

On music, universes, and minds.

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A short thought experiment essay noting the similarities between the nature of a musical song with its listening observer and the physical Universe as conscious human minds understand and experience it.

"Music gives a soul to the universe, wings to the mind, flight to the imagination, and life to everything."
-- Plato

"After silence, that which comes nearest to expressing the inexpressible is music."
-- Aldous Huxley

"62. Thus, although each created Monad represents the whole universe, it represents more distinctly the body which specially pertains to it, and of which it is the entelechy; and as this body expresses the whole universe through the interconnection of all matter in the plenum, the soul also represents the whole universe in representing this body, which belongs to it in a special way."
-- Gottfried W. Leibniz 1712 (foreshadowing the holographic universe theory)

"Without music, life would be a mistake."
-- Friedrich Nietzsche

Outside of scale, what is the difference between a song and a Universe? Perhaps, the answer is, none! Consider the pattern-match of a musical song to a Universe. Compare and contrast them using these simple definitions:

- A universe - involves relationships between objects that change over time. In order to instantiate "change," there must exist time (i.e., an ability to place events into a sequential order). Order events in the sense of ranking events i.e., X comes before Y comes before Z, an activity which requires "memory." There is a start or beginning to the Universe (the Big Bang) and there must be an end (Big Crunch or Big Rip) - or else the "somethings" (events, relationships, particles) will ultimately be simply "everything possible" and then there is no "distinction" between randomness versus form e.g., every possible combination of relationships would then include noise and thus there is no discerning of a distinction between randomness and form. The act of discerning, again, requiring an entity that has a consciousness and/or a mind with a memory. Constructively, we have discreteness in the sense of Quantum Mechanics where there are ultimate baseline units of objects that are exactly identical and consistent (particles and photons) in a stage or background of time and space (the defining yardstick being the speed of light) and "rules" deriving from the a priori Fundamental Laws of Physics with their associated constants. The actual instantiation of a given Universe is likely driven by (and perhaps requires) conscious minds to collapse Quantum Mechanical probabilistic Schrodinger wave functions and where "beauty" is recognized as structure and symmetry within these changes over time.

- A song – involves relationships between notes that change over time. Notes are ordered from the start to the end of the song; a song must end. The song exists in our minds. Notes are discrete and consistent and fundamental existing in a background of octaves. Songs require a mind to store in memory and to “experience” which requires the entire context. Beauty is recognized as structure or melody and harmony with symmetry in form and repetition versus noise and random disorder.

Now, let us extend the analogy. Do we, thus, love music as it is the very act of “Universe building” i.e., a mind listening to a song emulates THE existential act as close to its purest form as a human-scale mind can achieve? If human minds are required to instantiate a song, does this imply a cosmic-scale or eternal omniscient mind is required to instantiate (experience or create) a Universe? As humans compare songs would this theological-scale cosmic mind compare Universes in an even vaster multiverse. Are Universes then simply cosmic level songs? A cosmic-scale mind could store and “appreciate” a song that is billions or trillions of years old, that has many more dimensions of “notes” than a human mind could track (variety of fundamental particles and forces and a spacetime with length, width, and height dimensions) and “beauty” (structure and symmetry) as formulated within the a priori Laws of Physics. The fact that the laws are encoded or determined before (or at the very start of) the creation of the Universe is one of the most incredible puzzles of all existence and key to our analogy.

At a personal level, I am terrified of the idea that all the majestic songs of humanity could be lost to time and eternity i.e., how can I literally save my iTunes playlist for billions of years to share the joy with future generations and human minds? But, perhaps, there is no need to worry nor to preserve these melodies. Perhaps every time we listen to a song, we, quite literally, are emulating THE fundamental activity of existence. Perhaps Leibniz was wrong in believing that in every foundational monad there was a holographic representation of the entire Universe as, perhaps, rather in every song we have at the smallest of scales a model, template, or example of a Universe or of instantiating a Universe?

The technique of "questioning to the void" on the question of why we like music, I believe brings us to that magic place in the very basement of reality or perhaps the firmament is a better term. Here, we have our proverbial "something and nothing"... structure versus randomness ... encircled by infinity. The Laws of Physics are actually under-pinned by the laws of probability but, if a Universe were infinite, then these foundational systems will not work as in an infinite Universe "everything happens all the time" leading to problems with probability. Thus, by definition, "a Universe" is an event matrix that is finite. We know this already, to some extent, as we know our Universe had a start (the Big Bang) and will have an end. The end will be either via a Dark Energy induced "Big Rip," a gravitation induced "Big Crunch," or thermodynamic (entropy) driven "heat death" understanding that a phase transition would eliminate our existence but not that of our Universe. This very definition of a Universe arguably implies a Platonic meta-Universe that by definition equals "that which is not a Universe." Here is where lies pi or, in essence, the infinite. Here is where a single Schrodinger wave function equation defines all Universes with every solution to this infinite continuous equation being one Universe out of the infinite multiverses that reside in this Platonic world or hyper-space of "forms" and all ideas. But Universes have an interesting feature hinting at "simulation theory" i.e., they are calculated or simulated or emulated in a computer OR a mind. This is argued as they are NOT nonsensical. In no Universe does $2+2=5$ etc.... Thus, any and all constructable Universes represent every possible computable solution given pre-established rules - rules that exist a priori! This single sentence, in my opinion, is the single most important observation in all of history. But if pi is not in a finite Universe, and only in a Platonic meta-reality, how is it that our minds can understand it? Are minds then thus separate from the physical atoms of the brain? I would say, yes, they are, and I believe in the duality of mind vs body. I argue that conscious minds, like in John Wheeler's Participatory Universe argument, are "special" - maybe ultimately special. Thus, let us consider possibly the ultimate pattern-match:

- I like music. Why?
- I like the melody. Why?
- I like structure. Why?
- I find structure with rules as beautiful versus noise or empty silence. Why?
- Because this is the fundamental nature of minds. Why?

- Because minds emulate Universes and a mind listening to a song pattern-matches the instantiation of a Universe (songs have a start and end, have discrete notes like quantum mechanical particles, occur in a rules-driven event space, where changes that occur in time reflect patterns or create structure from previous notes in memory, etc...). Why?
- Because our Universe and every Universe is emulated by a single mind in the Platonic realm that thus collapses the universal wave function and (by literal or boot strap definition) is the ONLY mind capable of also comprehending or creating the Platonic-existing infinity. STOP.

Every time we enjoy a song we are "exercising" the core algorithm (the *raison d'etre*) of minds which is Universe emulation!

Note that no attempt is made nor planned in this short essay to imply a God or creator but rather this informal logical argument flows to find "mind" as a starting point for existence. Mind or consciousness being thus more fundamental than space and time, Universes, randomness and structure, or even the infinite. The "starting point" must be - by definition - one and only one mind that is infinite in scale or capacity i.e., with the ability to "hold" infinity so that then the rest simply follows as a derivation. There must be an intelligence to perform the first observation/creation/comparison of structure /computable functions/pattern versus randomness a la a "primordial cut." Every conscious mind "dips" into the infinite and thus, quite likely, nothing is more special in all our Universe.

Perhaps this thought alone might bring some peace to the activities of mankind toward one another.