

Hypertime

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Introduction

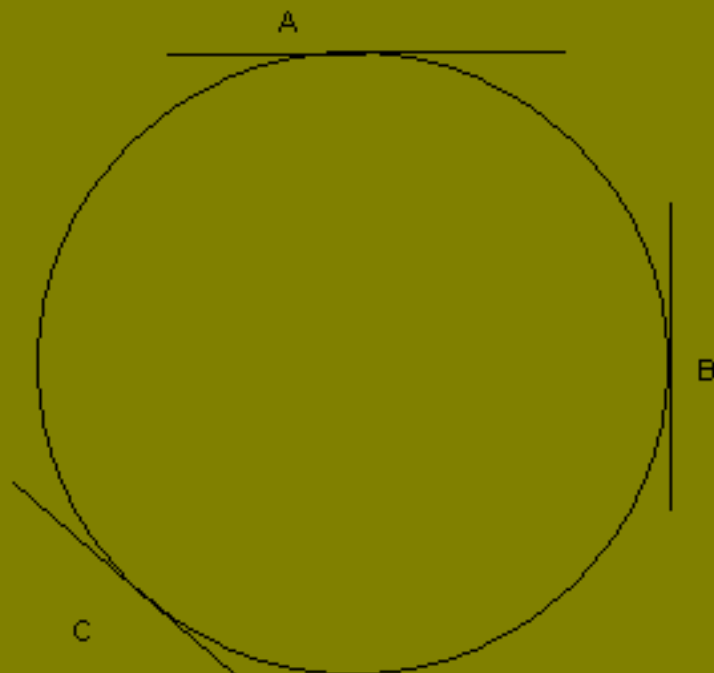
The prior papers in this series have provided a conceptual framework wherein we can now make some coherent and concrete *physical* statements about the nature of our universe, and the place of consciousness within it.

The universe we shall describe is a consistent whole. Within it, we conscious beings have a particular *point of view*, in the same way that an astronomer looking at the sky has a point of view. This is a physical point of view. It means that where you happen to be standing has bearing on what you will see of the goings on around you. The phrase "point of view" here does not mean an "opinion"- a collection of unintegrated and not necessarily true statements made because it would be convenient to the speaker if they were true. It is important to make this point, because the two kinds of "points of view" are often confused by people who believe that reality is something in their heads - dyadics. A dyadic's response to being informed of a physical fact is to announce whether or not he or she *likes* the fact - as if their over-inflated sense of the importance of their own ridiculous "opinions" has any bearing whatsoever on what is and is not the case!

The whole that we are going to describe here, and then describe our physical point of view within, is called *hypertime*. Since it is a description of the whole, this paper subsumes all prior scientific and spiritual understanding, while preserving the internal integrity of the prior work and integrating it all, since it fits a unifying paradigm below it all.

The Structure of Hypertime

Hypertime is a four dimensional sphere. This means exactly what it says. It does not mean that it is an object with four spatial dimensions and an odd additional dimension called time. It is simply, four spatial dimensions. The appearance of three spatial dimensions and an odd additional dimension comes from the way we do perception. This causes us to flatten the four dimensions to three dimensions. But the way we do the flattening happens differently in different places. Consider the following diagram, of a two dimensional relative of hypertime:



The authentic two dimensions - area - of the circle happen to be experienced by the little beings that live in this circle as a series of one dimensional edges that they believe they live on, which is changing in size. Hence they live in a one dimensional world, but they actually have access to both the dimensions of their universe. To understand this point, consider the being living at point A. His perception has flattened his space to the one dimension of width. The being living at B seems to be living in a one dimensional space that is flattened to the one dimension of height. The being living at C lives in a single dimension that is a flattening of a mix of height and width. When these beings visit each other, they change the mix of the authentic dimensions they enjoy, in the single dimension that they are aware of. They are wandering around in a two dimensional space, but do not know it. If their physics attempts to speak of "one dimension of space and another odd dimension of time", they will become confused, because they will then observe weird "Relativistic" effects that they claim they can "think of" as an exchange of space and time, and will also observe phenomena like the Principle of Least Time (or Least Action), which will be wonders apparently disconnected from Relativistic exchanges of space and time.

At the centre of the four dimensional hypersphere is a densely tangled knot of strings - photons - that exploded out of the point nearly at the very centre, so defining the space of the hypersphere as they did so. How that trick is worked will likely take a considerably bigger brain than we have to do it. Indeed, the densely tangled knot is likely the smallest brain that could conceive of such a trick - in this universe at least. Note that the brain is not an infinitely small point. At the centre of the hypersphere there really is a brain, which exists in this universe, which is capable of performing rotations clean out of this universe. It does not hide in singularities where infinities in the calculations make everything impossible to judge. It has real physical existence in this universe, and is in that state when it does it's work of creating (or destroying) the universe. It's a bit like what happens when you boot your personal computer. For a moment, there really is an old 1983 MS-DOS computer sitting there, with a fully formed Linux kernel sitting in it. A moment later all the rules change, but in that first moment Linux really exists in a context that is clearly beneath its dignity.

All of the photons in the knot are directed. They have an outwards pointing vector that causes them to tend to disentangle from one another, undoing the knot in four dimensional space. The consequence of this is that the further one is from the knot, the less tangled are the photons, and the more they are just thrashing around as independent strings no longer even bashing into and repelling each other.

The boundary of the hypersphere is a most uninteresting place. It consists of completely unentangled photons, out as far as one can look. Eventually one has to stop, since continuing will tell you no more. The effective boundary is the "radius" at which the last two photons unentangle. After that, nothing else happens.

Bennett Exchange in Hypertime

In the centre, the photon strings are entangled. As one move radially outwards, the entangling becomes less but the motion of the unentangled strings is more violent. What is remarkable about the initial tangles is that they are so arranged that when they untangle, the information represented by the knots is retained in the direction and speed of the untangled individual photons. Each state has only one possible state following and preceding it.

Explicit Information Representations in Hypertime

Near the centre, the knots are very complicated. Complicated knots are made by tying knots with knots, like plaiting plaited cords. Further from the centre, the knots are (by and large) less complicated. When information is expressed as knots, the knots themselves can be used as building blocks for constructing more complex knots. Far from the centre, where information is represented as directions and speeds, these additive effects cannot occur, since no building of one representation out of another can occur between individual photons. There is always the same amount of information in the universe, but sometimes it is active, whereas sometimes it is in "kit" form, waiting to be reassembled and started to do things.

The general tendency of the knots is to become simpler the further they are from the centre, but this is not an absolute rule. Sometimes the thrashing caused by complicated knots undoing themselves causes knots to form in adjacent photon strings.

Self Referential Information Structures

When knots are made of knots, self-reference occurs internal to the constructed knots. All knots contain information, and knots made of knots contain information about information. This allows two things to occur.

Firstly, stacked information- knots made of knots - can contain more data in fewer photons than linear lists of data. The information can be more compacted.

Secondly, knots made of knots can (indeed, must) contain information about their own internal structure and formation. If I know what a racehorse is, and I know what simple odds are, I can define an each-way bet in terms of what I already know. Moreover, my knowledge after I have done this clearly shows that an each-way bet is defined in terms of simple odds. Therefore I must have understood simple odds *before* I understood each-way bets.

Fractal Recurrence in Hypertime

As the information released by undoing complex knots can cause other knots to spontaneously do themselves up (for a time), the knots that get done up again can either be repetitions of simple knots, or sometimes, the whole re-appearance of centre-wards structures. In these cases, the trajectories of the photons that make up the re-appeared structures must be constrained to allow it to happen. The chances of getting a complex structure a long way from the centre, that is not composed of elements that were authentically together near the centre, gets less and less the more complex the structure is. As one looks from the "edge" to the centre, one sees some simple early structures that are composed of bits of many centre-wards structures, and complex early structures that are authentic orbital reconstructions of single upline structures. This phenomenon of the reemergence of fractal structure is well known, for instance on the periphery of the Mandelbrot set, tiny Mandelbrot sets can be found hidden within the main one, at all scale levels.

Subjective Perception of Duration

Because the amount of information at each radius in hypertime is constant, although sometimes it is explicit and sometimes it is in "kit" form, it is possible to describe a "causality" that goes either way. Within this, self-referential data structures - knots of knots - will always experience a preferred causality, because they can only compare the addition of complexity. They have no information about information they do not have.

The Purpose of Hypertime

The purpose of hypertime would seem to be to exploit the subjective perception of duration to facilitate the central brain's awareness of itself. The brain first moves itself into a space where it has total control of what occurs, since there is nothing in there but itself. It places itself into a configuration such that its decay trajectories will have the properties of a Bennett machine, and then blows itself to bits. Since the causality it has constructed in its own private space is directionally invariant, it might as well be the case that for no apparent reason, a space filled with very little of interest spontaneously forms into a brain. This is perfectly symmetrical. However, the subjective experience of the reforming information structures in the alternative recreative arrow is of becoming more complex, and there is no matching subjective experience of blowing up. Hence the only asymmetry is the votes for becoming more complex - the absolute conviction based on those components own experience - and as far as the continuity of memory of the brain is concerned, it is definitely coming into existence. And since the universe doesn't matter - only the brain that is so smart as to be able to see how to get out - that is what "happens" in this universe. We are every such clever little creatures in the end!

Multifractal Autopoiesis

On the arrow of time that we perceive, we see spontaneous stochastic coolings or self-organisation occurring at cosmological scales, and the scales of living things. Both of these are happening at the same time, and it is reasonable to assume that as time passes, we will see scales of self-organisation intermediate between individual creatures and the entire universe. These might be considered as extended, or aggregate life-forms. The Gaia observation that sees the ecosystem of this planet as a single system that maintains itself far out of chemical equilibrium is such an aggregate life-form, as is the human body if we remember that it is composed of vast numbers of individual cells.

The style of self-organisation that this model describes involves what we see on our arrow of time as stochastic coolings. These are events that we see as a system exchanging energy for a copy of its own future information state. Hence self-organisation of an insight or a species involves the apparently acausal appearance of anachronistic data, which in the wider hypertime perspective we can see as a fractal back echo that is wholly causal on the creative arrow of time.

Punctuated Equilibrium and Magic

Our perceived arrow of time is an effect of the way that self-referential data structures can only know themselves as growing things. In fact, the only source of structure of any kind in this universe is the end state. If a human mind develops the richness of its awareness of the interconnected nature of the universe - not by mouthing hippy nonsense but by studying and coming to understand the facts - it can have the subjective experience of creating itself in such a way that it becomes fore-ordained to be the direct descendent of an upline structure. In fact, it was a descendent of that structure all along, but because of the two arrows of time, there is the bizarre effect that we are fore-ordained to be what we choose to be. Furthermore, if such a developed mind then manipulates itself so as to put itself into a state that can only be the decay product of certain specific future states, those future states will inevitably happen. This is in accord with the experience of those who perform such magic, which for a great many people the world over is a practical established reality. You have to really become that which you want to become, and then the accessories will drop into place. Instead of being someone who wants to own a big airline, you become an airline boss who happens to not own an airline at the time. Then the airline comes together.

A simpler way of doing magic is to solve problems by getting loads of good ingredients together, and waiting for them all to drop into place to produce the living and successful restaurant, rock band or whatever else you want to create.

For the sake of honesty, I should say that I intentionally used both these magical techniques at the outset of the Reciprocity Project, since I already knew that they worked. Beyond this, I shall not discuss magic in what remains a paper on physics. But now we have broken the sky.