

# The Anthropic Principle with Active Observer

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## Abstract

*This paper includes a development of the AP: The Anthropic Principle with active observer. In order to introduce a generalization of Mach Principle and a relaxation of the Causality Principle involved we assume the existence of intelligent beings in the Universe.*

**Key words:** *Anthropic Principle, Mach Principle, Causality Principle*

## Introduction

Progress researches and developments in the field of Physics and Metaphysics generate reasons for the active observer concept statements and the related Anthropic Principle assertion [1].

The development of AP is feasible starting from the investigation of the essential properties of humans as intelligent beings, i.e. a system with reason, thinking being, being with consciousness, etc.

## The Generalized Mach Principle

The generalized Mach principle (GMP) states it that every property of the material systems is the result of interactions (the change of energy and physics information) with others systems in the universe [2, 3, 4, 5, 6, 7, 8].

GMP helps one to demonstrate that the specific properties of a system have inward determinations generated by the inner structure (internal interactions), and by external determinations (interactions with other systems) too.

The human being, the most complex system known already starts from its genetic code. The genetic code is the information stored as a consequence of the previous (past) interactions specific to the species. The potential human beings (this is independent of interactions) manifest/bring up only by interactions with other intelligent beings.

From an informational point of view, the human being is a system which changes, stores, processes and generates (accomplished) stored information and creates new information. *The generation and creation of the information are specific properties of the humans* produced in two ways:

1. *by intuition*. The idea springs up spontaneously. This phenomenon is related to the extra sensorial perception. The intuition is clear-sightedness without conscious control and it is

- non-sequentially generated. It is proper to mystical and metaphysical knowledge, but it is involved in artistic, scientific and technical creation, as well. Intuition is a creation of information, i.e. new information as related to the wholeness of the human knowledge;
2. by *forecast* (prediction). The forecast is the prediction of an event based on the initial experimental data and theories related to the given phenomenon. It is specific to scientific knowledge.

### **Extended Relativity. The Principle of Relaxed Causality**

The expectation of an event using initial data and the theory related to the given phenomenon is similar to the phenomenon of interaction between the actual state of the physical system and its future state, thus with an information transfer from future to present time [5, 6, 7, 8]. This process takes place only in the presence of an active observer. For this type of interaction it is possible to specify a propagation speed, too. If the propagation speed is  $v = \Delta x / \Delta t$ , with  $\Delta x$  the distance between the investigated system and the laboratory system, and  $\Delta t = t_p - t_e$  ( $t_p$  is the time when the forecast is done and  $t_e$  is the time when the given event is produced in a natural way), then:

1. if  $t_p \in (t_e, t_e + \Delta x / c)$ , then the velocity is greater than that light speed  $c$ ;
2. if the  $t_p \in (0, t_e)$ , then the velocity is negative, i.e. the cause is in the future.

Examining these results the conclusion is that the phenomena produced by man or that in which man is involved have a velocity scale outside the range  $[0, c]$ . The physical meaning of a negative velocity is that on the time axis the effect is prior to the cause. If these phenomena are included into science the causality principle must be presented as: "each effect has a cause" excluding the restriction "the cause precedes the effect on the time axis". The capability of science to make predictions (prognosis) gives researchers the state of active observers, i.e. they participate to the observation of the phenomena and at the same time they are changing the causal chain (the problem of man's freedom!).

### **Active Observer**

The observability of the world phenomena is a complex process. The observers defined in the theory of relativity and in AP are passive observers (PO), i.e. they only reflected reality in the range of validity of the system. The passive observers only detect the generation and development of specific phenomena, so they are conscious of reality.

The investigation of the developmental process of the human beings and human species shows the existence of active observers (AO), too. They actively involve themselves in their inner (formation as individuals) and external (changing the Nature) phenomena. Therefore, the universe develops in the presence of man, as a result of active involvement [9].

The active feature of the observer is determined by his engagement in the processes of individual development and of the evolution his species by changing some manifestations of nature.

## AP with Active Observer

AP was formulated in a restrictive meaning: it was considered only the human involvement (existence) as PO; it was pointed out that the existence of PO is the most certain phenomenon.

The fact that the action of the intelligent systems (AO) changes the natural development, i.e. without any enforcement (coercion) from the observer to the phenomena, involves a universe evolution other than that predicted by Physics.

Due to the fact that Physics does not include Man as AO, the universe models developed in the framework of Physics do not include him as observer. In the evolution of the universe models compatible with classical Physics are states *de facto* incompatible with the complex structure characteristic to phenomena and observers. For example, the collapsed states in the oscillant model and the low-density states in the case of the indefinite expansion. For this reason it is essential to develop:

1. a formulation *ad modo scientie* of some theories of nature including the observer, i.e. the extended theory of relativity [9], quantum mechanics with an appropriate interpretation;
2. a guidance of the consciousness and skilled humanity to the elaboration of a concept about nature as much as possible in agreement with nature itself which is *a priori* organically compatible with the existence of humans, i.e. AP with AO.

The AO concept is wider if AO perception abilities and extra sensorial actions are considered giving the observer the opportunity of another type of connection (interaction) with his internal and external world.

The paranormal abilities of Man determine a sharp change in his action and knowledge. These abilities link, either consciously or unconsciously, the human being with each point in the universe and with each moment of its development. In this case the link Man – Universe is so strong that it involves, here and now, the backgrounds of the human and universe existence [10].

An illustration of this state is the parabola of the computer [11]. The human being can create a new type of universe using a computer. For this he creates and formulates a supercode. In the super code a set of subprograms are in the position of changing information between themselves in such a way that, some of them are increased, and other are decreased in the complexity up the point of vanishing (the fight for existence). The subprograms model “beings” and “objects”. The model evolves from the theories of the evolutions of life on Earth from the simplest systems with feed-back and reproductive facilities to the human beings. According to the coding patterns the evolution framework is generated in the super code, so it is predictable. If a random independent factor (freedom factor) is included too, deviations from the initial program can occur. The subprograms can evolve to such a complexity so as to support consciousness.

These subprograms look like “beings” which fill: an internal media, and external environment as relationship and boundary between themselves and between themselves and subprogram – “objects”, and a time, as they and the other subprograms are developing. All these are in a real world related to humans – the world of computer assembled by memory and operation units.

The properties of these subprograms, as separate and complex entities, are coded in the computer language determined by the computer scientist, and language resulting from the communication between subprograms- “beings”. All the process, i.e. generating and development of the subprograms, is expressed *in aesentia* by the basic units: zero and one, which have correspondences to existence – non-existence, true – false and other bipolarities.

## Conclusions

Active observers do not only “observe”, through measurements, the state of Universe and develop their models but they determine the local modification of the Universe by means of self-will. This local modification influence the future states of the Universe and for this reason, from scientifically point of view, the observers are co participants on the Universe evolution. From a spiritual point of view, observers are co-participants to Creation.

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## Principiul Antropic cu Observator Activ

### Rezumat

*Lucrarea conține o dezvoltare a Principiul Antropic: Principiul Antropic cu observator activ. Pentru a realiza această dezvoltare se introduce o generalizare a principiului lui Mach și o relaxare a principiului cauzalității implicate de existența în Univers a ființelor inteligente.*