. A very similar remark applies to writing. Martin Amis's *Time's Arrow* (1991) is a key example. It is thoroughly disorienting, which may again appeal to particularly sophisticated readers. Most readers are likely to need a second (or *n*th…) reading though.

5.2.11. Structureless

As a final step in sophistication a narrative may be designed as incomprehensible. The key example is Seijun Suzuki's (1923–2017) *Koroshi no rakuin* ('Branded to kill') of 1967. It soon became a cult classic, but we have found no critic who professed to have understood it, even after many viewings. One wonders whether this is narrative at all?

5.3. Narrative Figures and the Texture of Lived-Time

We submit that 'art' has its roots in the LOA, even if it extends into the level of conceptual, discursive thought. In this paper we are mainly interested in the LOA level, thus we discuss only the implications of the narrative structures with respect to that.

This implies — among other things — that a global *reverse narrative* need not to be taken into account, as it singularly addresses the conceptual level. Perhaps surprisingly, the structureless narrative is different. It might well seem that the mind is full of it. However, one cannot get hold of it, so this case is almost impossible to study.

Figures of narration found in literature and movies can also be noticed in dreams and daydreaming. They are 'natural' in that respect. This makes sense, since it is hard to imagine how one would be able to intuitively deal with artistic compositions otherwise.

Thus, we expect the analysis of art forms and of transcendental phenomenology to mutually illuminate each other. We consider some of the major forms discussed in the previous section and comment on phenomenological counterparts (see Fig. 13).

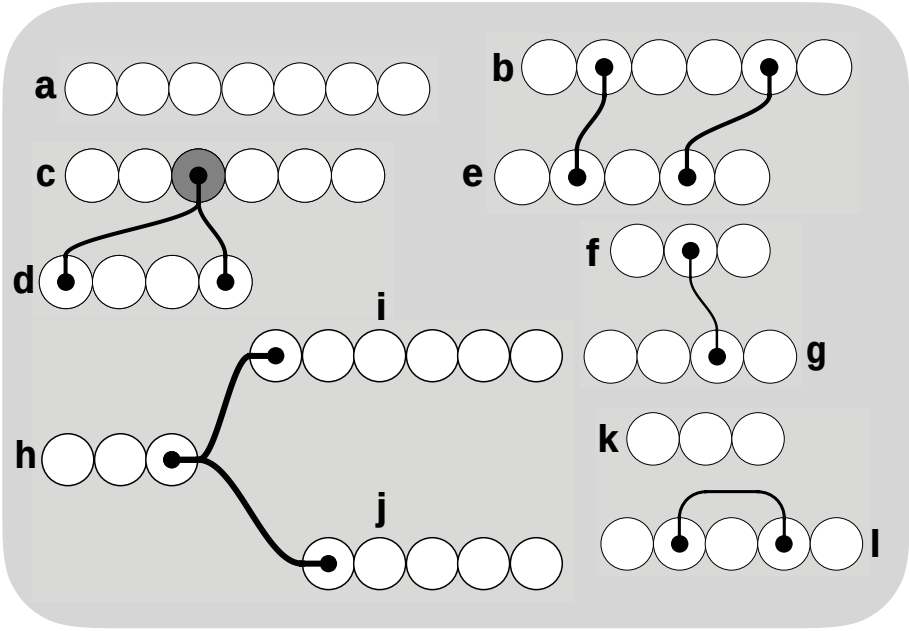

Figure 13. The gray region is William James's 'fringe', what we call 'limbo'. It contains numerous episodes mutually competing to actualize as awareness. Limbo has a fleeting population and piggy-backs on the dark region of the 'subconsciousness'. Many episodes such as **a** and **k** stand in no particular temporal relation in lived-time. The white beads denote atomic happenings, episodes can be of various lengths. The left to right direction indicates serial order in lived-time. Here we left out the case where such serial order is not defined, but such cases are not at all infrequent. Episodes combine into threads of narrative if there exist mutual links, like in **f–g**. Such links can be of various types (a more articulate graphical representation might indicate that): they can be either directed or undirected, they might indicate a vague similarity, or even an identity. This opens the possibility for 'forked paths' (Borges, 1969 [1941]) as in **h–i–j** and vicious circularity as in **b–e** or **l**. In the case of **f** one may have (using directed connections) 'flashbacks' or 'flashforwards'. The case **c–d** shows an interjection, the episode c is pushed down the memory stack at the third happening, and episode d takes over, at the latter conclusion the stack is popped and episode **c** continuous. This runs a 'story in a story'. All these structures can be arbitrarily nested and juxtaposed. The datastructure for a few minutes daydreaming is already very complicated. A feeling for the possible complexity is obtained by mapping out the structure for a movie such as Wojciech Has's *The Saragossa Manuscript* (1965). It makes for a rewarding exercise, made possible thanks to convenient outlines for the movie available on the Internet.

Linear narrative, perhaps with excursions and/or arbitrary insertions, fits the LOA level perfectly. It would appeal to the Neanderthal mind, as it also does to *Homo sapiens* (Note 62). In pure linear narrative one has sequences of happenings or episodic threads of various complexity that either concatenate or overlap. This yields a lived-time texture with obvious structure, close to a

topology. The serial order is that of clock-time, but the 'speed' may be very variable and there are numerous connections that straddle clock-time. The texture may be so dense, due to such connections, that fairly long episodes may appear as extended specious moments.

There appears to be quite a variation over the population, with some people having an almost complete overview of their life in mind — no doubt in various summary form — whereas others really 'live by the moment' (Strawson, 2004). One would appreciate a substantial literature here, but apparently it is lacking, except perhaps in some Eastern traditions (Okano, 2015). The Buddhist doctrines of *no-self* (Ch. *wúhǒ*; J. *muga*) and *no-mind* (Ch. *wu-wo*; J. *mushin*) are relevant here (Soho, 1986 [17th c.]), also with respect to the ontological roots of art. The mind of no-mind has obvious relations to the deep structure of lived-time (Brown, 1999).

Excursions and insertions are handled easily, they give rise to mutually disjunct threads. Apparently, no one has difficulty with that. One easily jumps from one thread to the other, like visiting different worlds.

This is an amazing ability of the human mind, and it is largely unclear how this generalizes to various animal species. It would seem that pet animals such as cats and dogs fairly easily slip into different environments they are familiar with, like two different locations or two different patrons. They no doubt have some of the abilities that we so admire in humans. From informal observations of cats we notice that they easily 'forget' an activity when circumstances force them to temporarily adopt another one. Apparently their stack mechanism is not as reliable as ours.

Excursions interrupt the clock-time flow of events. The onset of an excursion is like a topological 'wormhole' that instantly transports one to another epoch. Perhaps surprisingly, the mind has no problems with that.

Even the natural flow of awareness tends to be segmented into meaningful chunks that are treated separately. This segmented nature is an important aspect of lived-time (Armstrong and Cutting, 2017; Radvansky, 2017). Lived-time comes in cohesive happenings and coherent episodes of various complexity. Such parts have various interconnections, but remain largely independent.

This may well be related to the fact that one can only do one thing at a time in concrete actuality and that one should never do one thing for an extended period without checking alternative possibilities or threats. It is something one also notices in animal behavior.

Repeated narrative has obvious parallels in many aspects of human life related to daily and seasonal periodicities and the execution of common chores. No doubt, animals experience the same thing. Life is brimful of repetition and this is of obvious importance to biological organisms. Is the cat perhaps always catching the same mouse over and over again (Note 63)?

In modern societies the principle of the Division of Labor enforces repetition as illustrated in Charlie Chaplin's *Modern Times* (1936). We readily join Chaplin in laughing at what is only too familiar, a kind of catharsis (Note 64).

Alternative narration is part of the LOA itself, it is the nature of daydreaming to explore counterfactual possible worlds.

Intricate narrative has to do with the ability to intuitively 'see' connections between apparently distinct episodic threads (Note 65). Little is known about that. One guesses that there are huge individual differences here and that there might well be a gap between humans and even cats, dogs or horses. On the other hand, the enormous background knowledge that allows us to deal with the world must be largely due to automatic, arbitrary associations.

The mind is all set to extract such connections, although it seems limited to happenings that are generally close in space and (clock-)time. Exceptions are not infrequent though. Who has never seen faces in clouds?

5.4. Mental Mechanisms Involved in Daydreaming

We mention 'daydreaming' to indicate movie-like, or virtual-reality experiences in the LOA. Of course, it equally occurs in mental activities distinct from daydreaming. An example would be the intuited structure of a work of art. In this section we discuss a few 'mental mechanisms' that enable the construction of such virtual-reality shreds in the LOA.

Whereas we believe to spot 'evidence' for such mechanisms in our subjective experience, we leave it up to the reader to judge that issue. In psychology Sigmund Freud popularized the distinction of conscious, subconscious and unconscious levels of the mind (James, 1893; Westen, 1999). However, the notion of some level of pre- or proto-awareness was used much earlier (Note 66) and can also be found in non-Western cultures, even of centuries past. It is a fact of transcendental phenomenology, although frequently disputed in the sciences and analytic philosophy.

What is especially interesting in the present context is that the 'mental mechanisms' are likely to be analogous to what goes on in the creation of works of art. Indeed, it is easy enough to rewrite the list below in terms of what goes on in the creative process that happens before (Oliver, 1982) and during the execution of some work (May, 2005).

The list is like a research program in both phenomenology (or, perhaps, AI) and art theory:

5.4.1. A Way to Come up with Simple Plots

The generation of plots has to start from something. Obvious starting points are current situational awareness and current emotional states. The plots are aimed at the satisfaction of emotive longings and the resolution of uncertainties

in situational awareness, especially those that might endanger the body. The intentional objects are wanted, loved, hated, feared,…(Husserl's *Gemütsintentionalität*, related to the notion of *Wertnehmung*). They define the relation of the body to the environment, prior to perception.

5.4.2. A Way for Anticipations to Appear Automatically

This is very important as it limits the likely possibilities and thus enables one to ignore the bulk of the blackboard structure and focus on what might be relevant to the present situation. The anticipations are Husserl's *hyletischen Antizipationen*, the notion is already found in Kant. They are entirely a function of sentience, rational thought being far too slow to handle anticipations as they are needed continuously.

5.4.3. A Way to Construct Concrete Actuality

Concrete actuality involves the blackboards and keyboards. The psychogenesis of awareness is perhaps similar to Husserl's *typifizierende Apperzeption*. Again, the notion is already found in Kant. The types found in the network of habits and associations have been called 'the cement of the universe' by David Hume (1938 [1740]) (Note 67). Psychogenesis constructs meaning, the meaning being both in the mind/body and in the environment. This concept is partly expressed in the notion of 'affordance' (Gibson, 1978) or 'functional tone' (von Uexküll, 1940).

5.4.4. A Way to Store and Retrieve 'Gists' of Experiences

Such a mechanism is like psychogenesis of actuality, but instead of poking the blackboards and keyboards, it references 'gists' of threads of experiences from the past. However, it should be seen as 'productive', just as perception, or phantasy, not 'reproductive' (Note 68). 'Episodic memory' is not unlike generic perception, apart from the references to constraining structures such as the blackboard, which are momentary memory buffers. Generic memory buffers might store gists of past cases. They might be addressed through the association structure of habits and types also used in perception.

5.4.5. Maintaining a Store of Material 'Drifting in Limbo'

This would be called the subconsciousness in Freudian language, perhaps it is James's 'fringe' (James, 1893; Mangan, 2003). The current store is likely to fit current anticipations.

5.4.6. A Way to Bring Elements from Limbo into Awareness

One does not experience 'construction' in awareness. Apparently, elements from limbo are brought into the foreground ready-made. Being mindful, one frequently notices elements entering or leaving awareness. These tend to be

sudden events, like the flip of a Necker cube. Hoyle's pigeonhole theory of time might apply here (Hoyle, 1966).

5.4.7. A Way to Establish Links between Arbitrary Nodes
The experience has a tight structure due to associative links between nodes. Here the background of habits and types comes into play. It renders the experiences essentially idiosyncratic.

5.4.8. A Stack Mechanism
There has to be a stack mechanism that allows arbitrary jumps between episodes with a guaranteed return ticket. This allows wormholes between episodes, chromesthesia (Note 69) (Tulving, 2002) and 'mental time travel' (Suddendorf and Corballis, 1997).

5.4.9. A Rewriting Mechanism
There has to be a way to derive alternative, counterfactual episodes from existing ones. This involves 'rewriting' the story, including the meaning of the initial and terminal states, as well as the 'evidence'. Alternatives may be swapped in and out of awareness.

Again, all these mechanisms have immediate analogons in the creative, artistic process. Think of the literature on artistic method and 'mental block'. To rewrite the list in these terms would go beyond the scope of this paper.

The list makes for a potentially rewarding research program.

6. Conclusion

We propose an account of awareness that applies both to lived experience in daily life and to the experience with products of the arts. Although there is hardly anything novel in our account, it seems relevant to put some emphasis on the relation between the structure of mind and the structure of art works.

Awareness is *concrete actuality* by its very nature and in inner life it is all there is, a *brute fact*.

From an external perspective it appears utterly self-contradictory to derive the nature of (clock-)time from the structure of the moment (a clock-time tick's worth). But from the perspective of inner phenomenology there is no other way.

This is only one of the apparently odd aspects of the present proposal. Another one that sounds perhaps preposterous from the external perspective is that the past is not fixed, but that both past and future change capriciously as the flow of experience passes. That is to say, from the perspective of clock-time, because from the perspective of inner phenomenology this only makes sense.

Actualities are mutually independent, whereas successive clock-ticks are smoothly glued together by kinematical extrapolation. The glue is the generic inertia in the dynamics of mechanical phenomena. It is what renders weather forecasting somewhat possible and it helps one to safely cross a busy street. But past and future will change with any caprice of mind. Physics has nothing to do with that. Again, Hoyle's pigeonhole theory of time might apply here (Hoyle, 1966).

Yet another apparently odd aspect is that there are numerous figments floating around in the fringes of mind that are not connected to concrete actuality at all. Such figments lack a connection to actuality. They are neither past, nor future. One might say that they remain 'in limbo'. Again, any caprice of mind will change the chrono-topology. The texture of lived-time is highly volatile.

The notion that 'there is only the moment now' — that is the specious present including retention and protention — at any moment refers to clock-time. The 'any moment' is a clock-tick. This notion treats the now as a clock-time tick flanked by a ghostly earlier and a perhaps even ghostlier later tick.

For the scientist and even the classical phenomenologist this is a natural notion. However, it explicitly or implicitly refers to external clock-time. It is seductive — indeed, embraced by virtually all authors — but it does not fit lived-time at all.

Transcendental phenomenology suggests something quite different. Awareness — among much more! — involves a fuzzy, orderless collection of threads of fabulation, including a major, though volatile, thread that presents concrete actuality.

A large part of this inchoate space remains subsurface, but there always is a fleeting layer experienced as a 'fringe' of awareness, competing for the status of actuality. One may want to check that by noticing one's — always *present* — mind. Instead of a moment flanked by immediate past and future, awareness harbors a textural mishmash of episodes and confabulated shreds that have no linear topological structure at all. Many of the shreds do not even stand in some before-or-after relation.

Most of this remains subsurface, but mindful noticing will reveal such shreds surfacing into William James's fringe now and then (James, 1893; Mangan, 2003). It may be ignored as mere 'mind-wandering' (Nakatani *et al.*, 2019; Smallwood and Schooler, 2015) but it happens even in concrete actuality and is often not clearly related to that actuality. Thus, the capricious texture of time in awareness is always present.

This is at odds with mainstream convictions, yet we doubt that it can be denied without voluntarily ignoring concrete, actual experience. If one grants it as a fact of inner life, the 'problem of lived-time' changes completely.

We submit that many art forms are intimately related to the texture of lived-time and the abilities of the mind–body–environment Trinity to edit that texture.

This is perhaps remarkable, because our biologically inspired introduction mainly addresses *sentience*, whereas the arts certainly involve sapience as well. Yet art that is not singularly conceptual clearly has a left-over when stripped of rationality, symbolism and logic. The left-over is rooted in sentience, that is in intuitions, feelings, or emotions and might perhaps be regarded as an unexplored region between sentience and sapience.

In sentience or sapience proper, there can be no art. The art resides in the gray zone between the LOA and logical, conceptual, discursive thought. It is this largely uncharted region that a proper 'philosophy of art' needs to intrude.

This is certainly close to the thoughts of authors such as Goethe (Weik, 2017), philosophers such as Fiedler (1887), or artists such as Hildebrand (1893) (Note 70). It seems to us that the biologically singular position of *Homo sapiens* is best understood in terms of the structure of such a no-man's land. There are obvious influences of sentience on sapience, for sentience provides the very *stuff* that sapience wields. Rarely recognized are the influences of sapience on (almost) sentience (Note 71). This is a topic that sorely needs academic attention (Note 72).

A study of the methods used in various art forms offers an important window to our understanding of the texture of lived-time and *vice versa*. In the context of this paper we could do no more than lift the curtain a bit.

Notes

1. A notable exception is Henri Bergson (1889). However, perhaps unfortunately, Bergson does not really offer a synthetic perspective.
2. Nobel Prize in Physiology or Medicine 1973, awarded jointly to Karl von Frisch, Konrad Lorenz and Nikolaas Tinbergen (Eibl-Eibesfeldt, 1970).
3. This is closely related to Zeno's paradox. Movement is a flow, rather than a record of positions at a series of clock-ticks. Flows are more like melodies.
4. Sentience is a concept of discursive thought, awareness is the manifestation of sentience (Koenderink, 2012a). It is a *brute fact* (it 'just happens', one doesn't 'do' it) that remains outside the realm of science. In the scientific domain it can only be approached — but never reached — through behavioristic methods.
5. '*In ictu oculi*' is famous in the arts because of the painting (1670–72) by the Spanish Baroque artist Juan de Valdés Leal in the Hospital de la Caridad, Seville.
6. Thus, when we mention 'art', we exclude 'conceptual art', but we aim at works at least partly relying on 'intuitions', 'feelings' and 'emotions'. This

may still involve sapience in some way, but stripped of rational content there should be a significant remainder.

7. For instance Max Wertheimer's φ-motion (Wertheimer, 1912).
8. Consider a physical parameter P at clock intervals t and $t + \Delta t$. If the parameter varies smoothly over time and $| P' | \gg | P'' \Delta t |$ one has $P(t \pm \Delta t) \approx P(t) \pm P'(t)\, \Delta t$. This is 'kinematical extrapolation', as it does not involve any dynamical theory of the physical process. It does involve clock-time in the strict sense though.
9. In Husserl's account the contents of retention and protention (Husserl, 1964 [1893–1917]) are (doubly-)intentional, so he does not rely on formal kinematical extrapolation. He does rely on a one-dimensional (Bergson would say 'spatial') temporal dimension though, something we try to avoid. Generic explanations of the retention and protention mechanisms typically use explicit clock-ticks in their illustrations.
10. Think of the time-to-collision (Hoyle, 1957) mechanisms and corrective actions in dancing and sports (Jordan, 1972), in which clock-time is the key parameter.
11. Nowadays this insight is known as the problem of consciousness. To deny the potential existence of a causal bridge brands you a neo-mysterian (McGinn, 1993).
12. A heuristic is a proposition that cannot be falsified by present or future scientific methods, but that is used in planning action. Some heuristics lead to progress in understanding, others don't, or even promote potentially harmful mind frames. Here 'understanding' is any mind frame that renders potential events at least somewhat predictable and/or aids in noticing such events.
13. Authors von Uexküll, Vico, Schrödinger and Lohmar pop up at various places in this paper. Instead of spending much text on them here, the reader is invited to mentally add up the context of various references.
14. That animals are robots derives from the tunnel vision that biology is an extremely complex form of chemistry. Problems start when humans are somehow exempted (Boddice, 2011).
15. In the past direct interactions between scientists and artists have perhaps been more frequent than nowadays, at least on the perceptual (intuitive) as opposed to the conceptual (discursive) level. Relations between von Uexküll and poetry (e.g., Rainer Maria Rilke), literature (e.g., Alfred Döblin), and painting (e.g., Franz Marc) are well known.
16. This relation between sentience and sapience, or perception and conception is rarely acknowledged in the sciences. For exceptions see Fiedler (1887), Hildebrand (1893), Langer (1953). Artists have often been explicit, the Dada movement is a famous example.

17. Yes, we are aware of the meaning of 'blackboard architecture' in AI. It is entirely unrelated to our current use.
18. A key example of a blackboard is the primary cortical area V1 in primates, although it in no way exhausts the optical blackboard. A blackboard may well implement retention and protention (via kinematical extrapolation) too, it makes no difference to our arguments.
19. This is a key distinction. We use 'data' as meaningful structure, 'structure' as information in the sense of Claude Shannon (1948). The blackboard structure is somatic, rather than mental. It might be called 'hyletic', following Husserl. There is a kind of proto-intentionality, 'somatic intentionality' or 'operational intentionality' due to the fact that the structure in the blackboard has been filtered to retain only potentially relevant structure and that the global structure depends on the focusing of external sense organs (eye muscles and so forth). In that sense it is 'world-directed', as indeed the body itself is. For instance, our feet are perfectly adapted to walking in steppe or savanna environments.
20. "[T]he organism uses brain cells … grouping half of them in differently-sized groups of 'perception cells'…. These groups correspond to external groups of stimuli, which present themselves to the animal subject in the form of questions. The organism uses the other half of the brain cells as 'effect cells' or impulse cells…, which impart the animal subject's answers to the outside world." (von Uexküll, 2010, p. 47.)
21. This is not to say that an animal is a robot in the engineering sense. The environment and the body as part of it are essential for 'mind' to make sense. But although the blackboard–keyboard sandwich is somewhat of a caricatural abstraction, it neatly summarizes the basic structure.
22. This is sometimes felt in reflective thought (Musil, 1930–1943, Vol. 1, ch. 4, headline and first paragraph):
    Wenn es Wirklichkeitssinn gibt, muss es auch Möglichkeitssinn geben:
    …
    Wer ihn besitzt, sagt beispielsweise nicht: Hier ist dies oder das geschehen, wird geschehen, muss geschehen; sondern er erfindet: Hier könnte, sollte oder müsste geschehen; und wenn man ihm von irgend etwas erklärt, daß es so sei, wie es sei, dann denkt er: Nun, es könnte wahrscheinlich auch anders sein. So ließe sich der Möglichkeitssinn geradezu als Fähigkeit definieren, alles, was ebensogut sein könnte, zu denken und das, was ist, nicht wichtiger zu nehmen als das, was nicht ist.
    (Translation: "If there is a sense of reality, there must also be a sense of possibility: … For example, those who own it do not say: Here this or that happened, will happen, must happen; but he invents: Here could, should or is bound to happen; and if you explain something to him that it is the

way it is, he thinks: Well, it could probably be different. Thus, the sense of possibility could just as well be defined as the ability to think everything that might as well be, and to take what is, as not more important than what is not.")

23. We use 'body' in the sense of Husserl's *Leib*, not *Körper*. The Leib is a psychic, not a material object. 'Lived-body' (as distinct from living body) is an awkward English equivalent. It is like the *corps vécu* of the French phenomenologists.
24. Yet awareness is not 'perspectival' in the sense of dealing with some, whereas fully skipping the remainder of the world. We rather think in terms of Leibniz's 'clear' and 'obscure' perceptions, perhaps his *petites perceptions*. Each monad *fully expresses the world at large*, although to (greatly) various depths.
25. Von Uexküll formulated these concepts during the nineteen-twenties. He generalized the existing notion of the sensorimotor loop to that of the *Neuer Kreis* ('new loop'). In the mid-twentieth century the core concept became known as von Holst and Mittelsteadt's *Reafferenzprinzip* and by the end of the century as *predictive coding*, both key principles in modern brain science (Friston and Kiebel, 2009; Grüßer, 1995; von Holst and Mittelstaedt, 1950), all without reference to von Uexküll. Von Uexküll himself quotes Helmholtz as the originator of the concept.
26. That is how he could speculate on the relation between the *Innenwelt* and the *Gegenwelt* and *Umwelt*. In the physiological setting there is no room for an inner world. Von Uexküll's account was essentially *biological*, rather than physiological, or brain-theoretical.
27. The body has indeed an anatomical/physiological definition, whereas the biological, rather than physiological, or brain-theoretical definition of 'mind' is fully conventional. Darwin's 'mind is the function of the body' makes good sense, the modern version, 'mind is the function of the brain' perhaps leading to common misunderstandings. The body (including the brain) is tuned to the structure of the environment (so far as it applies to the life style) through long periods of evolution.
28. Of course, this starts with the problem of how to define 'awareness' in objective terms!
29. In *Mind and Matter*' (Schrödinger, 1958): "The nervous system is the place where our species is still engaged in phylogenetic transformation: metaphorically speaking it is the 'vegetation top' of our stem. I would summarize my general hypothesis thus: consciousness is associated with the 'learning' of the living substance: its 'knowing how' is unconscious." The 'vegetation top' (G. *Vegetationsspitze*) is the 'apical meristem' of botany.

30. The term 'affordance' is due to Gibson (1978). However, Gibson treats the 'throwable' affordance of a hand-sized stone as a property of the stone, much like its physical mass. In contradistinction, von Uexküll's functional tone is in the potential or actual thrower, not in the stone.
31. Brown is another author that is vital to our account. There will be various references throughout our text.
32. Elsewhere we presented this as the 'Sherlock Holmes model' of psychogenesis (Koenderink, 2012a).
33. We are not aware of a conventional term to use here. The LOA should not be confused with the LOT ('Language of Thought', 'mentalese'; Fodor, 1975)! The LOT is a full-blown symbolic, conceptual system with combinatorial syntax. The LOT does not address experience, imagery, percepts or qualia, whereas the LOA is all about that. If you decide to read LOA as the 'Language of Art', that's up to you, we won't object.
34. An excellent discussion of these matters is provided by Sheets-Johnstone (1999).
35. Some notion such as Franz Brentano's 'plerosis' (Koenderink, 2017; Koenderink *et al.*, 2017) might save the day, but Brentano does not use the idea in the temporal domain. Instead, he uses the notion of retention, as done by most others.
36. Among well-known operationalizations are Vittorio Benussi's (1913) experiments at Alexius Meinong's Graz laboratory. They are best known through Giovanni Vicario's (1973) temporal displacement experiments in which three short sounds are heard in permuted clock-time order when presented within a sufficiently short (clock-time) period. The three sounds are simultaneous in lived-time, though not in clock-time, and are experienced as a *Prägnant* (meaningful) Gestalt. The Gestalt (a minimal melody) is an atomic entity, permutations in clock-time order are irrelevant, since the Gestalt parts exist simultaneously in the mind.
37. We omit scale issues for the sake of brevity. One really has to conceive of deeply nested structures of investigations, building meaning on meaning. The difference between levels is due to the contexts taking into account and the level of summarizing of the available structure.
38. Musil has:

> Die meisten Menschen sind im Grundverhältnis zu sich selbst Erzähler. Sie lieben nicht die Lyrik oder nur für Augenblicke, und wenn in den Faden des Lebens auch ein wenig 'weil' und 'damit' hineingeknüpft wird, so verabscheuen sie doch alle Besinnung, die daüber hinausgreift: sie lieben das ordentliche Nacheinander von Tatsachen, weil es einer Notwendigkeit gleichsieht, und fühlen sich durch den Eindruck, daß ihr Leben einen 'Lauf' habe, irgendwie im Chaos

geborgen. Und Ulrich bemerkte nun, daß ihm dieses primitiv Epische abhanden gekommen sei, woran das private Leben noch festhält, obgleich öffentlich alles schon unerzählerisch geworden ist und nicht einem 'Faden' mehr folgt, sondern sich in einer unendlich verwobenen Fläche ausbreitet.

(Translation: "Most people are storytellers to themselves. They do not tolerate poetry except for now and then, and even if they knot a few 'becauses' and 'therefores' into the thread of life, they loathe all reflection that goes beyond that: they love the orderly succession of facts because it looks like a necessity, and feel secure in the midst of chaos through the impression that their lives run a well determined 'course'. And Ulrich now noticed that he had lost this primitive narrative, which private life still clings to, although everything had obviously become unnarratable and no longer followed a thread, but woven in an infinitely textured region.") (Musil, 1930–1943. Vol. 1, p. 650.)

39. This yields a completely novel perspective on 'affordances'. Unfortunately, the present format does not permit us to explore that in any detail.
40. Sports photographers train themselves for this, a life-long project of honing their professional proficiency. The painter has an easier job, since the painted image need not be an optical copy (conventionally called 'truth').
41. Think of the Bayeux tapistry (TAPETE·BAIOCENSE), which is an embroidered cloth nearly 70 m long (50 cm hight) of the 11th c. Even more ancient and just as impressive is Trajan's column (COLVMNA·TRAIANI) (completed 113 ACE) in Rome. The 190-m frieze (height 1–1.2 m) winds around the shaft 23 times.
42. An episode from the Life of Saint Augustine (de Voragine, 1931 [1275]):

    It was so that this glorious doctor made and compiled many volumes, as afore is said, among whom he made a book of the Trinity, in which he studied and mused sore in his mind; so far forth that on a time as he went by the sea-side in Africa, studying on the Trinity, he found by the sea-side a little child which had made a little pit in the sand, and in his hand a little spoon. And with the spoon he took out water of the large sea and poured it into the pit. And when S. Augustin beheld him he marveled, and demanded him what he did. And he answered and said: "I will ladle out and bring all this water of the sea into this pit." "What?" said he; "it is impossible; how may it be done, sith the sea is so great and large, and thy pit and spoon so little?" "Yes, forsooth," said he; "I shall lightlier and sooner draw all the water of the sea and bring it into this pit than thou shalt bring the mystery of the Trinity and his divinity into thy little understanding as to the regard thereof; for the mystery of the Trinity is greater and larger to the comparison of

thy wit and brain than is this great sea unto this little pit." And therewith the child vanquished away.

It is not a topic that would excite a lay public (like the episode involving the lion). It may have been the phantasy of monks who struggled with the concept of the Trinity themselves.

43. The intended audience of the painter would be well familiar with the topic, both from texts and from seeing various other paintings of the same topic.
44. Ovid (1717 [ca. 8 ACE]), Book I:

Fear gave her wings; and as she fled, the wind
Increasing, spread her flowing hair behind;
And left her legs and thighs expos'd to view:
Which made the God more eager to pursue.
…
The nymph grew pale, and in a mortal fright,
…
Oh help, she cry'd, in this extreamest need!
…
Or change my form, whence all my sorrows come.
Scarce had she finish'd, when her feet she found
Benumb'd with cold, and fasten'd to the ground:
A filmy rind about her body grows;
Her hair to leaves, her arms extend to boughs:
The nymph is all into a lawrel gone;
The smoothness of her skin remains alone.
Yet Phoebus loves her still, and casting round
Her bole, his arms, some little warmth he found.
The tree still panted in th' unfinish'd part:
Not wholly vegetive, and heav'd her heart.
He fixt his lips upon the trembling rind;
It swerv'd aside, and his embrace declin'd.

Notice how Ovid's text evokes immediate visual imagery.

45. Again, the intended audience would have been familiar with the topic. Many would have been able to quote this part of Ovid's poem by heart.
46. Even more bark would intrude on the nude figures and thus render the piece less attractive, something that would not have pleased the patron Cardinal Scipione Borghese.
47. The earliest by Étienne-Jules Marey (1830–1904) in 1887, a bronze representing the phases of the flight of a bird. Marey based this on his photographs.
48. Indeed, 'abstract' because clock-time moments (the time-frozen bird images at regular spatial intervals) are never part of visual perception.

49. The King James Version 1 Samuel 17 has:
    48 … the Philistine arose, and came, ….
    49 And David put his hand in his bag, and took thence a stone, and slang it, and smote the Philistine in his forehead, that the stone sunk into his forehead; and he fell upon his face to the earth.
    50 So David prevailed over the Philistine with a sling and with a stone, and smote the Philistine, and slew him; ….
50. King James version 1 Samuel 17:
    51 Therefore David ran, and stood upon the Philistine, and took his sword, and drew it out of the sheath thereof, and slew him, and cut off his head therewith ….
    54 And David took the head of the Philistine, and brought it to Jerusalem; …
    57 And as David returned from the slaughter of the Philistine, Abner took him, and brought him before Saul with the head of the Philistine in his hand.
51. The 'deep space' impression is akin to that obtained with a 28-, or 35-mm Summicron at 30 F/11 on a Leica (Rogliatti, 1985).
52. Each ten-minute episode being recorded on a full roll of 1000 feet of 35-mm film.
53. A 'stack' is a LIFO ('last in first out') data structure, named after the familiar mechanisms for storing dishes or platters in cafetarias. One 'pushes down' an item on the stack to temporarily get rid of it, then, at a later time, 'pops up' an item again. The item that pops up is the last one to be pushed down.
54. James Mason (1909–1984) and David Warner (born 1941) play the minor story, James Coburn (1928–2002) and Maximilian Schell (1930–2014) the major one.
55. Carter 'Doc' McCoy (Steve McQueen [1930–1980]) and Carol, his wife (Ali MacGraw [born 1939]) play one story, Rudy Butler (Al Lettieri [1928–1975]) and Fran, the unfortunate veterinarian's wife (Sally Struthers [born 1948]) the other.
56. In the movie Babel (2006) by Alejandro González Iñárritu (born 1963) and Guillermo Arriaga (born 1958) four stories are so tenuously related that the effect is one of flipping between mutually unrelated tv channels. It is not hard to follow all four stories — which is a remarkable mental achievement — but the 'relations' are only ad hoc additions to the narrative, more like footnotes whose reading is facultative. It is an instance of conceptual art that does not fit our context.
57. Some of the 'Charlie's Angels' movies (the first one — based on the tv series — a 2000 film, written by Ryan Rowe, Ed Solomon, and John August) come close. The main story line is very thin indeed. The 'glue' is

mainly due to the personalities of the actors, so one has various tenuously related substories.

58. Ambrose Bierce's (2008 [1890]) *An Occurrence at Owl Creek Bridge* is built on such experience.
59. A movie that received mainly negative reviews due to the fact that the reviewers were out of sync with the times when the movie finally arrived on the American market as the X-rated *Diary of Forbidden Dreams*.
60. The plot seems inspired on Leo Perutz's (1918) *Zwischen Neun und Neun*, but this remains a guess.
61. There is one exception, apparently an attempt to put the viewer on the right foot. It doesn't work that way at the first viewing, looking more like an arbitrary gimmick.
62. For instance, read Genesis 5 or 1 Chronicles 1 in the King James version of the Bible.
63. Or even do *all* cats catch the same mouse over and over again, generation after generation? This was Arthur Schopenhauer's (1819) conviction. The fact of inborn instincts and abilities suggests this is an apt view. A well-known example is the tunnel dug by the pea-weevil larva to be used by the pea-weevil beetle, which has been interpreted as magic or clairvoyance, sometimes as back causation. Such cases played a role in the vitalism witch hunt.
64. Such laughter is fairly commonly used as a natural termination. One of the most spine-chilling may be that of James Coburn (as sergeant Rolf Steiner) at the conclusion of Sam Peckinpah's *Cross of Iron*.
65. A great example is John Berger's (1990) novel *Lilac And Flag, An Old Wives Tale of a City* which somehow merges shreds of experiences of different European cities in a single narrative.
66. In Western academic thought Leibniz's *Monadology* and theory of *petites perceptions* may be interpreted as an early formal theory of the subconscious.
67. They '*… are the only ties of our thoughts, they are really to us the cement of the universe, and all the operations of the mind must, in great measure, depend on them*' (Hume (1938 [1740]), Abstract 35.)
68. Classical work, from Aristotle to the present, tends to conceive of the imagination as *reproductive of earlier perceptions*. This is a major (tacit) misunderstanding.
69. Also 'chronosthesia,' mental time travel. We avoid the notion of mental time travel, as it relates too heavily on clock-time and external description.
70. There could be a long list of writers, poets, artists, including a few philosophers and even scientists here. It is not that these ideas are anyway special.

71. Here is an example of such a (typically human!) influence of sapience on sentience (Tsunetomo, 1979 [1716]):

> Among the maxims on Lord Naoshige's wall there was this one: "Matters of great concern should be treated lightly." Master lttei commented, "Matters of small concern should be treated seriously." Among one's affairs there should not be more than two or three matters of what one could call great concern. If these are deliberated upon during ordinary times, they can be understood. Thinking about things previously and then handling them lightly when the time comes is what this is all about. (Yamamoto Tsunetomo, *Hagakure Kikigaki*, 1716)

How does this work? You *reflect* on things in sapience, all relevant events are counterfactual. You *handle* things in the moment now, perhaps even automatically, deploying the mind of no-mind. Thus, even if you 'react in a reflex' the sentient mind might have been 'prepared' by the sapient mind. Such 'retro–sapiens' is common when experiencing art works.

72. With the philosopher Donald Campbell (1916–1996) one speaks of 'downward causation' (Campbell, 1974). One phenomenon that fits here is that of ideasthesia. Not unexpectedly, the possible relation to the arts has been noticed (Nikolić, 2016).

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