

## Jocaxian's Theorems

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### Abstract

We will show 3 new theorems and one principle: (1) Jocaxian Theorem of First Cause (JTFC); (2) Time Leakage Jocaxian Theorem (TLJT); (3) The Existence Theorem; and (4) The Philosophical Uncertainty Principle (PUP).

### *Jocaxian Theorem of First Cause (JTFC)*

The Jocaxian theorem of First Cause establishes that:

*The first cause of all events that took place in a closed system (one that is not influenced by events external to the system) is the randomization.*

Proof:

Let's use the concept of time in which time is defined as a relationship between events. An event is a change of state in the system. Therefore, time is not independent from whatever happens. If, for example, no event takes place, that is, the state of the system remains unaltered, time then disappears. Change is necessary so that time can exist. If there is no change, there is no time.

Randomization is the word we use to say that there is unpredictability or that there are no causes. There are two types of randomization: objective and subjective. In the subjective randomization there are causes for the phenomenon, but they are either unknown or we cannot describe them. In the objective randomization, which we will talk about, the phenomenon occurs with no real causes, that is, its causes are inexistent.

The objective randomization exists in our nature, in our universe. As an example, we can cite the moment of decay of an electron in an atom: the electron can decay from a more energetic orbit to a lower-energy one by liberating a photon. Such phenomenon is not regulated by any physical law: it is considered by the quantum mechanics to be an objectively random phenomenon. There is nothing, no rule that can determine *when* the electron will decay from its orbit. Another example would be the creation and destruction of virtual particles in the vacuum.

First, in order to demonstrate the theorem, we will prove that there is no infinite time in past, that is, we cannot take the causes of the events to the infinite past and then say that there has always been a cause that preceded a given effect. Thus, we will use the *Kalam's Theorem* [1].

The Kalam's Theorem establishes that there is no infinite time in past. If, absurdly, there had been any event occurred in an infinite time in past, then our current present would take an infinite time to come, starting from that past. But what does "an infinite time to occur" mean? An infinite time for something to occur means that this thing will never occur. Thus, events occurred in an infinite time in past imply that we cannot have our present, but this is an absurd thinking once we are in the present! Then we can conclude that there has not been any event in an infinite time in past. That means we can deduce another important corollary: time had to have a beginning, necessarily.

As there is no infinite time in past and time had to have a beginning, the first occurring event had no previous cause, that is, it was a random event. And the theorem is proved.

### ***Time Leakage Jocaxian Theorem (TLJT)***

The Time Leakage Jocaxian Theorem establishes that:

*If two systems are not isolated from each other and time exists in one of them, then time will exist in the other as well.*

Proof:

Time is the relationship between events. If time occurs in one of the systems and they are not isolated from each other, then these events can be also correlated from the other system. Therefore, the first system, in which time exists, can be a time counter for the second system. Thus, there will be time in the second system too.

We can use both theorems to argue against the existence of God: God cannot be timeless as this would violate the Time Leakage Jocaxian theorem. If there is time in our universe and it is not isolated from God, then time also exists to God. Besides that, by the JTFC there is no necessity for God to generate the first phenomenon. This refutes Saint Thomas Aquinas' argument, which says that the movement requires a first engine that would be God. Also, it refutes the idea of a forever existent God, once it would contradict the corollary of the beginning of time.

### ***The Existence Theorem***

We will prove that there is an ultimate reality, a reality that does not depend on any interpretation of any being to exist.

In this text, we define reality – real existence – as events and/or facts that do not depend on interpretation (=thought, imagination, dream or processing) of any being to exist.

#### **Demonstration**

We will begin our proofing with “something 1”, that can be any object being observed e.g. an apple, or even the thinking itself: consciousness.

I observe something 1.

If this something 1 is the reality, the proofing finishes.

If Not:

This something 1 is just an interpretation (or imagination) of a being 1 and, in fact, does not exist in the reality. But this interpretation in itself of something 1, done by the supposed being 1, is also something 2.

If this something 2 is reality, then our proofing finishes.

If Not:

Something 2 is just an interpretation of a being 2 whose interpretation, in itself, is something 3.

If something 3 exists as a reality, the proofing finishes.

If Not:

This something 3 is just an interpretation of a being 3, which we call something 4.

Thus, in a generic way, we have:

If something (i) exists as reality, the proofing finishes.

If not:

Something (i) is only an interpretation (or imagination) of a being (i) whose interpretation in itself we call something (i+1).

If something (i+1) exists in reality the proofing finishes.

And so on. This way, if the interpretation never corresponds to a real existence, we would have an infinite recursion, which would be illogical. It would be something like a dream of a dream of a dream of a dream... infinitely. So, in order not to have this infinite cycle, we must have, at some point, an end to this recursion. That means that some of the “something (i)” have a real existence, that is, it is not an interpretation. And then we prove our theorem: ***“I think, therefore, something exists!”***

### **Examples:**

I see a red crow. The “red crow” can be real, and if it is not, my interpretation of it can. Otherwise, a being can be imagining (or dreaming) that “I” am imagining that I see a “red crow”.

Another example would be a virtual universe: there are beings that do not really exist; they are simulated in a computer. These beings observe something. What they observe is not real either: it is virtual. Also, the beings themselves and their dreams do not exist: they are virtual. Therefore, their interpretations do not exist.

However, the computer which interprets them in this example is real, and its “imagination” (= its processing) is real, once it is what generates the virtual universe, the virtual beings and its imagination. That is:

What the virtual being observes is not real; it is a simulation of the computer.

The virtual being is not real either; it is simulated and depends on the processing of a computer.

The interpretation of the virtual being is not real either, once it depends on the processing of a computer.

The interpretation of the computer (= its processing) which produces the virtual being and what it imagines, in this example, would be real.

### **Refuting Descartes**

That means that “I think, therefore I exist” (“Cogito, ergo sum”) from Descartes can be untrue once the thinking being, as demonstrated in the example above, can be unreal. However, as proved before, there must be some level of interpretation in which at least the interpretation itself is real.

By the “Occam’s razor”, as long there is no contrary evidence, we must consider the lower interpretative level a reality. If I observe something 1, this something 1 must exist.

**Corollary: There is a real being.**

As a corollary of the system we can also claim that if I observe something, there must be some “being” that has a real existence, i.e. this being itself is not an interpretation.

Proof:

As we proved that there is an interpretation that is real, that is, an interpretation that does not depend on the interpretation of another being to exist, then the being that interprets must exist as well. If this “being” which does the real interpretation did not exist, that is, if it was the interpretation of another being, then its interpretation would not be real, as it would depend on this other being. Therefore, the real existence of a being is necessary so that a real interpretation can exist.

### **The Philosophical Uncertainty Principle (PUP)**

Summary: We will establish a philosophical scientific principle similar to Heisenberg’s uncertainty principle, but more comprehensive.

Key Words: Philosophy, Uncertainty, PUP, Philosophical Uncertainty Principle.

Quantum mechanics, a branch of Physics that study the micro cosmos, has a fundamental principle known as “Uncertainty Principle”. This principle, discovered by Heisenberg, establishes the physical impossibility of knowing (or measuring), simultaneously, the position and speed of a particle with a precision larger than a given constant [1]. This imprecision is considered to be a fundamental law in quantum mechanics, and such uncertainty does not depend on any technology, it is considered to be an attribute of the universe.

Since the advent of the “Expanded Science” [2], we know it is impossible to refute a theory as Popper thought. Everything indicated a more comprehensive and less uncertain view of the universe. Such uncertainty must comprehend our observations. Based on these conclusions, I shall propose a principle, which I called “Philosophical Uncertainty Principle”, or PUP. The PUP establishes that:

***“It is impossible to know if some observation, measure or perception corresponds in fact to reality”.***

We can take reality as something that exists regardless of any interpretation, processing or imagination.

Many should probably have already had this idea, but have not formalized it yet because, since the advent of the concept of “Solipsism” [3], we know it is impossible to prove that anything can be in fact reality. And worse than that, even the Solipsism itself can be an illusion, since the “I” that realizes can also be unreal, as shown in “I think, therefore it exists” [4]. That is, it is possible that the “being” itself that observes thinks and feels, does not exist in another level of interpretation.

Besides that, and more important, even if we assumed our reality as real, that is, it exists regardless of any interpretation of a higher level as it is supposed by science, we would still have problems: even so we could not take any observation as real. In order to understand that, we must steal the “shoe box” example from the essay “Expanded Science” [2]:

Suppose we are walking on the street and we observe a shoe box with a brick inside. Can we infer from our observation that what we saw was a shoe box with a brick inside? Unfortunately the answer is no. In principle, one of the following situations can occur – from infinite possible ones – when we observe a brick that is not a brick:

- It was the volume of a radio imitating a brick.
- It was something similar to a brick, but not a brick.
- A momentary cerebral short-circuit made you imagine a brick inside an empty box.
- A new alpha-waves gun was tested on you so you could imagine the brick.
- Someone created a holographic image of the brick so you would think it was real.
- Etc

Such mistakes, although improbable, can happen in any level of observation, be it scientific or not. And that justifies PUP as a fundamental philosophic-scientific principle about the limit of knowledge.