Near-Future Piece: 69 PCE - Timespace.

The emphasis of physics these days is to create a new branch of the discipline, one to explain the subjective reality around us. This quickly brought us to the realization that time is more fundamental than any of the spatial dimensions, where the four dimensions of spacetime from classical objective physics are those considered spatial dimensions, including the dimension of *time*. (Although time is a privileged spatial dimension because from our perspective we cannot reverse time.)

Timespace is what you get when you think of spacetime strictly in terms of cycles. Around 200 years pre-PCE, a Human by the name of Joseph Fourier[1] invented what was probably the most profound devices in mathematics to this day. This was naturally chosen to be called the *Fourier Transform*[2] *(pronounced 4-E-A transform)*. The Fourier transform allows us to think of the world in terms of *cycles*, or *repetition*.

The transform works like so: I can take any well-behaved *function*[3] that describes an outcome in terms of some input, and I can transform that function into a collection of wiggles. There wiggles are cycles or repetitions, being what we call the *frequency content* of the function that describes the behavior of whatever I'm interested in.

A classic example of what I mean by this is the music heard by the ear from a *song*. A song is a collection of instruments and beats and notes, all blended together into a single sound wave. If you were to visualize what this wave looked like traveling through the air toward your ear, you would see only a single complicated waveform, or wiggle. You would not be able to tell by looking at this single waveform what instruments and notes are playing without listening to the waveform yourself. But, if I take that waveform and apply this mathematical Fourier transform to it, then the output will be the collection of all the individual frequencies playing.

After taking the Fourier transform, you would see distinct high frequency content that you could identify as perhaps a violin. You could see other frequencies that you could identify as bells, or singing. You would see low frequency that is the bass, or even lower, the slow beat of a drum. With knowledge of all these different frequencies from that single waveform, you can then pick and choose which you would like to study. You could erase the low frequency leaving only the violin and bells. You could make the low frequency bass stronger, or louder. You can even add frequencies. Then you can apply the *inverse* Fourier transform to smash everything back together into a single song, and listen to the changes.

This is a primary example of something called *filtering*. Filtering lets us take a complicated and singular world that surrounds us, and break it into manageable chunks. By applying a Fourier transform, we are effectively speaking the *language* of whatever it is we are breaking into chunks. This approach to making sense of our surroundings is so wildly successful, that without it, we would not have what we have today in terms of technology.

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[1] Joseph Fourier: https://en.wikipedia.org/wiki/Joseph_Fourier
[2] Fourier transform: https://en.wikipedia.org/wiki/Fourier_transform
[3] function: https://en.wikipedia.org/wiki/Function_(mathematics)

So. Timespace and spacetime. As it turned out, every single type of output from a function can be considered a *quality*. Interestingly, every single quality happens to be embedded within the fundamental spatial dimensions of spacetime. In other words, it is impossible to think objectively about a quality without it being tied somehow to spacetime. We call these *correlates*.

For example, if you think about the difference between red and blue in your head, you might say that this is beyond the realm of spacetime. You would be wrong however, because by virtue of thinking about red and blue, you must switch between thinking about the two in a cycle of *comparison*. I can relate this to spacetime by watching the difference in brain activity through time and space. As long as I have information about which color you are thinking of in the moment—red, blue, or both—I can create a function that correlates your comparison process in terms of spacetime. That is, even if it is just in your head, as long as I know what red looks like in this context, I can apply a Fourier transform to your brain activity to tell you at exactly what frequencies you tend to think about red.

The point is that the entire world of subjective qualities can map to the domain of cycles and repetitions via a Fourier transform. We call this domain *timespace*. It was called this to emphasize that cycles and repetitions are the tick-tocks of how stuff evolves. In timespace we can define the passage of time as 'change X per cycle Y'. This is much different than spacetime's time, where the passage of time is just 'stuff moves around per second'.

We can take all the little cycles and add them together to form chains and larger cycles. My quality of position in spacetime may in frequency domain look like I am pacing in a circle at my desk. However, taking these smaller qualities as a whole and looking over much larger and longer regions in spacetime, we might see that these pacing cycles are part of a much larger cycle called 'going to work each day'.

The interesting takehome here is that every cycle in timespace and the corresponding movement of stuff through spacetime, no matter how large or complex, has a *qualitative signature*. That is, an experience, where the feel of which depends on surrounding context, and whatever object is serving as the observer.

In my going to work cycle, there is this one chunk of broken concrete experiences this cycle too, because every time I seem to step on it just enough to trip me a little. Every time I step on it, this chunk feels my gravitational pull as I near it, and when close enough, it feels my atoms repel against it and push hard when I step. The concrete doesn't have a brain, so all it has is the simple context of the ground beneath it pushing back. Thus, each time I trip on this concrete, the chunk experiences deformation, every day at around the same time. Me however, I have a brain and a lifetime of experience imprinted on my neural network, so every time I find myself stepping on the chunk walking into the office, my experience is one of disappointment to be going to work, then irritation when I trip on the chunk. All of this is just a single cycle. If we were to think of such a cycle in terms of a physical object by defining the duration of one cycle as a *single moment*, my body would look like a smear through spacetime. Variations in my cycle over the course of many cycles would look like a smear, blurring in different minute ways that correspond to deviations in that cycle.

From the field of plasma physics, we can describe a complex cycle in similar terms as what we

call *adiabatic invariance*. Adiabatic invariance is just when the *essence* of an object's cycle changes very slowly for each go around. When a cycle evolves, we often speak in terms of the *residue* that it leaves behind, or the nature of the change. The residue is the fundamental unit of *passing time* in timespace, and we make sense of a cycle's *motion* in terms that are relative to other cycles.

The reason any of this became important is because any world piece computer—and especially the universal piece computer—needs to have a clock to coordinate synchronization of our limited people, time, and energy. A piece computer needs a way to tick and tock to synchronize, and it needs a way to express what happens between each tick and tock.

Timespace provides the resolution needed to accomplish this. The problem with the spacetime domain is that it only has one unit per dimension, four—which in our case is the *second* and the *meter* (or *foot*). This means that we have one unit to express our most important commodity which is our objective time, and this is extremely low fidelity.

The great thing about timespace is that now we can have all the units we need, and one dimension per unit. Each dimension here is a cycle that corresponds to a subjective quality, and each dimension can be linked to the other dimensions that are relevant, relating to one another via a web of propagating residues.

To differentiate from objective time, we explicitly call this *subjective time*, mainly to highlight the fact that each timeloop has a corresponding quality. Ultimately we can take these cycles and relate them back to objective time, either by taking the inverse Fourier transform of each quality involved, or by counting objective time in terms of how long it takes a cycle to complete.

One of the primary tasks of the universal piece computer is to treat each world piece computer as its own lattice of linked subjective timeloops—all the day-to-day cycles and activities in a world—and link them together with a larger timeloop one level up.

We call the map of linked timeloops, a *timepiece*. The timepiece itself is a world piece computer's clock, ultimately linking up to the universal timepiece at the global level of the universal piece computer. This subjective time architecture enables us to employ simple artificial intelligence bots that crawl the universal timepiece searching for new patterns within all the nooks and crannies of the subjective timeloops to help with the overall process of optimizing world synchronization.

The universal piece (the global peace process) happens to ride on top of the universal timepiece. Because the operations within the peace process must be aligned just right (in the same way bits need to be aligned in the modern electronic computer), and because the alternating tick tock of peace state updates and changes must align with other loops, the timepiece is a fundamental piece within every functioning world piece computer.

Ultimately, the scope of interest reaches peace as the product, be this at the core state of individual inner peace, or or inner peace taken as a sum globally producing the state of global peace. This is where we translate all subjective timeloops back into objective time to take a measure of or a change to the peace state in a given *moment*. The passage of inner peace or global peace states from moment to moment is what we call *piecetime*. [[fucking stupid shitty

sentence - fix all]]

Timespace is interesting because the timeloops themselves are the singular objects. In other words, timeloops are *points* in timespace. To differentiate these loops from spacetime objects, we choose to call timeloops *bodies*. Even spacetime objects that are not moving has a *trivial timeloop*, which is just the body with a timespace smear equal its object. Even trivial timeloops have a corresponding quality, which is simply the quality of the object being at a stationary position, or *location*. We believe there is probably a fundamental comparison rate that may set the 'common time' for all comparison operations within timespace.

These days, we tend to call bodies in timespace *pieces*. Every piece has a corresponding spacetime object, it has a quality, and it has an image.

In objective physics, objects are made up of particles that cannot overlap, and they interact by exchanging force via different particles called *light* that *can* overlap. These are called *Fermions* for objects, and *bosons* for light or image. All the motion of objects can be explained in terms of the shape of spacetime and the light that bounces around filling all space. Each object in spacetime likewise has an *experience* that is defined as the image it 'sees' from the light generated by other interacting objects. In most cases that we are familiar with in our day-to-day living, these light particles are called *photons*.

In subjective physics, bodies are likewise made out of particles that cannot overlap. These particles are pieces. For each piece, or timeloop, one and only one may exist. If a second piece of the same quality exists, then it is occupying a different point in timespace, with the difference generally being the quality of 'different place' in spacetime. (For example, one person thinking 'apple' in spacetime cannot correspond to two apple timeloop bodies in timespace. However, two people thinking 'apple' will have two identical timeloop bodies, besides the quality of both people occupying different space.)

The 'light' of timespace acts the same way as light in spacetime. Pieces are constantly exchanging what we call *qualitons*, or the analogue to photons. Depending on the composition of two pieces and their position in timespace, pieces exchange qualitons for which any number possible can overlap. Although the mechanisms are poorly understood at the moment, qualitons appear to mediate piece behavior, just like photons mediate spacetime objects via the electromagnetic force.

(There are also the strong and weak nuclear forces of spacetime with their own Fermions and Bosons. These forces likewise have analogs in timespace, but that is beyond the scope of this piece.)

At this point it is crucial to note that spacetime is a fundamental object, but it is not the fundamental space. However, every piece in timespace is believed to contain as one of its constituent qualities, an object in spacetime. We do not definitely know if it is possible to have an isolated piece with no object. Many people now believe in *Platonic forms*, which is exactly such expression, where concepts such as 'triangle' or 'circle' exist in pure form without a correlating spacetime object, but that is a different debate.

This distinction is important because it appears that the passage of subjective time in timespace

is directional, and probably for the same reason that spacetime objective time is directional. It seems that pieces in timespace are either falling through timespace with a velocity, or they are still and timespace is flowing around like a headwind. Not that this matters, but it might. As pieces interact with each other, they struggle to stay oriented properly with the wind of time, facing forward with their spacetime objects, and they accumulate and copy pieces as time goes on, becoming larger and larger with more and more experience, or qualiton capture. This is important because it appears that Human individuals are the tallest of these growing mountainous bodies, and all the extra qualitons they emit both deliberately and reflexively appear to be the causal mediators of all non trivial transformation.

As per the actual intelligence essay, the reason this is important is that massive individual timespace bodies appear to gravitate toward one another according to both similarity and difference. The outcome of such a gravitational interaction however, depends on this similarity-difference valence. Qualitative difference physicists at currently working out how to extend the spacetime geometry conception of gravity to subjective physics and the timespace model.

We believe nonetheless, that the reason for any transformation in timespace is due to actual intelligence changing the shape of timespace thus changing the straight-line acceleration of objects by a similar equivalence relation like form general relativity. This may be something as simple as a statement of qualitative equivalence, quality being the analog to mass in spacetime. This is pretty speculative though, so we leave it to rest for most practical concerns.

One important point to remember when thinking about the universal piece computer, is that every piece—or timespace body—is an entire world of its own. These worlds again, do not overlap in timespace, though they are allowed to overlap in spacetime. That is, in our spatial objective reality, pieces can overlap and nest.

This is especially important when considering world piece computers. The amount of overlapping and nesting of world piece computers and all their constituent pieces is quite mind boggling. One of the primary reasons subjective physics has taken off like it has is for its ability to conceptualize worlds in terms of pieces that cannot overlap in timespace. In terms of subjective time, there is very little room for conceptual overlap, again largely because each piece has its own dimension of time. Instead of a mess of worlds all tangled up, we now have a formalism that allows us to treat pieces as if they were part of a puzzle.

Probably the most practical way this serves the universal piece computer harks back to the topic of universal language. Now we can clearly draw a line between overlapping worlds and apply a universal communication protocol to bridge that line between them. This is what the universal piece process does, primarily facilitated by the universal timepiece, managing the connections between all these Human worlds.

This is admittedly super abstract, and painfully hard to follow at first treatment, which is why most people who dive deeper than what we just covered are trained theoretical piece physicists. Qualitative difference physics is the kernel of a world piece computer operating system, while the timespace formalism has more to do with the first principles that explain the actual piece computer's hardwear functionality on the fundamental level. Having a solid physical model to understand the nature of Human subjective reality has turned out to be vastly more lucrative

than the objective physics that ushered in the advent of the internet, thus paving the way to global peace.

One thing is irrefutable. Inventing a better understanding of time has been invaluable for the process of establishing, measuring, and improving our state of inner and global peace. Timespace as a model of subjective reality is essential for keeping reliable piecetime.