Motivational Piece: Trifecta.

Subpiece 1: Time Machine For Peace overview.

No, this is not a book about time machines or time travel (unless you want to consider passing into the future a form of time travel, but let's call that *trivial time travel*). No, this is not a book advocating for utopia, either. This is a book written in the belief that 'world peace' (from now on, 'global peace') will be an inconceivably complex and slippery state to achieve and maintain, but inevitable by nature of the inherent profitability of peace.

This book offers a unique approach to taking global peace seriously.

Time Machine For Peace is best seen as a broad spectrum invention program—an umbrella project. In the most general terms, the time machine for peace invention program serves as a *vehicle* whose sole purpose is to transport us in a safe and speedy manner toward our final destination: the advent of global peace and beyond. A large reason this invention program is called a *time machine* is because the ultimate problem we face as a species is that time, its conjugate variable[1] energy, and people (access to), are exceedingly scarce. To be a vehicle that transports us to a more peaceful and prosperous future will demand systematic management of the limited time, energy, and conflicting interests of said vehicle's passengers, *us.*

This book presents an exploration of what a time machine for peace invention program might look like. However, the primary emphasis will be on the central project to invent *the universal piece computer*. The ultimate purpose in writing this book is to propose, argue for, and present a call to action for turning what has been an individual effort for many years into a social invention program devoted to accelerating the advent of global peace.

In these first motivational pieces we take some time to talk about motivating factors, how world peace may be inevitable if we don't accidentally kill ourselves off, then we explore a means of experimentally supporting the inevitability of peace. Discussing this experimental means will involve a treatment on *economics* and *consilience*[2] (the unification of knowledge), and argue that prerequisite to answering the question of *how do we accomplish global peace*, we must create versions of mathematics, science, art, engineering, etc, that are all devoted to framing and generating such a solution. We will explore this proposition, that if we want to achieve global peace we must take everything we already do, and create new versions that are explicitly contextualized *in terms* of peace. This segues into the proposed starting point: in order to coordinate such a massive undertaking (solving peace) we must invent a special purpose general computer devoted to treating peace as a process.

This aforementioned computer is called in generic terms, a *world piece computer*. We will talk all about *peace* and *pieces*, which will be confusing at first. At this point we will get into defining what a world piece computer is, what it does, characteristics and properties, and how we might network them together to form a singular supercomputer called—again in generic terms—*the universal piece computer*, or a supercomputer devoted to computing a solution to the global

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[1] conjugate variable: https://en.wikipedia.org/wiki/Conjugate_variables
[2] consilience: https://en.wikipedia.org/wiki/Consilience

peace problem. These are the special purpose computers devoted to treating peace as a process. The argument is that we need a network of world piece computers to facilitate the creation of new versions of human institutions, all contextualized in terms of peace. After the universal piece computer is erect, we can then use its computational power to initiate other invention projects under the umbrella of the time machine for peace program.

Finally we will close by addressing calls to action. How can you jump in and get involved? How can you help invent the world piece computer to form the universal piece computer? How will collaboration even look?

Subpiece 2: Time, energy, people.

The purpose of this sub-piece is to help set the stage, in a grand sense.

There exist two primary forms of physical simplicity. One type, it defines our past—the other, our future. These terms however are strictly relative to the present. As it turns out, we happen to live in this awkward space somewhere in between that we call the *moment*.

Our notion of this physical simplicity in the past originated at a moment we refer to as the ***big bang***[3]. The big bang is a type of singularity. At this singularity, all the *stuff* we know and love was all bunched into a point, undifferentiated. Beyond this point—beyond the beginning of linear time—our modern physics breaks down entirely and has nothing to say. Beyond this point we can only speculate.

Our notion of this physical simplicity in the future is more of an *extremely well informed* prediction for a similar point in linear time. (This means that instead of a preponderance of evidence that something *happened*, we have a preponderance of evidence that something *will happen*.) At this singular point in the future however, all stuff isn't perfectly packed into a point. Instead, all stuff is perfectly spread out, a singular smear. This moment marks the end of linear time, and we refer to this moment as the ***heat death of the universe***[4]. Beyond this point—the end of linear time—our physics has nothing left to say. (Physicists chose this name because at this moment our physics says it will be impossible for anything new and interesting to happen, so everything is dead.)

When I say *linear time* in this sub-piece, I mean something very specific. I am referring to the fourth dimension of Einstein's general relativity[5], which is so far accepted as the best proven description of the physical reality at a cosmological scale. (I really should call it *curvilinear time* to be more accurate, but I really don't feel like explaining curvilinearity at the moment. You can look it up if so inclined, starting at *curvilinear coordinates*[6], and *non Euclidean geometry*[7].) This fourth dimension of time is *effectively equivalent* to any one of the three spatial dimensions we are all familiar with, being up-down, left-right, forward-backward. This fourth dimension is

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[3] big bang: https://en.wikipedia.org/wiki/Big_Bang
[4] heat death: https://en.wikipedia.org/wiki/Heat_death_of_the_universe
[5] general relativity: https://en.wikipedia.org/wiki/General_relativity
[6] curvilinear coordinates: https://en.wikipedia.org/wiki/Curvilinear_coordinates
[7] non Euclidean geometry: https://en.wikipedia.org/wiki/Non-Euclidean_geometry

exactly what you generally think of when you think *time passes*. Time is a dimension of spacetime like every other of the three spatial dimensions.

The reason I say it is *effectively* equivalent to space is that time in general relativity (and the original classical physics' sense) differs qualitatively from regular space in one massive way: time has the quality of directionality, something we like to call the **arrow of time**[8]. The name *arrow of time* should evoke exactly what it sounds like, that time as we know it is *uni-directional*. I use uni-directional to mean that time is irreversible. Time is a *privileged* dimension of the *spacetime manifold* [9]we live in.

(Now, for you physicist firing back with your nigh impossible edge case possibilities, may I remind you, this treatment refers to what we have a preponderance of evidence for. Just because reversibility is theoretically possible with some incomprehensibly small likelihood does not mean reversibility should be declared possible for the sake of this conversation.)

Time is irreversible, and the catch? We have zero agreed-on clue as to *why this is*. (This is drawn from physicist Sean Carrol's treatments of time.) The reason for the *arrow of time* is in this text's opinion one of the two greatest mysteries of modern Humans' understanding of physical reality (the other mystery being to explain *why subjective experience feels the way it feels*, or the **hard problem of consciousness**[10] *as dubbed by philosopher David Chalmers*).

So what we do know, is we know that stuff in the past is less spread out than stuff in the future. The big bang is a moment where everything is condensed into a point, and the heat death of the universe is a moment where everything is spread out into a smear. When you pop a balloon, the helium molecules immediately spread out in a way that cannot be reversed thus, one cannot un-pop a balloon. *Time = start* in that example is the moment the balloon is popped, and *time = future* is when those balloon molecules keep spreading out more and more. Even the rubber of the balloon will disintegrate as time passes, and the constituent molecules will likewise spread out as time goes on.

As it turns out, what I have described above about the arrow of time is formally expressed by what we call in physics the **second law of thermodynamics**[11]. The second law of thermodynamics is a mathematical expression of the arrow of time, being that the **entropy**[12] of the universe increases as time goes on. (Entropy is basically a concept from physics that lets us measure how spread out stuff is. Low entropy means stuff is more condensed, and high entropy means stuff is more spread out. Your bedroom when its clean is in a state of low entropy relative to when your bedroom is a total mess, which is a state of higher entropy.) I introduce the terms *entropy* and *thermodynamics* mainly to make note for you that the second law of thermodynamics is perhaps the best-verified law of modern physics to date. This is why we call it a law, and the extent to which we have experimentally verified the law determines our confidence, in this case being unreasonably high.

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[8] arrow of time: https://en.wikipedia.org/wiki/Arrow_of_time
[9] spacetime manifold: **https://en.wikipedia.org/wiki/Spacetime_topology**
[10] hard problem of consiousness: https://en.wikipedia.org/wiki/Hard_problem_of_consciousness
[11] second law of thermodynamics: https://en.wikipedia.org/wiki/Second_law_of_thermodynamics
[12] entropy: https://en.wikipedia.org/wiki/Entropy

This paragraphs above are to set the stage for the point: to restate, we Humans exist in a place in between the big band and the heat death of the universe. Now we introduce a paradox:

Despite the unavoidable tendency for stuff to spread out (and die) as time goes on, we look at life forms like ourselves and those that surround us and we realize that they all temporarily *violate* the second law of thermodynamics. If we look at Humanity as a whole—as a species— we appear to be growing into a larger, singular and more complex whole. Within the scope of our existence as a life form, something keeps increasing within the *Human* universe, and this is not entropy.

This piece argues that **complexity**[13] is the essence of this ever increasing quantity. As long as we have the resources at our disposal (and as long as we don't decimate our edifice with nuclear holocaust[14], as long as we survive global warming, etc), we will persist to violate the second law of thermodynamics—that stuff spreads out and dies—and in violation, continuously increase in complexity. The more our society, technology, culture, institutions, etc, complexifies, the more we notice that the rate seems to have no apparent upper bound. (Though it could very well be that the rate is a function of population size and interconnectivity, in a combinatorial sense.)

Along these lines, it also seems that complexity is related to consciousness. Consciousness seems to emerge as a product of living organisms complexifying enough to develop **brain**. As we Humanity continue to complexify, we are beginning to notice the emergence of higher levels of collective awareness. We look at our global information exchange networks, and *people themselves* take on a neuronal quality. On this same note, but much much darker, the more we complexify and the more aware we become, the more problems that we seem to face and more intense they are. This begs a question:

Why do problems exist?

The deepest response to this question (while still remaining grounded in the world of scientific reason) is that **people exist**. (To be more accurate, living organisms with brains exist.) Take a closer look at this statement in the context of above. Clearly the motion, formation, destruction of celestial bodies on the cosmic scale is not a problem. This is just the natural evolution of stuff. Planets devoid of life do not have brains present. We can probably safely argue that planets don't have problems.

One thing we know for certain about brains is that they give the owners the ability to exercise **free won't**[15], that is, the ability to exercise restraint, inhibition, the extent of which depending on the complexity of the brain. (Free won't is the appropriate phrase simply because if all a conscious organism does is what it wants, then this is no different than reflex, instinct, just like the celestial bodies—besides inertia—have no ability to restrain its tendency to follow gravity. Further, it is generally agreed that consciousness is something that free agents possess.) For different organisms with less developed brains (well, Humans too), free won't is generally

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[13] complexity: https://en.wikipedia.org/wiki/Complexity
[14] nuclear holocaust: https://en.wikipedia.org/wiki/Nuclear_holocaust
[15] free won't: https://www.psychologytoday.com/us/blog/dont-delay/201106/free-wont-it-may-be-all-we-have-or-need

mediated by fear and desire. Ultimately this harks back to the evolutionary principle that organisms with brains that make the best moves or decisions are the organisms that survive well enough procreate. (Naturally though, there are pathological cases of this.)

There are a lot a big assumptions and statements packed into the last two paragraphs. For our purposes it doesn't really matter how valid they are. This sub-piece is to tell one possible version of a story.

Point is, if people didn't exist, if brains didn't exist, if higher consciousness didn't exist, then *problems as Humans understand the word would not exist.*

People are the problem. People have the brains. Technology isn't the problem, because it doesn't have brains. Resource scarcity isn't the problem, because resources are not free agents with brain. You will be hard pressed to identify a Human problem that does not ultimately trace back to decisions made by Human brains. In fact, I am arguing that this is impossible.

So we set the stage for a discussion about resource scarcity. If we didn't exist, we wouldn't have problems. But self-extinction is not an option. (It might be for the chronically depressed, Nihilistic, or even a few of the unreasonably wealthy elite, but not the rest of us.)

Beyond eliminating Humans, it's pretty easy to argue that time is the most scarce of the resource trifecta: people, time, and energy.

For example, all the other resource scarcities exist because the wheels of capitalism place profit and stuff on a pedestal. In particular, we have a marketplace—an exchange—where we trade our scarce *time* for *money*, which we use to survive; we have a ruling class of wealthy elite incentivized by profit to keep things as they are; we have a people who at the most can buy stuff with their money, often without the time to use; we have a people who demand stuff at lower and lower prices, because like time, money becomes scarce, too.

Aside: *you and I don't have a time machine, so we have no choice about capitalism becoming as it is. We have choice moving forward, but we have to assume that something about the emergent nature of capitalism provided something we need, say, like the development of a technological foundation that provides the electricity, medicine, transportation, agriculture, information exchange network, etc, that we demand of society. If I were to suggest that I could undo capitalism but we had to give up electricity, medicine, transportation, agriculture, networking technology, safety technology, etc, this simply would not be entertained by nearly all of us. If you suggest,* 'go ahead, I'll just live off the land', *you are failing to realize that the bare land alone is no longer capable of sustaining our current world population, and you would be sentencing—probably the majority—of fellow Humans to an extremely unpleasant demise. Don't be evil.*

Ok, so say we focus only on what we can do in the future to peacefully introduce a new form of economy, one more sustainable and Humane—say we stop obsessing over the past which we cannot change. So let's evolve our ways.

The problem is scarcity of time, not our resolve; we have the resolve we need. Time scarcity boils down into three aspects: absolute, people, and energy.

Working backward, say we all find the time to evolve our ways, we quickly find that the big problem is coordinating energy, or different kinds of time. When I have the time, you have the time, and we are together, one or both of us might not have any energy. I may have the energy to work on our evolution with creativity and vigor, but you may be too tired from your long day at work and the issues at home you have been trying to resolve. In this case, I need you for the project we are working on, but you don't have the energy to help like you need. You are experiencing **energy scarcity**. Or, perhaps we both have the raw energy, but our energies are of different type. I may have darker angry aggressive energy, while you have a lighter creative energy. We have plenty of energy, but these energies may be incompatible so we likely will likely not get much done.

From the other direction, when we have compatible energy, we may be inaccessible to one another. I may be feeling creative and I may need your input in the moment because you are feeling creative lately, but you are asleep and unreachable. I may find that this case of **people scarcity** impedes my ability to get anything done. Or, on a deeper plane, I may need to draw from the wisdom of somebody in my family who has passed away. Such person is permanently scarce, and I may be limited by their ability to have left behind record of their legacy, beliefs, knowledge, wisdom. Less deep, I may need the expertise of somebody that I do not know, or do not know even exists. I am limited by the scarcity of somebody I know not that I need.

Both these scarcities are not limited to matching types, rather they are limited in the opposite sense from matching. I may be feeling light and creative, but I actually need some destructive energy to whittle down my creative work. If all I get is light and creative, then I never get the chance to really refine my work. Likewise with people, I may think I need somebody scarce to get things done, but really I would be better off if that scarce person were *not* present.

Energy scarcity and *people scarcity* relate to time in that eliminating these scarcities depends on our ability to coordinate the different kinds of time that these scarcity types represent. If we think of defining our time in terms of separate dimensions, each representing the energies and people that define moments, then the problem to solve is to figure out the best way to match these different times with each other. This means coordinating people among those four dimensions of general relativity—time and three dimensional space (spacetime).

Now say hypothetically we find a way to perfectly coordinate our scarce energies and people. Even then we still have the most important scarcity, that being **absolute time scarcity**. Even when everything is just right, we just don't have enough time! This is because there is only so much time in a day, and because we are incentivized to sell our time in the labor market, usually for labor that has nothing to do with our resolve to evolve our social/economic/political institutions and improve our Human Condition. To put this obviously, we never have enough time when we need it. (You might have the inclination to point out that three dimensional space is an equally scarce resource as time. This is not so, mainly due to the fact we have the technological ability to coordinate time among people who are geographically distributed. Also, besides capacity, sharing a single space is limited by how much time we have to take turns.)

Without the time, we have not the ability to effectively and efficiently coordinate ways to educate, innovate, and overcome the scarcities of other—more mundane—resources such as fossil fuels, minerals, water, money, etc. If we insist that self-extinction is not an option, then we

must accept the fact that all of our problems revolve around time. **Time is the problem.**

Time.

What would a practical, general solution to this fact look like (as constrained above)? I argue it would look like this:

In a perfect world (but grounded in reality), we would find a technological and social system capable of optimizing the timing and unification of our different energies and people. We would discover that such a system was made possible by creating a special purpose language, physics, and mathematics devoted to recognizing time as multidimensional, dimensions including energy types and people. We would find that in general we would think explicitly in terms of time, energy, and people scarcity.

Appealing again to the *Sapir-Whorf hypothesis* and *linguistic relativity*[16]*,* such a time management system would work primarily because the language we use revolves around time, and this would change the way we think (and likely even rewire our individuals brains, appealing to neuroplasticity and the strong form of the Sapir-Whorf hypothesis). Further, on a collective level, a physics and mathematics revolving around time would change the way we see technology and innovation as a species. It would shape the inventions we create to meet our problems in a different way.

But time is the enemy. We would not really want to frame everything we do in terms of the thing that causes our problems, because this would be similar to living in fear. Instead we would be inclined to frame every thing we do in terms of our goal for solving our problems, for solving time. That goal, simply, is a steady state of peace. To solve a Human problem is to make peace with a situation. We would find that by framing everything we do in the more reasonable form— peace as a *process*, not a result—our language would *naturally focus on time as a product of this*, but only in the context of our positive goal: a steady-state of peace process.

This book is about what such a system or machine might look like. Due to the immensity of such a creative endeavor, it would necessarily involve some form of a computer, a tool to help us manage the massive creative effort, all the cycles, energies, people. There will be a multitude of pieces involved, worlds too. Speaking descriptively, this effort would involve *world piece computers*, in a way that forms a network. We could define the overall system as *the universal piece computer*, due to the fact that all worlds are different and the network's glue would be something universally common. This glue I argue, is to treat peace as a computational process. We could label this computational peace process as ***the universal piece***.

If time is the root of all our problems, and our problems distress us (as they should), then peace is the common concept that we can all relate to wanting, be you peacelike or warlike (as war is generally the destructive pursuit of peace). Peace as a process is fitting, because process implies change or movement, which is the basis of time.

It would serve us to name the time management system outlined above. This is the ***time machine for peace***, a system or machine (social, technological, economic, political, ...) that

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[16] linguistic relativity: https://en.wikipedia.org/wiki/Linguistic_relativity

deliberately, methodically—effectively—empowers us to get to the best future we can imagine, and in a practical, realistic manner. The first component of the time machine for peace is ***general piece computer***, applied to individual worlds as ***world piece computers*** and applied to the sum of our worlds as a whole, as ***the universal piece computer***.

Let's invent the piece computer. And ideally, let's make it good time.

Motivational Piece: Uncertain inevitability.

Subpiece 1: Peace is inevitable.

Within this piece, we again refer to the triplet of time, energy, and people as the *trifecta*.

Anecdotally, peace is the most valuable thing. Peace makes it possible for me to make the most of my Trifecta, for the purpose of creating new life with others while making life more awesome for everybody involved. War (effectively the absence of peace) diverts precious time and energy toward destroying life with others, and generally making life much less awesome. (In pathological cases, destruction and annihilation is a pleasurable form of peace-seeking, but let's leave that aside for now.)

So although the Trifecta are the scarcest resources thus valuable in their own rite, they mean nothing if they are not utilized. If you spend all your time and energy trying to avoid being destroyed in a war, you don't get to use any of that resource to enjoy life, build relationships, create.

At first glance, 'peace is inevitable' is a silly statement. What would compel somebody to say such a thing? It sure doesn't look like peace is inevitable, in fact, it often seems impossible to attain.

Here's another take on the value of peace. In times of war, people will go so far as to kill for peace. The idea of going to war is to realize an existential entitlement that conflicts with somebody else. Peace is so valuable that people will give up everything, even their lives in times of war to regain peace. People may even take to the offensive to realize some greater form of peace in their minds by provoking violent conflict. In war, people will sacrifice their Trifecta, for the chance to attain the version of peace they feel just and entitled to. In other words, war is the ultimate cost of peace. Quantifying, we can safely say that peace is at least as valuable as all the resource expended during times of war. Given that it is easier to destroy than it is to create, this is a lot of value. War carries an absurdly high opportunity cost.

Circling back to the Trifecta, peace is the systematic and meaningful liberation of these resources. War is to sacrifice these things. Peace liberates the immense value of the Trifecta. War destroys the value. 'Peace is inevitable' then, just means that the greed of Human Nature will prevail. We crave more and more (and better) time and energy, and we will stop at nothing to get it. The Trifecta is so valuable that these resources are hoarded by millionaires and billionaires around the world. Money becomes an ancillary concern once the time, energy and expertise of people are harnessed properly. The reason millionaires and billionaires are so filthy rich is that they know the value of the Trifecta, and they know how to harness it in terms of profiteering greed. But 'peace is inevitable' still needs some more justification. Just because peace is valuable and Humans are greedy doesn't mean peace is inevitable.

Napoleon apparently said, 'it is not enough to just succeed; one must also profit from their success'. So it is probably not enough to just achieve peace, which is why people usually pair 'peace' with 'prosperity' where peace sets the stage for prosperity. Besides for maybe war mongers, everybody prospers more in times of peace. Prosperity is the profit that makes peace

worth having. Millionaires and billionaires obviously know exactly how profitable the trifecta is, though generally at the expense of the people they harness.

So put simply, 'peace is inevitable' is to say that peace is profitable. But I *don't* mean profitable in the strict monetary sense. Rather, I mean profitable in terms of whatever currency one values most. For many people, this currency may be time itself. During global peace time, economy is stable and growing. Locally, people have higher quality of life and more affluence. Especially in our capitalistic world, if peace is more profitable than war, then peace is simply inevitable.

This treatment so far has been more from the global and local perspective of peoples or society being at war or peace. Back to the anecdote, this all applies equally well to the individual perspective. That is, I profit more from peace than I do from war, be it interpersonal or internal. (And again, the profit is derived from the prosperity I can generate with my free time, energy, and people that would otherwise be lost to war.)

If one is at war within, or at war with another person, they become so fixated on how to end the war that all their time and energy goes toward waging war instead of living in peace. The more intense the inner or interpersonal war, the greater the lengths—the more time and energy one will spend to attain peace. In the pathological cases, the war is so consuming and destructive that people resort to extreme and irreversible measures to find peace. In the worst cases, peace is not perceived as possible due to the intensity of war, so efforts are made to end the war at all costs for relief. This is where killing becomes an issue.

If somebody dies because of war, this is the ultimate loss of value. Time and energy cease to matter for the deceased. Any time and energy that person had available in the future is revoked, no more.

The people in charge of things are smart though. There are pathological cases where somebody in charge wages war for profit, but in most part the people in charge understand that piecetime makes people more money etc, and piecetime enhances people's quality of life. The incentive of profit is clearly there, thus for now at least, peace is inevitable.

Regarding the military industrial complex, there is the Latin saying, "*si vis pacum, para bellum*", which means, "if you want peace, prepare for war." Peace advocates are generally quick to denounce the wisdom of this tidbit as 'no longer applicable', but I do not believe this the case. Although the military industrial complex will need to pivot and adopt new business models, there will always be a need for military preparation (with the exception of nuclear arms, which are just stupid). The harsh fact is that no matter how peaceful we become, there will always be bad guys (and gals) who wish to conquer and harm for the sake of it. Until the universal piece computer is fully functioning and integrated into society, we must assume that there are people capable and willing to go out of their way to make war and do harm on innocents.

To really hammer at it, consider the course of civilization. Although the *Global Peace Index* has been eroding in the past 10-20 years, overall we live in one of the most peaceful eras known to Humanity. As we have less war and fewer tyrannical dictators in charge, our global economy has surged with growth and technological innovation. The rising tide of peace floats all boats (though the unjust way it does so is a different conversation, albeit extremely important to the topic of peace). There is still extreme disparity between affluence and poverty, but it is safe to

say that everybody benefits to some extent from the booming global economy. (Again, there are plenty of pathological cases in obvious disagreement with the above.)

So I end this section with **The Economic Peace Thesis**:

Peace is more profitable.

Subpiece 2: We can't wait.

The inevitability of peace only makes sense by making a little caveat: global peace may be inevitable, but only if we don't go extinct first. This seems like a pretty obvious and trivial statement but it bears inspection. We cannot just sit back and expect global peace to happen.

From one angle, our extinction very well may be imminent, as we grapple with the consequences of global warming and impending peak population among other things. Likewise, as tensions mount in more and different ways on the global stage, the possibility of world nuclear war or a third world war is real. From another angle, without introducing any new knowledge and insight into the equation of how we understand reality, extinction may be physically inevitable in the long run. This could be in the form of a universal heat death.

In any case, for us to be at peace with the looming threat of extinction, we must be able to honestly tell ourselves that we are doing everything we can to ensure our survival. Unfortunately, backing up our species on Mars doesn't mean much if we can't find the will to unify and deliberately situate ourselves with solidarity to face our existential problems on Earth.

Stated without proof or justification, it very well may be that we cannot solve our deepest existential problems as a species if we do not learn how to prioritize peace on a global scale. When the stakes are survival itself, it makes conservative sense to *assume* we need to put global peace first. If we can create a meaningful form of global peace, we stand to liberate that much more Human time and energy for the purpose of studying and solving our existential problems. If it turns out we do *not* need to prioritize peace, yet we attain it anyway, then the liberated time and energy will make it that much sooner that we solve problems like global warming and peak population.

Assuming we *do* need global peace to overcome our existential problems, given the progression of global warming we will need to attain some semblance of global peace in the next 10-20 years. If we can leverage the powers of exponential growth and explosive percolation within networks (more on that later) this may indeed be possible.

People are constantly talking about what will be the death of us. Many people believe this will be global warming, many others believe this will be the erosion of our traditions, our institutions, our values, etc. In every case the scenario is the same: we have a ton of different people all yelling at once about what they think the most important death-of-us problem is to face. If we are to ever have hope for thinking straight about these issues, we will first need to stop shouting so much. The circular catch is that the only thing that will make the shouting stop is the calmness of peace, but to have peace and calm people need to stop shouting. It seems like most of the shouting is born from fear and anger at injustice or futility.

It seems this type of fear and anger is often a reaction to the feeling that we aren't taking this or that death-of-us problem seriously enough. What we need for us to all stop shouting at once, is the common knowledge that no matter what death-of-us problem you get riled up about, we as Humans have a single global peace system in place that is designed to ensure we are methodically and deliberately taking your death-to-us problems seriously. Similar to how the presence of a police and fire department make it easy to live home-lives carefree of scary stuff, an effective global peace system would likely have a similar calming and soothing effect. Certainly there are people who will never stop shouting, but for those people such a peace system would validate and record the content of the shouting, then build some sort of figurative 'noise box' to contain the din.

A vagabond once suggested that global peace would be more aptly called *The Great Hush*. We can't work together as a species if we cannot find a way to hear ourselves over the din of Humanity. If one is faced with a crisis or a existential threat, the obvious advice is to remain calm, cool, and collected, think, and avoid hysteric panic at all costs. If we want global peace, we need to learn how to shut up. If we can't shut up, we need to ensure that the people capable of impact have channels in place that facilitate communication between them, despite the noise.

So the prudent course: Healthy pessimism dictates we assume that global peace is a prerequisite to solving our hardest problems. Then, healthy optimism dictates we assume global peace is an inevitability. Finally, healthy realism dictates we assume the worst and design for the best. We cannot sit back and expect global peace to happen, so we must instill some urgency and make it happen. Put plainly, don't wait. Global peace needs to be explicitly prioritized, and now.

Motivational Piece: The grand unification experiment.

Subpiece 1: The grandest experiment.

Whether or not we like it, capitalism is our economic way of doing things. Regardless your take on the merits of capitalism, we can all agree that the system has some very nasty outcomes and that we can count on a better economic system emerging in the future, probably backwards compatible with capitalism. Now, because we cannot visit the past and change any of it, to make peace with capitalism is first to stop quibbling over whether it is good or bad. Then, we must see the past for what it was.

We have experienced an absurd rate of technological growth in the past 250 years, the past 30 years in particular. The result is a world full of technology that (in principle) improves our quality of life, and a world full of communications infrastructure that completely eliminates geographic separation from the equation. If we can't undo capitalism, we can at least say that we needed it to get *this far*. The economic incentives as they were drove technological innovation like it did, so here we are take it, or leave it by giving up your modern medicine and life-safety technology.

But this does not mean we need to be okay with capitalism now. We have all the infrastructure and the physical and social technology we need to level up our economic systems, so what to do? According to The *Economic Peace Thesis*, peace is more profitable because it liberates the *trifecta* (time, energy, people) for doing useful and creative work. If we all profit more from peace, then it makes sense to seed an economic system around peace and the Trifecta. What would this look like?

For one, 'profit' in such a system will need to be generalized (and I emphatically do not mean profit in strictly the money sense). This means we should not measure profit strictly in terms of modern money. We will need to diversify what we mean when we talk about money, we will need to post-modernize money, but we still need this post-modernized money to be measurable. If we attempt to valuate somebody's Trifecta, we may need to represent their unique value in terms of a unique value token, and in a way that can be accounted for. I may represent my Trifecta in terms of a new value token called "Blair-bucks", useful for tracking all the little IOUs that are too hard to resolve with regular dollars and cents.

The reasoning goes like this: if everybody—communities included—begin circulating their own value tokens in addition to dollars and cents, we will have a higher volume of circulating currencies (in the post-modern sense) thus we will have more opportunity to capture peace profits in liquid form. In the other direction, more *types* of currency will give the economy's cashflow much higher resolution because in principle there will be more ledgers for bookkeeping value exchange that complement the exchange of dollars and cents, thus more data to aid in understanding market movement. If the profitability of peace means we by implication have a system backwards compatible with capitalism, a system with more money, a system with more spending opportunities, a system with more earning opportunities, a system with more data streams and throughput, then this marks a worthy center to aspire arranging the ***grandest experiment***.

Everything revolves around money. To quote J. Cole, "stack it up. [money] can't take it when you die, but you can't live without it." If global peace is not economically incentivized, it will never happen. Reflecting on Human Nature, this should be self evident to you.

So the experiment. Back to The Economic Peace Thesis: what we really need to do is perform an experiment to see if peace really is more profitable. This will entail a testing a lot (almost everything we do), hence this will probably be the grandest experiment to date.

First though, let's veer a little to examine the *global peace problem* more closely. Without getting into detailed nuance (more on that later), solving global peace will be unprecedented in scope, complexity, difficulty, and more. For a context reminder, global peace depends on the individual's in all the Human worlds be in some state of inner peace. Every Human has their own world they tend to, and if a Human is at war within, or with others, then that world does not have peace. Every community is a world in itself. Every family is a world in itself. So, this is a lot of data and variables to consider.

In mathematics and physics, solving a problem is much about how well the problem is formulated. If a problem is formulated poorly, it is difficult or impossible to formulate a solution. Further, solving a problem is also about knowing the right math or having the right language, tools, tricks, machinery to do so. Easy problems are well defined, and the mathematical machinery already exists to solve them. Hard problems are poorly defined, and the mathematical machinery does not exist. When a mathematician stumbles across a hard problem, they first focus on finding better language to define it. Once the problem is clearly defined, they proceed to _invent_ whatever machinery (tools and tricks) they need to generate the solution.

Approaching the global peace problem will be similar to approaching hard problems in mathematics. The difference is that to define and frame the global peace problem, we will need to find better language and invent new machinery for *every* discipline. Sticking to the mathematics example, we will want to frame global peace and its inner workings mathematically. Naturally, as there is no preexisting 'peace math', we will need to find new language to define the global peace problem mathematically. Then we will need to invent new machinery to actually generate a solution. This peace math will be just like regular math, but it will be a version that is framed in terms of solving the global peace problem.

The global peace problem will also need engineering, surly, so there will be a similar version—peace engineering—likewise framed in terms of solving the global peace problem. This peace engineering will be all about design and implementation of global peace. We also have physics. We will need a peace physics. We will need peace economics, we will need peace political science, peace psychology, peace law, and so on. We will need peace art. We will need an all around general peace science. A new version of all disciplines.

With the set of parallel disciplines, we will have the tools we need to define and attempt to solve the global peace problem. Actually doing this however (creating the new discipline versions and solving the problem) will demand more than an handful of peace-themed disciplines. Staying focused, our goal is to determine whether or not (global) peace is really more profitable. To do this we need to make a comparison: profitability now vs profitability of a peace system. We

already established that this comparison will be centered about some backwards compatible peace-based alternative to capitalism.

In comparing peace-based vs non peace-based economic systems, all other institutions and entities will fall in place around the comparison. By The Economic Peace Thesis, our hypothesis for the experiment is that the peace-based economic system and all its constituent elements will be both more successful (profitable) than their non peace-based counter parts and backwards-compatible. Peace-based mathematics will be more powerful than non peace-based maths, and backwards compatible. Peace-based corporations will have higher EBITAs with fewer questionable practices than those corporations that do not explicitly prioritize peace. Peace-based academia will provide better quality education and produce higher quality original research. Peace-based religious denominations will have higher conversion rates than religious denominations that preach fanatic, intolerant, and exclusionary beliefs. Peace-based governmental entities will have less bureaucratic bloat, better reach, etc.

We have to be clear on one thing however. In order to have confidence in our results, we must think scientifically about this experiment. The thesis needs to be clarified in a way that defines post-modern *profit* and all the extra value tokens in terms of today's modern *profit*, one strictly defined in terms of dollars and cents. That is, we must invent some way to normalize post-modern money into the dollars and cents of today. This will be challenging and a central preliminary problem that the time machine for peace social invention program must solve before any real traction might be gained in the future. This problem cannot be insurmountable, by necessity.

The grandest experiment therefore, is a comparison of how we do things now vs how we would do things if we approached everything we already do explicitly in terms of peace. The experiment's hypothesis is that approaching how we do things in explicit terms of peace will be more effective in general terms, bearing more success than our current status quo.

An interesting point to note about the grandest experiment is that it should never end. We will go over this more later on, but for now just bear in mind that any solution to the global peace problem will need to continuously evolve to track advancement. We will constantly be comparing present results against the future's more and more (ideally) peace-based establishment.

We still have a lot to talk about with regard to economics and all the different peace-based disciplines, institutions, and entities.

And moving forward please remember: 'peace-based' means 'based on the concepts of peace outlined in this book'. We will spend plenty of time later to go over what those are but for now we are just setting the stage.

In terms of achieving a maximized state of global peace, created by a global peace system, we must perform the grandest experiment. Maybe a more dramatic name for it would be *The Great Peace Experiment*. I don't know and I don't particularly care at this point. Call it what we want, the experiment must be performed.

Subpiece 2: Consilience.

This chapter, like the rest in this section, is a prelude for the next section where we get into describing the central invention project in the Time Machine For Peace program. Here we discuss one of the primary functions of the world piece computer: knowledge unification.

Consilience was first popularized by the biologist Edward O Wilson. The idea is that instead of disciplines becoming more and more specialized, siloed and out of touch with each other, we should instead endeavor to bring knowledge together into a whole, unified via a common language (a universal *knowledge language* so to speak). More technically, this is to create an *ontology* from all the discrete bodies of knowledge, all the various disciplines.

Unifying knowledge is important in two regards:

The first regard is that in terms of solving the global peace problem, we need all the tools we can get. If knowledge is unified—for example to unify art and science—we are more able to traverse to and fro between pure art and pure science at will. The value in this comes from the fact that merging disciplines introduces new language into each other. Art language may be applied to science, and science language may be applied to art. This is powerful because this allows us to make more, and more novel associations.

If I am a scientist, I can think of my experiment design as an art. The experiment has a gestalt, it has different tone and texture that must be managed. It has instruments in the same way a studio has tools. The creative process cannot be neglected. On the flip-side, if I am an artist, I can think of my current piece as an experiment. There is discovery involved, there is precision control of variables such as stroke weight, length, etc. I can take an unsatisfactory work and turn it into an experiment where I vary parameters, creating hypotheses along the way, to achieve better technique and results.

We might ask how to merge languages between two disciplines. According to the last section, the natural suggestion is to contextualize each discipline in terms of peace as a process, then orient our respective languages about this common point. Cross pollination between peace-based disciplines will ultimately provide us with more insight we need to tackle the global peace problem.

The second regard has to do with individual knowledge (and experience). We all have different knowledge we have accumulated over time, and it serves us in many beneficial ways. My knowledge contains insights, knowhow, and tricks (among other things) that serve me very well in my day-to-day. However, you probably don't know all my tricks and insights and knowhow. Likewise me to you, I cannot know all the value you store in your knowledge bank. So, say you and I share similar problems or difficulties. We are both on the hunt for new ways of approaching the same old problems, and the quickest way to do so is to access the person aspect of the trifecta (doing so of course, at the expense of time and energy).

You and I stand to profit by making peace, and working together to exchange our respective language. We both learn new things and we both walk away from the exchange better equipped to face reality. (Unifying individual knowledge always reminds me of the Vulcan mind meld, but unfortunately we don't have it so easy as telepathy.) The more people unify knowledge with one

another, the more equipped we are to solve our hardest problems. The more unification, the more mutual understanding, thus the less likely we are to fall victim to accidental conflict.

So what is the glue here? Be it individuals or disciplines, unifying knowledge has the common element of *language*. In order to unify two bodies of knowledge, there must be a higher degree of *understanding* between them. If I try to understand your knowledge without knowing how to speak your language, I will fail. Likewise, the people tasked with unifying two disciplines must have the ability to understand the language of both. Language is the glue.

Sometimes understanding language is difficult and nuanced. For example, you and I may both use the word 'dangerous' at times. You may by default say 'dangerous' and mean 'unsafe', whereas I may by default mean 'extremely competent'. If you and I were unifying our knowledge, we may actually need to invent our own shared language between us. The shared language is only ever supplemental (or not, as in the case of invented languages like Esperanto), so we won't need much and in many cases we can invent it as we go.

Things of course get more complicated the more disciplines' and individuals' knowledge we attempt to unify at once. Here we are forced to find something common, but the problem with concepts that span many realms of discourse is that said concepts are often extremely vague and loose, with a myriad meanings between contexts and people. Shared language in this case must be more deliberately crafted.

Thankfully, if we are speaking in terms of unifying peace-based versions of disciplines, this makes the choice of language glue very easy. Such a shared language will revolve about the concept of *peace process* (and as my effort is concerned, the concept of peace as drawn out in this book). Likewise, peace-minded individuals will have an easy time adopting a peace-based shared language because the Time Machine For Peace program is so large it will be infeasible without.

It is tempting to draw back and exclaim, "you're talking about inventing a universal language!" Not so fast, well, not yet at least. Natural language in general is 'living' they say. This means it is constantly changing, each news cycle, each inside joke, each movie and new piece of slang. Inventing a shared language cannot constitute a universal language because there is no machinery to facilitate the process of language exchange and evolution. When I say 'universal' I mean so in the sense that I use the word in this book. We'll get to that later or you can check the glossary but suffice to say, 'universal' in this context means between and among worlds.

Universal language will not just include a standard language (grammar, lexicon, etc) but it will also include a process—and protocols, algorithms, routines—for connecting worlds of individuals and disciplines. Said process will include procedures (or agreements) to exchange, verify, correct, adjust, etc, the peace-based shared language. These procedures in general will focus on knowledge unification and learning, an *educational* process.

This is what we will address in section two. We will explore how the concepts of a *world piece computer* and *the universal piece computer* will serve as this machinery of language exchange and evolution. World piece computers networked into the universal piece computer, coupled with the shared peace-based language, will be the proper universal language.

Knowledge should live on one tree. The knowledge tree should have only one trunk. By creating peace-based versions of institutions, entities, ourselves, we stand to achieve a meaningful and purpose-driven form of consilience where the trunk is a universal concept of *peace process*. Before we can unify as a people, we will need to begin tackling the unification of knowledge. Before we can do that, we need to disambiguate between the different types of peace that we use on a casual basis.