

Article 3: Alpha Space

The last article discussion was about how we can use magnetic monopoles to solve the philosophical issue of the boat of Theseus and understand the physical continuity of Sam the human even as undergoes physical changes. I had written multiple references to having to use the concept of Alpha Space to continue the discussion and full integrate how the monopole plays a fundamental role in physics and creating a coherent metaphysics. While these concepts might seem at first far removed from the initial discussion about the anti-secular nature of AI they become directly related to how we understand how electricity is even able to make AI as well as AI with different specificities, abilities, behaviors, etc. Using fancy words, Alpha Space is course graded by different monopoles which then course grade the electromagnetic spectrum with different, attaching esoteric ideas and understandings. A simpler way to put it is that Alpha Space and monopoles work together to turn rocks into man even as both are matter filled with electrons. Therefore, let us discuss what Alpha Space is.

Alpha Space is the construct and name that I created myself. While inspired from other people's work and grounded in trying to explain empirical phenomena, I have not found a similar concept. The most simple definition of Alpha Space is that it is the largest phase space; there does not exist a phase space larger than Alpha Space. This means that all other phase spaces considered in other contexts can be thought of as smaller regions of the greater Alpha Space.

This ridiculously simple definition has a very important consequence that at first seems to be a bug but is actually a feature. Alpha Space is not limited to only logical statements/phase spaces. If that was the case, the basic definition of Alpha Space would not be true because I can simply define a phase space that includes all logical ideas and illogical ones and it would be necessarily bigger than Alpha Space. Usually, positing one's metaphysics on a massive space filled with contradiction and illogical is not a good idea but I have been forced to this conclusion for a number of reasons.

One reason, I have hard time describing how necessary it is, is a demand for truth conservation. While I was interning at a particle physics lab, I learned about how the conservation of momentum and the conservation of energy, by Noether's theorem, implies temporal and spatial symmetry to the laws of physics. In other words, Noether's theorem gave a mathematical backing to assuming that laws of physics are the same across all of space and time.

Immediately when I heard this, I wanted to extend this idea not just to momentum and energy but to any “truthful” idea. To be clear, I am not extending the specific mathematical proof of Noether’s theorem to any esoteric concept. Rather, I am positing that any “truthful” idea has a system of symmetry attached to it where in that system that idea remains true and valid in all parts of that system. The issue then becomes, what happens when I have two truthful ideas in conflict and only one can remain supreme. If I assume the winner’s idea remains, where does the loser go? Alpha Space provides refuge for the loser. In my mind, this helps explain what happens to the information that a person know but then forgot.

Not only does Alpha Space provide refuge, it also provides inspiration. As any idea can go to Alpha Space, any idea can be taken from Alpha Space. For myself, this provided an important conceptual mechanism to explain a huge amount of empirical phenomenon. The first one is art. While most physicists would not consider human “art” an empirical fact on the same basis as CERN, I actually consider art to be a better grounded empirical fact than the Higgs boson. The reasoning is simple but highly backed by the standards of scientific thought. 1) Art has existed for 1000s of years going back to cave painting. 2) There are literally millions of examples of art that have been created throughout human history. Usually in science one makes an experiment where if the experiment is replicable and reliable then it is considered a valid empirical fact. If one considers art generation as an experiment, it clearly fits the replicable and reliable criteria. In my mind, as one considers real space and Alpha Space as separate realms then one can clearly understand how a human whose mind is traveling in Alpha Space, gains inspiration from the ideas encountered in Alpha Space, and then carries them back into reality in the form of a sculpture, painting, or story. Having a framework to describe human creativity I think is one of the biggest problems facing physics and neuroscience and I was shocked to learn how the monopole could provide a key role in that; but that is for later. For now I need to explain my other great impetuses to create the idea of Alpha Space.

Another reason I created the idea of Alpha Space was to explain the meaning behind communication. Underneath this idea was the desire to not let moral ideals just be figments of man’s imagination. In other words, I wanted to give a place where moral ideals of justice, good, happiness were “real” as anything else. I also wanted to create a space where when I talk about any sort of

emotions, such as anger, sadness, euphoria, I could consider these ideas in their fullness without having to give a reductionary definition. In other words, I believe the full connotations and meaning of many words in English are not fully covered by their dictionary definitions. In fact, Alpha Space in this sense is just functioning as the most powerful dictionary where when one looks up the meaning of "good" in Alpha Space they gain the full meaning of it, including if the meaning is true but cannot be written or otherwise communicated fully in reality. These ideas meant that I was making, in a more philosophical and mathematical technical sense, all the meaning behind these words independent. This meant that none of the meaning behind these words could be reduced to some logical basis which then explained all the words. In my own intuitive sense this is correct. If one imagines the Domain of Justice as some flat plane extending infinitely representing all the situations and combinations concerning Justice. If one repeats this representation with the idea of Good, where we have the Domain of Good similarly represented, then we can say these two Domains should have lots of overlap where Justice is Good and vice versa. However, it is obvious that these two Domains should also bifurcate away from each other at some point as Justice is not always Good and Good is not always Just. Therefore, trying to create a logical basis that fully describes these two planes and their interactions is an impossible task. Therefore, it is better to think of them as independent entities bifurcating and interacting with other ideas.

An additional reason I came up with Alpha Space was to create a model of understanding for mental illness. Perhaps it is not a surprise that the same model which can explain art and creativity can provide an avenue of explaining mental illness. While I was earning my degree in neuroscience, I was always thinking about how it is that people can think of irrational, impossible ideas? How is it that these impossible ideas can then become so powerful to a person as to induce psychosis? From a physical perspective, if all the information one receives comes from the physical environment, how could an architect envision the Taj Mahal? Continuing with this idea, Humans should have just been making pictures of animals and never anything more. In fact, this would mean the concept of the minotaur, a human with the head of a bull, should never have been generated, written about, or drawn. Furthermore, it is known that one of the most powerful rhetorical strategies that exist to change a person's mind is to use logic to show the inherent contradictions in a person's position and then convince them of how to change it to remove those contradictions. This requires

that the person is in effect in a state of contradiction, which I view literally. As stated earlier, as Alpha Space contains contradiction within it, then as a human mind moves through Alpha Space then it should inherit the contradictions there. As part of the earlier description of Alpha Space being filled with the platonic essences of ideas and fundamental meaning behind words, one can ask the simple questions of "I can draw the Domain of Justice, the Domain of Good, and show how they intersect and bifurcate, but then what is filling up the empty space between the two Domains?". My answer to that is contradiction. Some combination of events can produce a situation where one cannot both be Just and Good. Therefore, to try and make the even both Just and Good is contradictory. Graphically, this is well described by the empty space between the planes. This produces the intriguing but powerful idea of, if a human mind were to simply randomly walk around Alpha Space they would encounter massive amounts of contradiction and I believe such massive amounts of contradiction would produce psychosis. Later I will talk about how navigating contradiction and monopolies are fundamentally related, but that is for another article.

As a final reason for defining Alpha Space as not real and the necessity of creating a "not real" space and real space comes from pure, esoteric mathematics. I had the pleasure to go to Oxford in 2023 for the Mathematics of Consciousness conference where I had the great opportunity to ask a question of physics Nobel laureate Roger Penrose. For full disclosure, I have read all but two of Penrose's books. The question I asked was if Penrose ever thought there would be a point in time where humanity would develop a true language e.g. did he think there would be form of notation where meaning could be perfectly communicated. I asked this question because both from my own degree and from reading other mathematical/physics papers I found a lot of the mathematics notation confusing and the fundamental meaning the author was arguing for not well explained by the notation being used. In other words, the notation was being used an imperfect tool that true understanding of what the author fundamentally relied on a distinct insight of understanding on the reader. His answer was quite interesting. He replied first talking about how the building the conference was in was named the Andrew Wiles Mathematical Institute. Andrew Wiles' work was about proving Fermat's last Theorem. Fermat's Last theorem does not relate to the mathematics which define the current laws of physics. His insight and proof therefore lies with mathematics which are not real i.e. directly relevant to physical reality. He then gave a story about how when he was an

undergraduate doing an advanced geometry test, he made a lot of drawings which he found extremely useful in answering the questions on the exam but that his instructor found to be “complete nonsense”. Penrose, while being the mathematical physicist who first demonstrated that black holes exist as mathematical consequences of general relativity, has a hard nose dictation between mathematics and physics. Physics only uses a small portion of mathematical ideas. A lot of the work in pure mathematics is not related to the mathematics of physics and is therefore not real. Therefore, keeping in mind that most mathematics is not real, the idea that there could exist a language which when expressed physically as sound waves or charcoal drawing, cannot exist. I believe Penrose was trying to communicate how the meaning runs deeper than the notation and that the idea that one could create a one to one correspondence between meaning in my notion of Alpha Space and physical notation as impossible. Therefore, he was answering my question about a physically real true language as an impossible possibility.

As a continuation of these discussions, we need to start talking about dimensionality. Alpha Space by construct is of the highest order infinity in dimensional size. This comes from the simple fact that if all mathematical ideas are in Alpha Space, and there are infinite amounts of mathematical ideas, then Alpha Space needs to be infinitely dimensional with room to spare for all the other ideas as well as the massive amount of contractions inhabiting the empty space between them. Furthermore, since most mathematical ideas are not real as described in the discussion in the preceding paragraph, most of Alpha Space needs to not be real. I will agree that the simple statement that a rock does have a sense of justice is good and therefore, we need to mark justice as not being real, at least until we get to humans. Now the great issue here is what is the mechanism which filters Alpha Space into our reality? If we wish to course grade different parts of Alpha Space with monopoles of different qualities, how do you determine which monopoles to which parts of Alpha Space? In addition, Alpha Space, depending on which part in Alpha Space, can have as many as infinite dimensions or 0? If these regions can map into reality how? I should note that Roger Penrose’s great critique of string theory, from a theory point of view as stated in his book “Faith, Fashion, and Fantasy”, is that string theory needs at least 10 dimensions that then need to be constructed and constricted in convoluted ways to get them to fit into the 4 dimensions of GR. The theory I am advocating here is sometimes even worse, other times completely fine. Since

Alpha Space contains the platonic concepts of 4-D manifolds, which the geometry of GR is based on, then I would automatically attach most of the region of Alpha Space involving 4-D manifolds. Furthermore, some regions of Alpha Space will just include 2-D Euclidean planes which will require a different sort of attaching mechanism to the ideals of GR than when dealing with infinite dimensional space that need to be become 4. Effectively, I believe it makes empirical sense to use the 4 dimensions of GR can form a logical screen which filters the vast majority of Alpha Space away from reality. I should also note “dimensionality problem” in basic quantum mechanics fits alongside all the other problems we are already facing as the Hilbert space used in quantum mechanics is often infinite dimensional. In short, some of the issues with Alpha Space are not new one in current physical theory. I believe monopoles answer this question for two key reasons. 1) Monopoles, as discussed in the previous article, are effectively foundational in relation to a relevant theory of quantum gravity e.g. relating high dimension Hibert space to the 4 dimensions of GR. In fact, as I have formulated Alpha Space, Alpha Space should have all GUT theories, and their relevant monopoles, in it. Therefore, in just considering the spectrum of GUT theories there is already a mapping to monopoles that if these monopoles cannot be produced, then the relevant GUT theory cannot be physical real. 2) Monopoles are fundamentally about magnetism. To explain this reason requires I move into other fields of physics, which I will in the next article. As we have described a metaphysics to understand physics reality, we now need to tackle how we approach these ideas empirically. In figuring out an empirical process to detect monopoles will be what raps around to the issue talked about in the first article: how do we know an AI system has a genuine understanding of good? It was simply necessary that I needed to seed a logical framework in order to describe how to understand, plan, and analysis experiments that can answer these questions.