12. Time density in different worlds

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Our time system is determined by the exchange with other particles. Matter continuously establishes connections to other particles via electrical and gravitational contacts. The number of connections increases with the age of the universe, the older the matter, the greater the number of connections. We have called this kind of time, process time and it is closely related to the age of the particles. With older particles the time density is much higher, there can be many more processes per time unit than in younger, later created matter. So time runs slower further outside than further inside in the cosmos. In addition, it can be stretched and thus slowed down by movement or large concentrations of mass accumulations. But it finds back in a dormant relative system or further away from mass concentrations to its original process time. Particles change their mass when they move outwards along the radius of the universe, but their process time remains unaffected by this. The process time or its time density is thus quasi intrinsically linked to the age of the formation of a particle. Elementary particles that have been brought to borderline velocities can be temporarily slowed down in their lapse of time, which also slows down the process time. But this is different for large matter bodies such as stars and planets. Although the time density of stars and galaxies is changing, this is not possible for the large matter bodies. The time density of stars and galaxies is changing as well with increasing speed, but here it is not possible to bring mass systems to speeds at which the course of time changes noticeably.

If the process time depends only on the age of the particles, their original place of origin and matter can migrate, then it is conceivable in principle that temporally very different old forms of matter come close or even meet. That for example younger matter from further outside meets much older matter from further inside. Then in this way time systems running at different speeds would collide directly with each other. What would happen then? How would they react to each other? Would they adapt to each other while emitting energy, would they approach each other in terms of time, like it is the case in time systems that are caused by different speeds?

We believe not.

In addition, we want to assume that the two time systems even move with the same relative speed, or rest in relation to each other. We know that each larger mass accumulation has its own time system at its surface. The course of the clocks depends on the size of the mass and its radius. Different masses with the same radius have different time stretches. It is not the process time itself, but the process time becomes influenced by masses. Thus two bodies of different sizes with the same process time but different elongation can touch each other without something dramatic happening, although their process times vary slightly from each other. The time expansion decreases inside a mass body, therefore the two bodies attract each other slightly. Because of the electrical repulsive forces they cannot penetrate into each other, but they adhere to each other a little, without moving or energy phenomena appearing that want to dissolve the deviating time stretches. If, on the other hand, two masses from different process time regions come close to or touch each other, this would not lead to an adjustment of the process time. Not as with masses that move at different speeds. One body could rest on the other body and nothing would happen. In principle, it would be conceivable that a human being with a matter from the inside of the universe would stand on a planet with a process time from further outside without suffering any damage.

According to this model, our galaxy has migrated outwards over several hundred million light-years. Should it meet a galaxy from further outside that has migrated inward then there could be an exchange of matter coming from two galaxies with very different redshifts. That a human could fly with a rocket to another planet is inconceivable, because of the enormous distances, but it is very possible that in general some inanimate matter, from completely different time systems, meets coincidentally. Nevertheless we want to stick to our picture and ask ourselves what would happen to an observer on a foreign planet coming from a different time domain. Could he breathe oxygenated air and drink water on an Earth-like planet? Or would he die from it?

The air we breathe here on Earth of course never consists only of the respective parts of the molecules. Air here on Earth is always a mixture of much more. Spores, dust, microorganisms, minerals, bacteria and the like, which are fits, which belongs exactly to our Earth and with which we have grown up. Thus a real Earth-like planet, which has oxygen in noticeable amounts in its atmosphere, also filled with at least its typical microorganisms which we all do not know, remains foreign to us. Likewise, the water will have other bacteria, minerals and microorganisms than on our Earth. They will probably not be tolerable for us, but we will generously ignore this problem here.

According to Big Bang theory, elementary particles and thus atoms and molecules are equal everywhere in universe, must have developed similarly at any place under similar conditions. Everything developed in the same fraction of a second at the same time and then nothing new was ever added again. Inflation has also not changed the structure of the elementary particles. According to common understanding, air and water, apart from biological difficulties, are as good as on Earth and is breathable and drinkable without any problems. In our conception of the world, this looks quite different. After that, there is an associated position and an associated time for each particle. Probably such complex living structures as we cannot even leave our Earth for long times and long distances without being damaged. Most likely we would lose our viability with increasing age and distance before our typically ordered connections disintegrate. The question is probably not so much whether something like this will happen, but rather at what distance from our Earth or our solar system. Even simple organisms would without the vital impulse-giving mechanisms of the home planet not really survive for long, not for years or decades. It is not the structured networked cells alone that keep us alive.

It needs food alive that origin here on Earth, mental stimulations, which in its diversity is only possible on our planet so suitably for us. We do not survive in an isolated system, far away from everything. Our connections with the Earth break off with increasing distance and thus the network to the complex living dissolves within us. The bigger time systems that belong together are, the further they can move away from their origin without falling apart. So a whole galaxy or a cluster of galaxies can make movements on scales of many hundreds of millions of years. Within this wholeness it is therefore possible for a rocky planet like the Earth in our stable solar system to reach completely different time systems. But, if one wants to leave our planetary system, the Milky Way or even our galaxy system, to reach other time systems and perhaps visit such a different world time system, then a completely different behaviour of physics shows up on this level, than that of the Big Bang. We are firmly rooted in this galaxy to the Earth and our solar system, like a plant in earth. According to our ideas life is not universally transplantable.

And yet it was observed that galaxies with clearly different redshifts showed an exchange of matter. So it is probably possible for general matter to change to a foreign time system, but not for living higher beings like us humans. Nevertheless the question still stands in the space, what would happen now, what would a fictitious observer see, if the time systems not only run a little apart, but when there are big differences. The interesting thing about it is that the times do not actually move at different speeds because time stretches, but that the process times are different. We, with the older matter have more processes, i.e. connections to other particles per second, than someone from a younger Earth-like planet. We might feel like the fly, which sees more pictures per second, because of the shorter pathways. She experiences our movements in slow motion and can react in a relaxed way. So do we also experience the world on the younger planet in slow motion?

Maybe, but it is not as inevitably as an expansion of time close to the speed of light. With our macroscopic accumulation of matter, motion is not directly dependent on process time.

Large bodies are determined by their inertia, by how fast we can move an arm sluggishly or walk with our legs, and thereafter our temporally older body is sluggish, than a body in a younger system. After that, the biological processes in the younger system could even be faster. The development to a higher life is always connected with enormous periods of time and is therefore not directly comparable with an expansion in time, in which a body was brought to very high speeds in a relatively short time or flies past close to very large masses. Biological time sequences develop from the complex and thus have their own living rhythm.

Physically, however, the higher cross-linking leads to a denser atomic shell, independent of biology. This means that our bodies are more compact than those on the younger planet and this affects the masses in general. An Earthman would occupy less space there than a comparable creature with younger matter. The greater the time difference, the more conspicuous would be the difference in size. Air molecules or water molecules could therefore not simply be incorporated into our body, not if the difference in size is striking and they can no longer be incorporated into the order structure.

Both the electrical and the gravitational interaction forces are affected by the changed process time. The cycles of the elementary particles run at different speeds and cannot simply adjust to each other if they have different process times. The clocking of the atoms finds less resonance between foreign worlds than in their own. Thus, both the gravitational attraction and the electrical repulsion do not work as strongly as in our world, when two beings touch each other or when we are standing on the surface of the other planet. On a twin Earth, we will indeed less electrically repelled, would therefore have to penetrate more into the planet, but conversely the attraction is also smaller than on our Earth. Nevertheless, the relationship between repulsion and attraction is shifted. Each atom attracts other atoms less, but also repels them less. The gravitational mass attraction is lower and a mixture of old and young matter is then probably not possible permanently. Matter can indeed make connections, but will not achieve these high order arrangements as with solids and would thus have a much weaker stability. The inertia-connections would mainly look for contacts to more familiar atoms, thus further away. At electrical connections, atoms essentially would no longer be limited to two charges, but would search for balancing until again of the corresponding process time-voiced atoms would be adjacent to each other. One a permanently stable connection over a long period of time would not be possible.

The size of the neutral atoms therefore also depends on the age of the matter. Our electrons are very close to the atomic nucleus, much closer than most of the other atoms in the universe. But they are always in the range of their fuzziness, which is determined by the exchange with other atoms. The atoms in solids still have a lot of space between the atoms, but the possible states, at least for the electrons, are in the range of the maximum possible for the solids. In solids, the electrons can not only move free because of the integration into a grid structure, but also because the space begins to become full for them. The number of possible quantum states begins to decrease.

The electrons in the atomic shell are also responsible for the exchange of photons. Can quanta be exchanged in time systems with different numbers of processes per second?

Suppose we measure the speed of a light beam on the younger twin Earth. To do this, we send, for example, light from our own lamp and compare it with light emitted by a resident at the same time. Then the light should propagate with both equally fast with speed of light, although the time of the foreign system creates fewer processes. The speed of light is considered absolute and is the same in all systems. If we mark out a distance of 300,000 km, then the light would have to be emitted by both systems after one second to get there. Only, we are now comparing the process times in the two different systems, then we would accommodate more processes in one second than the observers on the younger Earth and that would mean that a corresponding wavelength or transition that triggered the same quanta is larger. The light in the younger system would arrive at the same speed, but would be red shifted.

The actually white light arrives there slightly reddish for us, or vice versa an observer of the young world would see our light as blue shifted. As we already noticed, the shells of atoms in the foreign world are larger than the shells of Electrons have less often connections with each other. So also the same transition in the atom is further, which leads in analogy to quantum mechanics to a longer wavelength. In our view, time seems to have been stretched, but in fact elementary particles have fewer exchange processes simply because they are younger. It would not change anything if the alien uses our flashlight; our light source has an older matter like us, which does not adapt to the other planet. This strain is analytically appropriate to the redshift in the universe and leads to the same shifts of the shell electrons. However, in our model we no longer need an expansion of space itself, as it is the basis of the Big Bang model, and that is the decisive difference. According to the Big Bang theory, all atoms with the same transition of electrons emit the same light. Everything has the same age in the universe, including light at a distance of billions of light years. The energy of the quanta in the distance is the same as the energy of our photons. The photons only lose energy because the space has stretched on the long epoch of time along the way.

The light arrives with less energy redshifted. According to our model, however, the distant atoms send off the quanta with less energy, because the time passes more slowly there and the transitions are longer. With us, space does not expand. Space has no reality in this sense and cannot influence the course. The quantum is sent off and arrives from its point of view unchanged, right here. If this is the case, then a comparable sun or galaxy so far away would not really be like our sun or galaxy. Then we cannot extrapolate the energy output via the redshift. A galaxy, apparently one billion years after the beginning of all, would then only be one billion years old and would therefore have a much shorter process time. It would not only release lower-energy quanta with the same transition, i.e. be more redshifted, but would also emit much fewer quanta at all after our passage of time. This would then lead to the fact that the sizes of such galaxies are wrongly estimated. The galaxies would then be far less gigantic than previously assumed and would thus fit in much better with each other to the overall picture. They will then be smaller, weaker and less mass than we thought. But they are suitable for a very young, still developing galaxy, where time passes much more slowly.