

# Indeterminacy and overcomplexity



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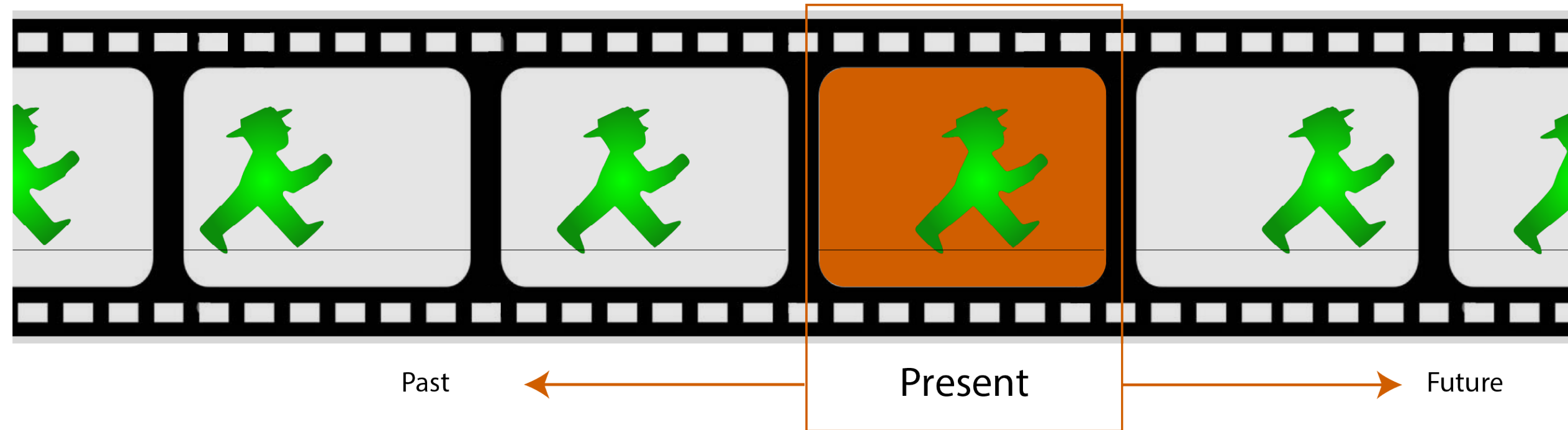
**In order to understand what (in)determinacy  
and (over)complexity mean, we must first  
look at what it means when we talk about  
time.**

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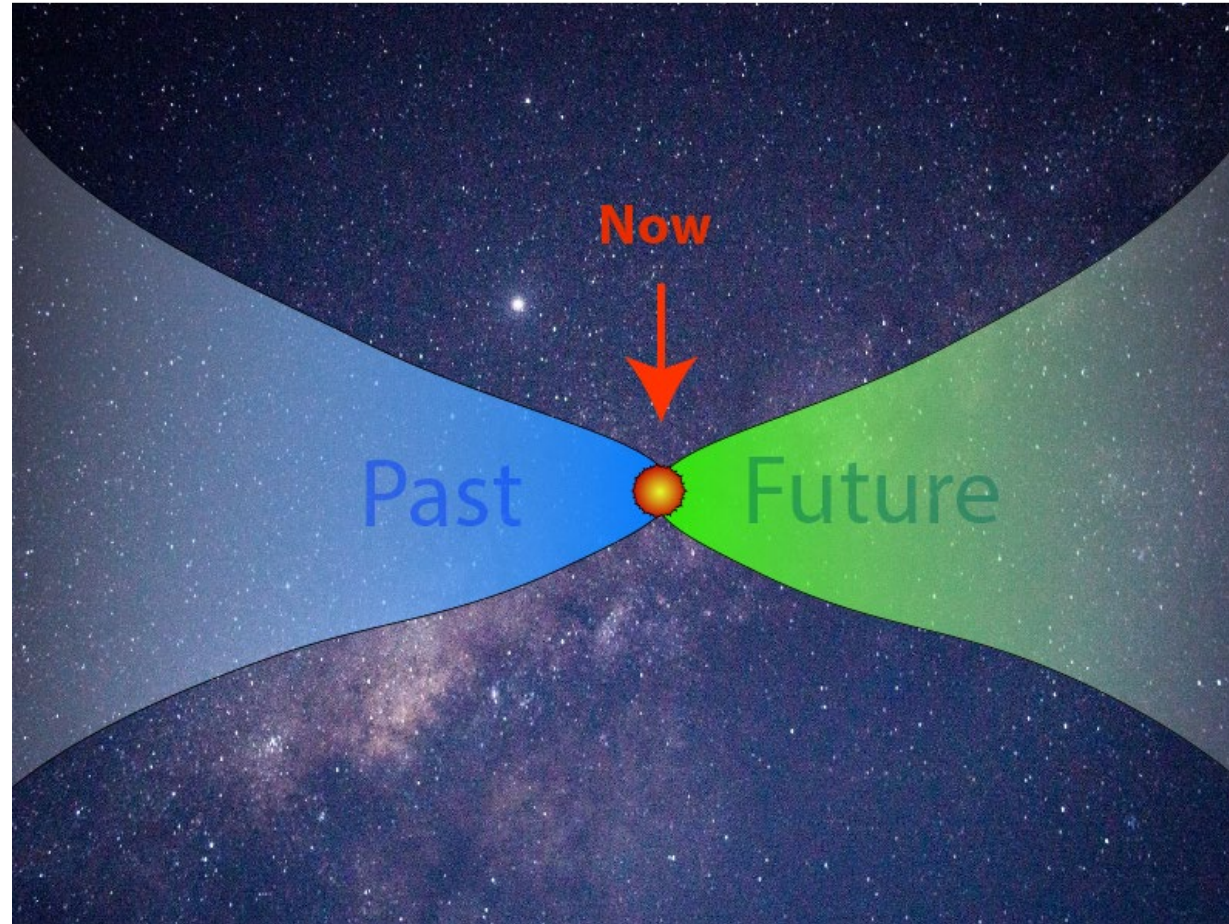
**1st model: Time as a pure sequence of states: without present, past and future**

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**2nd model: Time as a structured sequence of states: the present lies in the middle between past and future**

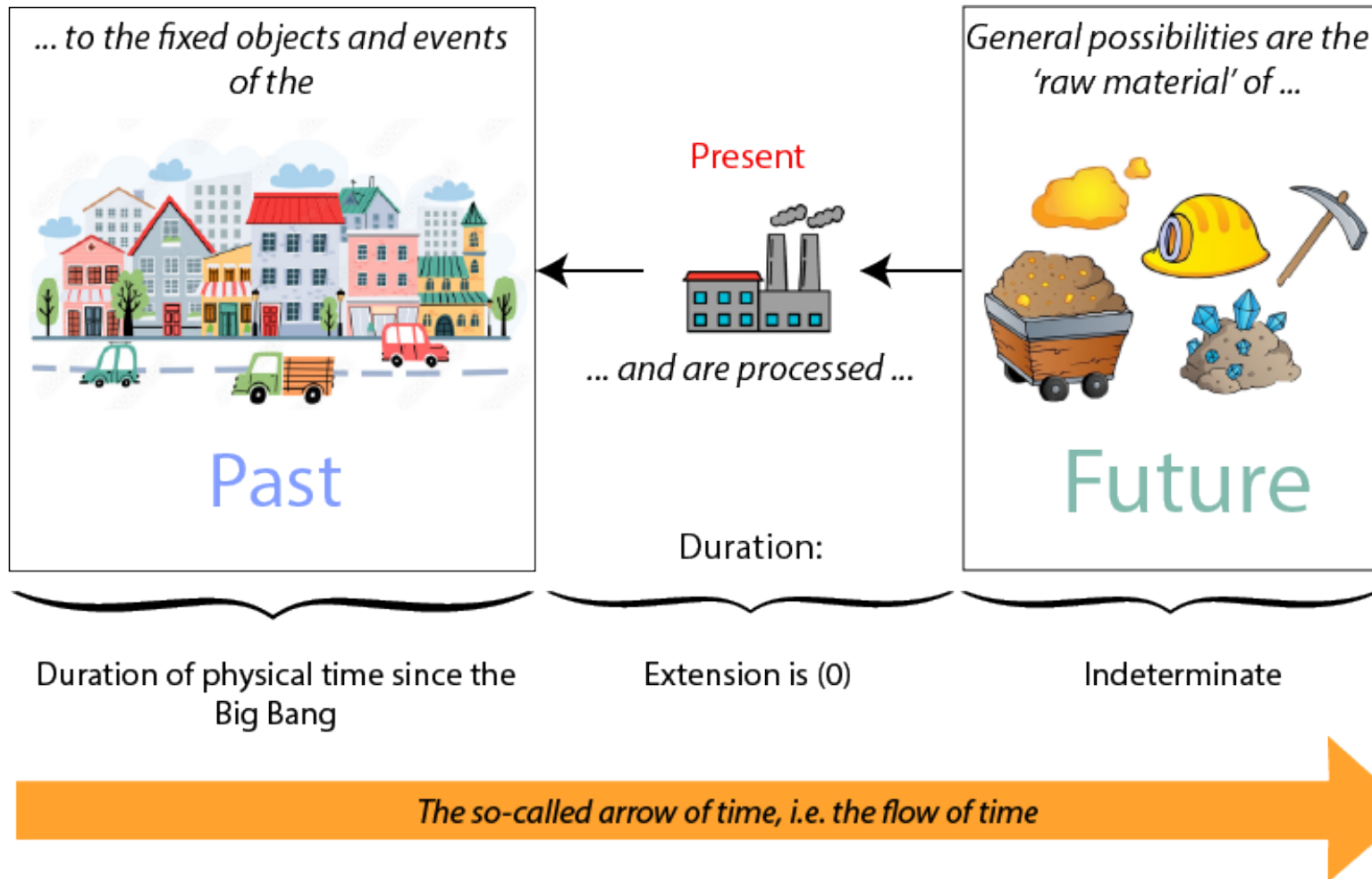
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**Continuation of the 2nd model: Today we imagine that the future becomes the past through the present (the now).**

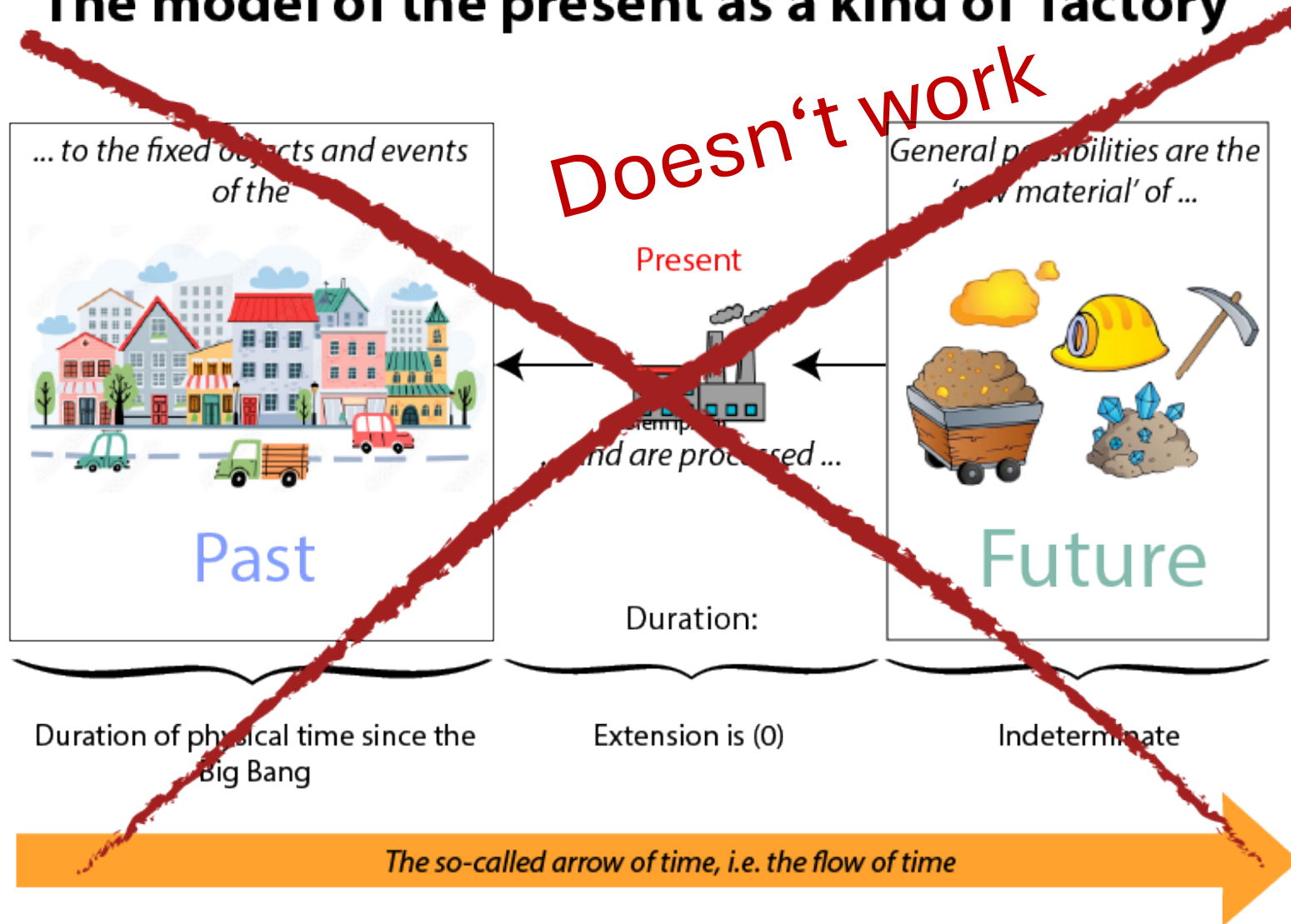
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# The model of the present as a kind of 'factory'



⑥

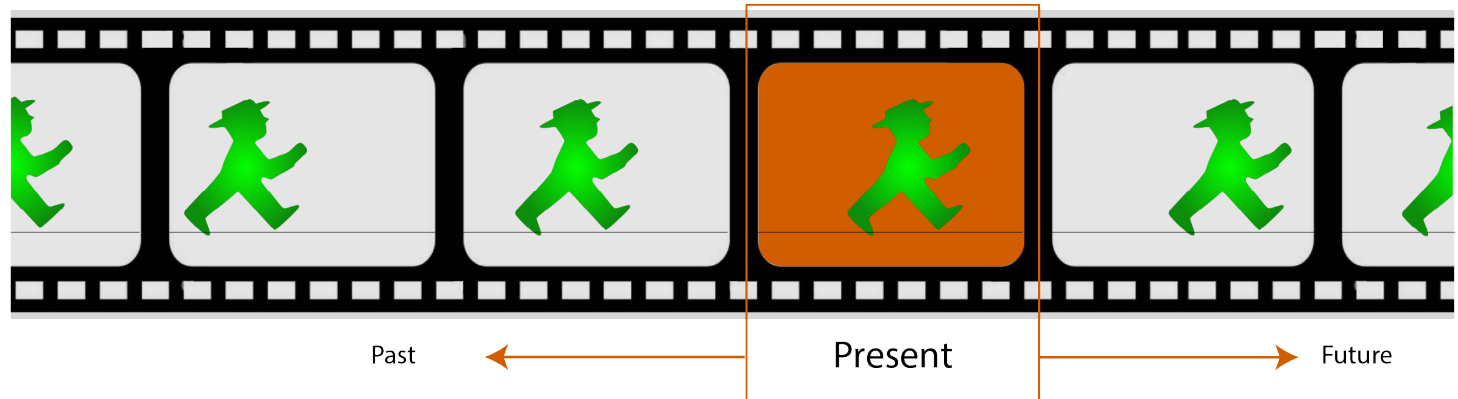
# The model of the present as a kind of 'factory'



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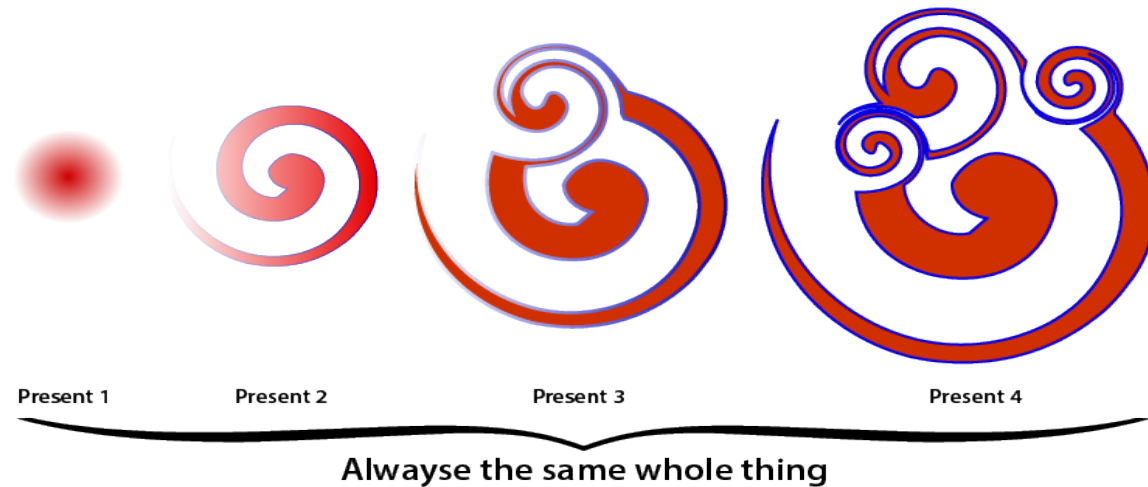
## Solution: Time as two combined modes of change

(1) simple change of state:



*plus*

(2) structural development, i.e. increasing complexity:





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## **This raises two initial questions:**

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**(1) Is 'the whole' a thing or an object? Or what else?**

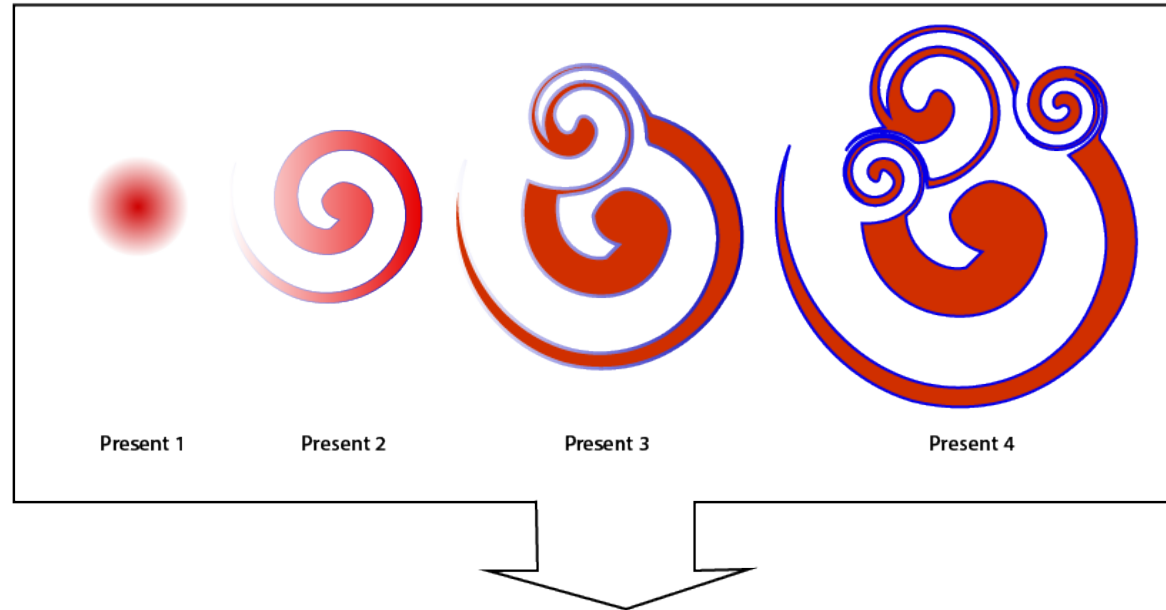
**Answer: Neither thing nor object, but pure dynamis (potentiality)**

**(2) Then what are the future and the past?**

**Answer: Products of the vivid imagination**

⑨.a

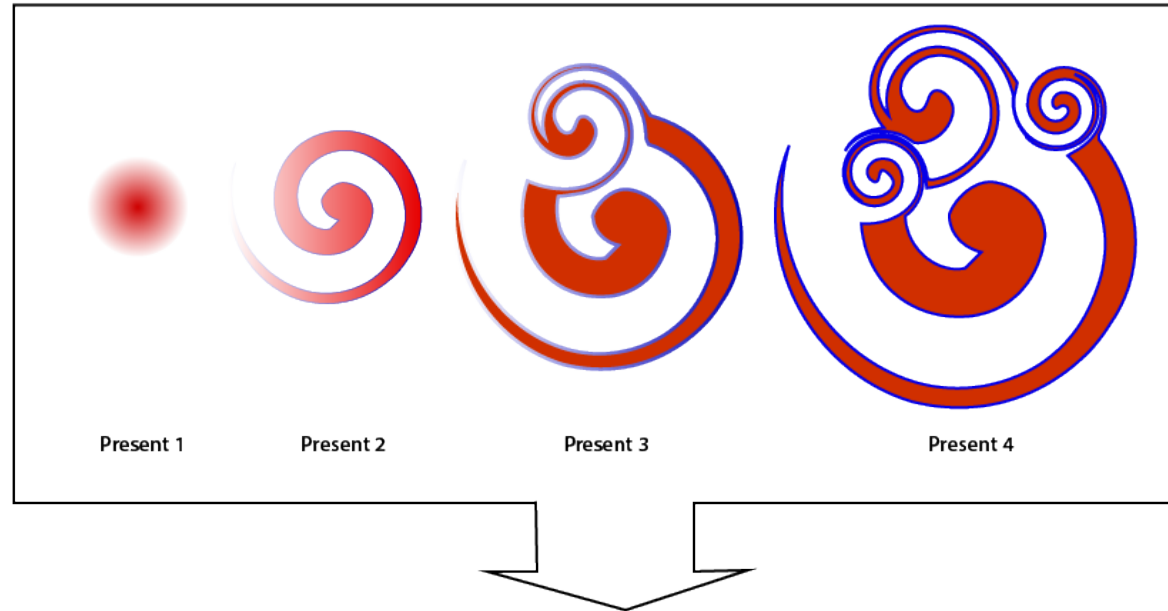
## What does that mean?



- (1) All changes and developments, i.e. the future and the past, take place in the present. They are the dynamics of the now, i.e. the present.
- (2) The function of this now-dynamic is the transformation of **possibilities for an open development** into a **fixed structure**.

⑨.b

## What does that mean?



This is a completely different model to **Einstein's 'block universe'**. Einstein was a supporter of the **nomologically closed** universe, i.e. the hypothesis that the cosmos was governed from the beginning by an unchanging set of unambiguous natural laws. He therefore denied the flow of time and declared the human perception of time to be an illusion. Because the entire course of cosmic existence is fixed from the outset in such a model, there is also no human freedom in it.

⑩

## Now we can also give a new answer to the question of what ‘overcomplexity’ and ‘indeterminacy’ mean:

- (1) Both terms are closely related. They are basically two aspects of the same feature of the dynamic now.
- (2) If the now is a continued, i.e. recursive transformation function, then it must be explained what the ‘input’ and ‘output’ of this function is.

## The 'input' and 'output' of the now:

- (1) The now-function produces a discontinuous sequence of structural states (following the fact of the discontinuity of the entire physical dynamics discovered by Max Planck, that led to the development of quantum mechanics, but to this day stands in contrast to Einstein's relativistic cosmology, in which space and time are continuous.).
- (2) Each of these states follows on from the previous state, i.e. it also changes the horizon of possibilities for further changes of state and the structural development of everything that has already come into being.
- (3) The dynamic 'pressure' for change and development is not reduced or used up as a result. It always remains constant.



**That means: ...**

# 1. The ‚Input‘ of the now:

- (1) The **horizon of possibilities** for the next state is fundamentally open, limited only by the structures that have already been created and from which the next state emerges.
- (2) In other words, every change and every development is possible, as long as it takes place within the framework of the structures that have already emerged, i.e. is compatible with them.
- (3) With regard to the developmental openness of these structures, this means complete openness to the creation of ever more **complex internal structures**, which in turn are summarised into complex new units (‘reduction of complexity’ according to Luhmann through summarization to new kinds of unity)
- (4) Note the difference between a certain, i.e. **finite, quantum of energy** in the entire universe and the inexhaustible, i.e. **infinite**, possibility of ever **further internal differentiation**.

## 2. The ‚Output‘ of the now:

- (1) Permanent creation of new structural reality, i.e. an **ever changing, new horizon of conditions** for the effect of the primary dynamics of change and development.
- (2) Creating the conditions for what cognitively gifted living beings perceive or **imagine as the future and the past**.
- (3) Opening up the necessity for us as humans to constantly **evaluate and concretise the opportunities and risks** in dealing with an open future.

## So what does 'overcomplexity' mean?

- (1) The terms 'complexity' and 'overcomplexity' differ in that 'complexity' denotes a certain degree of structural differentiation, while 'overcomplexity' means that there is always an excess of **structural openness** for further developments that cannot be calculated.
- (2) Because 'what is to come' is nevertheless open to (internal) development under the conditions of what has already come into being, it is never possible to say with absolute certainty how the human world in particular will develop. The **logical internal space** of further structural differentiation is infinite.
- (3) Apart from the currently limiting conditions of change and development of structures that have already emerged, there are **no absolute 'laws of nature'** - and (unfortunately) no absolutely valid human-social rules of order.



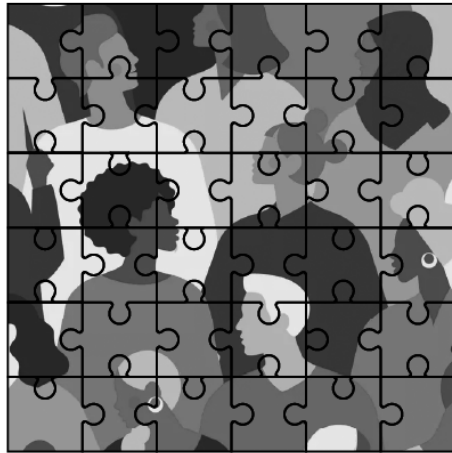
## And what does 'indeterminacy' mean?

- (1) The concept of indeterminacy used here merely refers to the **ontological incompleteness** of all physical, biological and social entities and their properties.
- (2) Entirely abstract entities, e.g. concepts or mathematical objects, can still be completely determined because they are defined in this way.
- (3) Consequently, we are not dealing here with an epistemological incompleteness of our knowledge, but with an ontological, i.e. unskippable, **indecisiveness of our own future** - in the shaping of which we ourselves can participate.

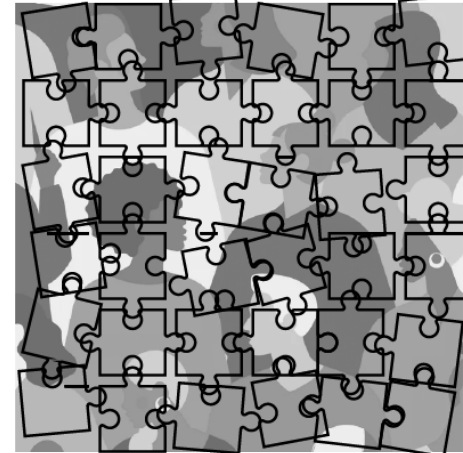
## ...and what does this mean for human freedom, both for individuals and for entire societies?

- (1) This view of the ontological nature of the cosmos results in a completely **new concept of freedom**. It does not focus on freedom of will or freedom of choice.
- (2) Persons as biologically based beings, i.e. as human beings, are so strongly biographically, biologically, chemically and ultimately physically determined that the old concept of freedom is hardly applicable.
- (3) Our freedom is therefore essentially that which results from our **relationship with our environment**, namely:

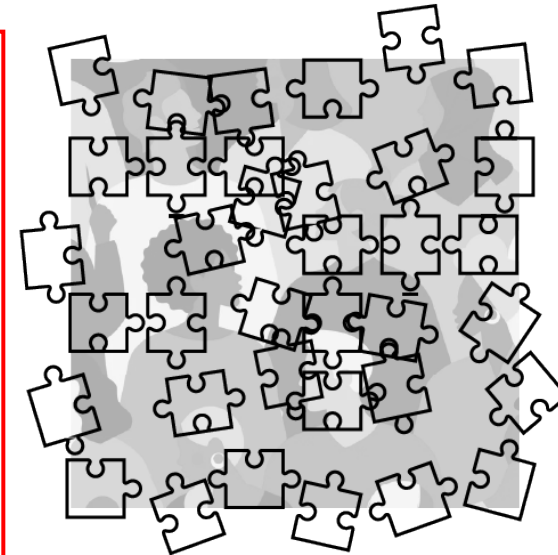
## Three degrees of freedom can be distinguished:



(a) The totalitarian society



(b) The liberal society



(b) The decaying society

**My preferred variant: each piece of the puzzle, i.e. each person, has their own degree of freedom, but a social whole is still possible.**



*Thank you for your attention.*