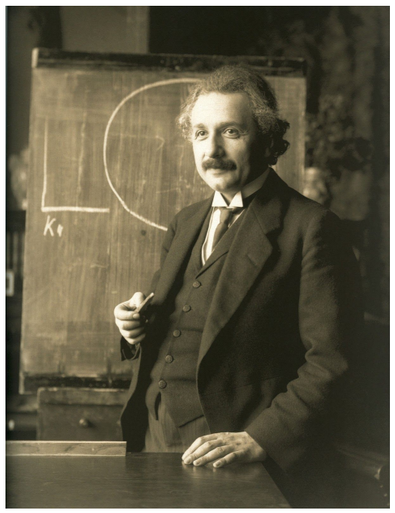
"NOW" means nothing

The time is not universal that we think, according to the theory of time relativity. It depends on our proximity to masses, our move's speed and where we are.



The first to understand the real complexity of time was a well-known scientist, Albert Einstein.

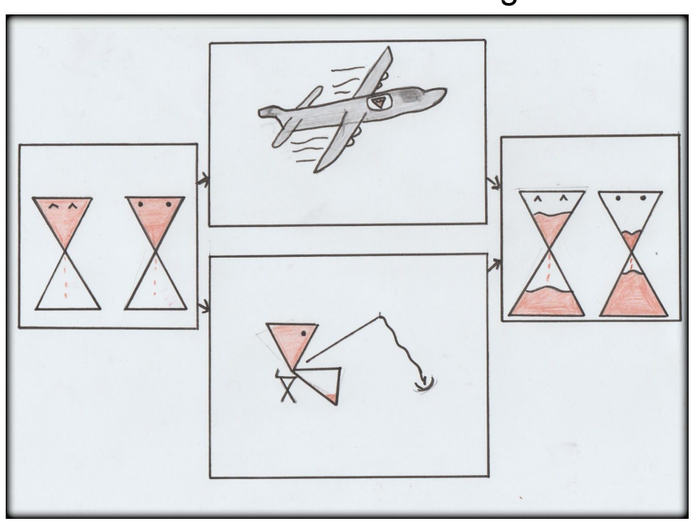
He is the father of the theory of time relativity.

Albert EINSTEIN
(1879-1955)

He thought about its dependance of :

I.VELOCITY:

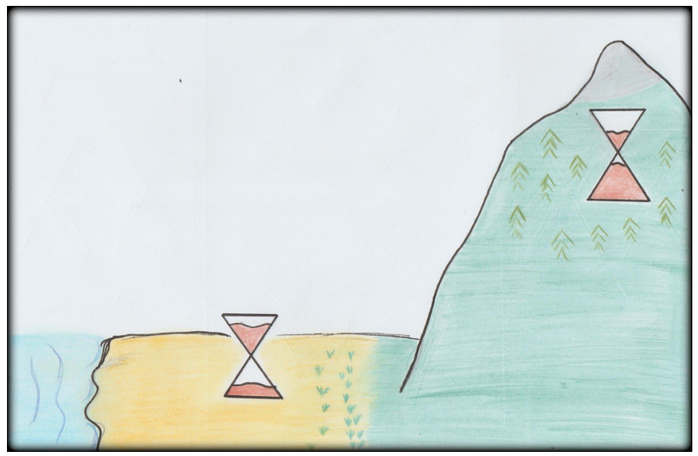
Thanks to his work on electromagnetism.



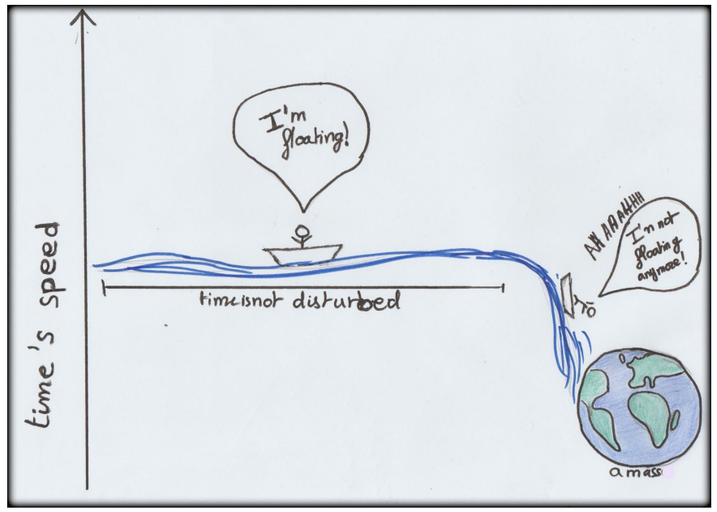
For everything that moves, the time passes more slowly.

II.PROXIMITY TO MASSES

He would link gravity with his notion of time's relativity.



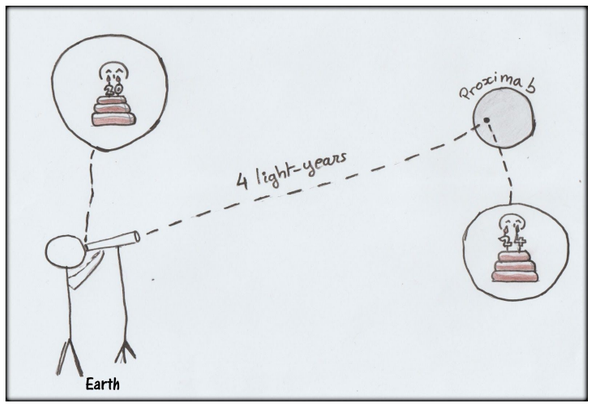
The slowdown of time can be measured on earth with precision timepieces. Indeed, time passes slower in low altitude.



Gravity is an effect of the perturbation of the space-time caused by big masses.

III.DISTANCE OBSERVER-OBSERVED

Thanks to light's velocity.



"Now" is a local notion, defined on a ball center on the observer. The radius varies with the precision of the time's measure.

PRECISION	BALL'S RADIUS
Nanosecond	Few meter
Millisecond	Thousands of kilometers
Tenths second (human perception)	The Earth

In conclusion, the present and specially the notion of "now" is not as easy as we can think.

The variation of time at our scale is so insignificant that "now" still means now for us on Earth but the relativity of time engages a lot of revolution in science and the way to think about the universe.

By PARENT Alexia, PANNEQUIN Maxime and BOUTEILLER Louis

source : http://discovermagazine.com/2018/jun/beyond-time