

Foundations of Universal Binary

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Abstract

This paper introduces a novel binary logic framework called “Universal Binary,” which redefines traditional True/False (**T/F**) binary logic by positing that any idea can be reduced down to binary language. This framework rests on the theory that the 0/1 binary relationship can be better defined as Null/Not-Null (**N/NN**) rather than T/F. By defining binary logic through this lens, we can start to create other lenses that can be reduced down to N/NN, but not T/F - such as Good/Bad, Positive/Negative, Chaos/Order, and many others. Evaluating ideas through these lenses, we can start to assign universal definitions and types to concepts and understand how our brains handle decision making, as well as how we should be making logical, ethical decisions in a chaotic, confusing world. In addition to helping with our own logical decision making, the implications of this theory stretch across various other fields, including philosophy, linguistics, AI, law, and computer hardware design, by challenging conventional binary logic and proposing a more nuanced approach to understanding the true nature of the self and the universe around it. Essentially, this idea allows us to take three dimensional concepts and transform them into universally understandable clearly defined language.

Introduction

Disclaimer: Skip the Introduction if you want to get straight into information, as it's primarily providing backstory and context.

The origin of this paper dates back to childhood, and my quest to understand what it means to be a “good person”. As the youngest of three, my parents' level of Orthodox Jewish observance had been on the rise before I was born. I was enrolled in a Jewish day school, and immersed myself in the culture. I quickly learned about our history through my education and all the reading I would do in my free time - I became obsessed with the mythology and lore behind everything, assuming it to be concrete history. It spoke of a world in which my people were special and had a relationship with the creator of the universe, to the point where he would bend the laws of nature for us - how incredible would that be to any child?

A glass shattering moment was when I realized that not everyone in the world was Jewish, and therefore, not everyone was a part of “The Chosen People”. I originally thought that it just meant every person who was alive was chosen - it made sense to me; I felt incredibly lucky to be alive every day until that point. I started asking questions about our faith; it was no longer

resonating as a pure force of truth with my subconscious. Eventually I learned that you could reach bedrock with questioning - people would reach some variation of, "Because I said so," or, "Because God said so". I started to shut down inside, knowing that I would never get satisfactory answers from the people I loved and cared about. All I wanted was to be a good person; it didn't make sense that it was so difficult of an idea for anyone to agree on.

It always caused me a great amount of pain and frustration that I loved my family, but we had such differing ideas of what being good meant - they believed it means following the word of the Torah to a T, while I didn't have a definition because I didn't think that it could be properly defined. I knew that the Torah wasn't the answer, but I still didn't have one for the ultimate question - "What do I say to God if I'm wrong when I die?" The package I was being sold didn't seem like it was created by a "perfect" God - in the endgame of Judaism, the Messiah comes and the world is changed but there's still an "In" group and an "Out" group, and those power imbalances are enforced by God? It didn't make sense to me. I didn't see the point in being a "good person" if that wasn't even an achievable goal for everyone. It was an arrogant thought, but I thought that even as dumb and simple a person as I was, I could come up with something better and more understandable.

Growing up with the internet, I was able to look up and verify almost any idea that was claimed as "fact" by my schools or community. My first reaction was to stop trusting anyone - everyone had been either lying or willfully ignoring our true history. I still didn't have an answer to God other than, "I don't know," but at least now I didn't think anyone else did either. What still didn't make sense to me though, was, how was everyone else so confident in these ideas if they didn't know they were true? It made me feel insecure about my own level of intelligence and continue doubting myself. In hindsight, "I don't know," was also the answer to, "Who am I?" at the time.

Fast forward to 2015; I was 24 and as uncertain as ever. My parents and siblings were fully entrenched in Orthodox Judaism and I was living on the other side of the country. My anxiety about meaning and observance had reached an all-time high. I didn't know what I wanted to do with my life, and the suicidal thoughts started creeping in. Finally, my subconscious had enough - I heard it say to my anxiety, "He's trying his best, but he can't get anything done when you're like this, so SHUT THE FUCK UP." That quieted down my inner voice and anxiety to the point that I could figure out a new path for myself - I still didn't have a perfect answer, but I liked this answer better than the one I had before, so I was able to move forward. This was me redefining the Null at the center of the Brandon/Not-Brandon relationship - instead of my center being a Null value like "I don't know," where I was unable to take responsibility, I had made the decision that I would follow my intuition until I figured out a better idea. I started studying computer programming in my free time, with a plan to switch careers. Around the same time, I had started playing Dungeons and Dragons, and had the idea to create a productivity app that would help quantify yourself while gamifying your tasks.

I loved computer programming - I loved the systems it created, the way anything you were working on could be translated down to 0's and 1's; it had rules that made sense to me. I also loved the way ideas could be implemented and used, while at the same time still continuing to

refine, improve, and analyze. Why couldn't my ideology be like that, too? Why would we want to run on a system from 1300 BC (the 10 commandments and 5 books of Moses) when we have so much more information to use now? Having these thoughts felt blasphemous and terrifying - I felt like if the God of the Torah were real, he had all the resources in the universe to stop me. However, because I wasn't instantly struck down by a lightning bolt, I felt like only one of the following options was possible: 1. God was powerless to stop me, 2. God isn't real, or 3. God wants me to continue following this train of thought.

I decided to keep on testing boundaries with God. I created a Dungeons and Dragons campaign in which Gods were given divine power but ordered not to interfere in the lives of Mortals, but one God, the god of Chaos, decided to intervene and create a "Chosen People" and generally stir up trouble in the mortal realms. He's eventually trapped and brought to justice by the player characters (spoiler alert). In the process, the players were given ethical dilemmas with the hopes of them realizing that they could make better, more ethical decisions than God does in the bible.

At some point, I became unsatisfied with my "Shut the fuck up" answer to, "What will you say to God when you die". I thought that I was doing better than the Torah's God, but I didn't have any way to prove it, so my anxiety related to God and faith festered and started growing again. One night, I lay awake thinking about the idea - "if I'm good, and God wants us to be good, then why is it so God-damn confusing for everyone? Fuck you, God." That made me laugh internally, so I said it again with more conviction. "Fuck YOU, God." I laughed even harder that time, before having the thought: "If I have to spend my whole life trying to be a good person and I'm wrong, at least I'm going to be the first person to tell God to go fuck himself when I die. That way, if I suffer for eternity as a result, I'll know that I still tried my best." This immediately replaced the "Shut the fuck up" thought, and I slept like a baby the rest of the night.

I realize now that I had effectively created a goal for myself with a form of limitless fuel - spite. I had renewed focus around figuring out rules for conducting myself as a good person. I knew I wasn't there yet but with my new plan to tell God off, I had created a foundation for conducting myself as a good person; my "Why". It wasn't perfect, but it was a really funny idea and it served its purpose; it got me through more difficult times and prevented me from becoming more anxious, depressed, and/or suicidal.

In 2020, I had an idea for a universal Role Playing Game system that would improve upon perceived flaws from Dungeons and Dragons. I founded a company with a few friends where we could work on this passion project while continuing our day jobs. While working on worldbuilding for our game, I decided to create a secret utopian society of Elves, somewhat based on the Klingons from Star Trek. However, I quickly realized that in Star Trek they never reveal what the basis of the Klingon society is - they never reveal what the rules are for the Galactic Federation either.

This led to some research and some thought exercises where I analyzed philosophies, ideologies, religions, and faiths throughout history. I decided that starting with the foundational

rules of these rulesets would save a lot of time, and came up with some additional criteria for defining a perfect ideological foundation from my point of view; it must:

1. Be understandable by anyone
2. Consider all values
3. Pursue refinement
4. Be simple
5. Allow itself to be wrong

One of the largest true values that I encountered while following rule 2 was Binary. Our world runs on communication through computer systems we created that all run on a Binary foundation. I wondered what would happen if I applied this idea to my own paradoxical belief system - I believed in truth and the largest truth I knew was Nihilism, but I couldn't disprove God or Judaism, so they lingered in my subconscious. Applying this idea in Judaism, there are 613 Mitzvot (commandments/rules) in the Torah, but those 613 couldn't have been figured out without a foundation to build on. The foundation is the 10 Commandments - without those, Moses couldn't have written the rest of the 5 books of Moses. You can go even further and say that the foundation of the 10 commandments is the #1 commandment - "I am the Lord your God". However, that rule can be co opted by bad actors or new religions - for example, there are real world examples where a group can say, "The Lord our God commanded us to kill anyone who doesn't believe in the same thing as us." The God who gave man the 10 commandments couldn't even define what being a "good person" meant in a universally understandable manner.

Around 1200 years after the Ten Commandments were given down to man at Sinai, the famous anecdote about a man visiting the houses of Hillel and Shammai took place. As it goes, an unlearned man visits the houses of Shammai and Hillel, the leading authorities on Jewish law at the time, and asks them the same question: "Can you teach me the entire Torah while I'm standing on one foot?" Shammai, being the more strict and serious house of study, dismissed him as a fool and sent him on his way. Hillel, on the other hand, said thoughtfully, "Treat your neighbor like you want to be treated. The rest is commentary." Hillel was able to identify a better foundational rule just 1200 years after God had already handed down his top 10 rules, and yet none of God's rules included any version of "The Golden Rule". God didn't leave any stipulations about what happens when someone comes up with a better rule - the rules he gave us aren't able to be challenged and they're not iterable.

In retrospect, this was one of the first times that I applied "Null/Not-Null" binary logic to a concept - I had successfully reduced a ruleset of 613 to its singular foundation upon which the rest of the rules rely. Additionally, I figured out that just because we were using different rule as the foundation of our framework, it didn't necessarily mean we had to throw out every other part of the rules; only the parts that aren't compatible with the foundation. I titled this fictional religion "Bonsaionism," since it evoked the concept of Bonsai - pruning and refining through growth; leaving the good parts while getting rid of the bad. While doing so, I had also identified a potentially better foundation for a perfect ethical Ruleset - "The Golden Rule". It took me a few more years until I put together the binary relationship between Nihilism and TGR, though.

In a perfectly logical society, like the Klingons, all true values must be considered. If a true value exists in a rule set but a more true value emerges, the truest value must replace the original. While considering ideologies, the largest true value that I could find was "Nihilism". Nihilism represents chaos - it's impossible to know if anything matters, so you are free to do whatever you want without repercussions. There is plenty of chaos to be found in the universe, so it's impossible to prove Nihilism as wrong. However, Nihilism isn't a productive ideology to follow - it can lead to Narcissism, Hedonism, Depression, etc. It also isn't a universally followable set of rules, because it simply states, "This is the way things are. Don't bother changing them because it's impossible." It's a paradox because it's the largest true value but it's also useless; so it can be considered either 0 or 1 if you're following True/False binary logic.

Once you take Nihilism and add "The Golden Rule" (**TGR**) on top of it, though - you can start to parse through and justify any value that normally would be considered "Nihilism". For example, taking the Murder example used to test the first of the 10 commandments: If you analyze using purely Nihilism, murder is acceptable in any form because it's impossible to prove anything matters. Using Nihilism with a foundation of TGR to analyze, you get: "You can only murder if it's with the intention of following TGR." This allows for a much more nuanced approach than the typical, "Do not murder," law that we claim to follow as a society - for instance, this law allows for a military, self defense, protecting your family, etc.

After putting those ideas together, I started analyzing any value I could think of. I eventually came back to the ultimate question, "What will you say to God when you die?" Finally, I came up with a logical, repeatable thought process to follow that I am calling "The Golden Loop" (**TGL**) that goes as follows:

1. It's impossible to know if anything is true other than, "I think, therefore I am." - Rene Descartes ('Descartes, *Meditations on First Philosophy*')
2. Therefore, the amount I know will always be outweighed by the amount I don't know.
3. Nihilism is the most logically true philosophy because it's impossible to prove anything matters
4. Paradoxically, it is logical to have faith and belief in something bigger than oneself because it is better and more productive and less selfish than Nihilism
5. The most foundational, simplest belief in order to be a good person is "The Golden Rule"
6. Any belief that violates the Golden Rule is not what a good person would believe, because (back to 1)

Once you understand those 6 steps, it's easy to start reducing them - the central dynamic is the binary relationship between Nihilism and The Golden Rule, as can be seen in Figure 1:

“The Golden Loop”

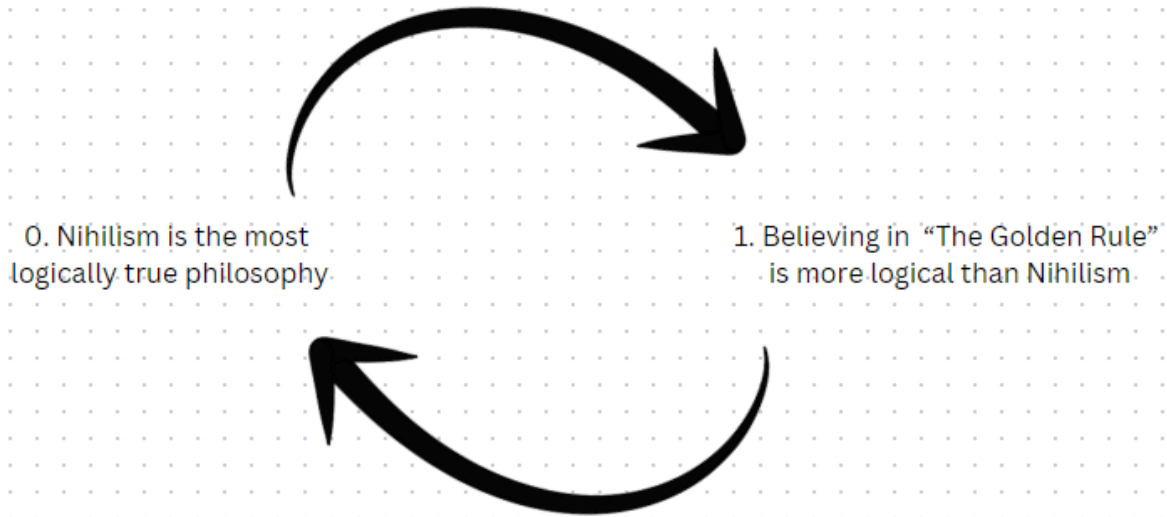


Figure 1

I began testing values using those two rules as a lens, and it turned out that there weren't any values that couldn't be resolved. I saw some parallels between those two values and the relationship between Boolean algebraic logic ('Boole, *The Laws of Thought*') and the Binary logic used for computers - Nihilism as a 0, since it represents a large amount of unusable data, and The Golden Rule as a 1, the actionable filter through which a person can start utilizing and parsing through the data that Nihilism provides. However, paradoxically, Nihilism was a True value, and arguably a greater True value than The Golden Rule, since Nihilism contains everything other than The Golden Rule. That meant that it couldn't be compiled down to True/False Boolean values - but True/False values could be compiled the other way around, using Nihilism/TGR as the 0 and 1. This led to me investigating this relationship further, until I came up with the proper terms for the difference in lenses - this lens was a "Null/Not-Null" lens that was more accurate for our 3-dimensional universe than the 2-dimensional line that a "True/False" lens creates. Null/Not-Null (N/NN) creates a 3-dimensional sphere, composed of many individual linear Binary relationships.

Once I came up with The Golden Loop, it immediately replaced the idea of telling God to go fuck himself when I died. I reprogrammed myself once more by redefining the Null at the center of my consciousness. The way to test TGL is to try and replace TGR with any other rule - if we use the previous example of "I am the Lord your God," as the foundation, you can also justify any action that would normally fall under Nihilism, but now without the safety net of trying to be a

good person. "I am the Lord your God so murder as much as you want," is an acceptable value because it's impossible to prove it isn't true. However, you can prove anyone is not acting like a good person if they are following the foundation of the 10 commandments before TGR.

The Golden Loop is the circle I spent my entire life drawing around God. It turned out that I was drawing a circle around myself - it defines who I am at my core. I believe that there are many other people out there struggling with Nihilism, their identities, relationships, and ideologies. Because this idea has helped me overcome so much, I feel as though it's my responsibility to try and put this out there so that it helps other people, too.

Using The Golden Loop and N/NN binary in conjunction, we can create a universal definition of Goodness that can be reduced down to, "Follow The Golden Rule". TGR has a lot of translations in a lot of languages - my favorite is "Do unto others as you want done unto yourself," - which means that this might not be the best definition of Goodness that exists in the universe. However, in the face of no more true value, I posit that The Golden Loop is the truest value that exists on Earth. If that is proven wrong, I will be happy to have found an even better framework to follow.

Following TGR on its own isn't enough - plenty of people following various ideologies claim to be following TGR, and they are following it by the rules of their subscribed belief. However, the idea that you understand Nihilism and choose to believe in TGR anyway is multifaceted: 1. It creates a simple, universally understandable baseline and system to build off of, and 2. It means that your definition of TGR isn't hiding any subtext, because it can be challenged any time and utilize all of the information that Nihilism supposes.

By using TGL as a N/NN binary lens, as TGR is being isolated and defined here as the foundational rule of ethics; we can say that this relationship isn't just defined as "TGR/Nihilism" - we're defining "Good/Not-Good" or "Best/Not-Best". Essentially, we're taking 0/1, previously defined as False/True, and saying that if you redefine them as "Null/Not-Null", you can also define it as "System/Unit" or "Baseline/Building Block" - 0 is the system that you're running on, Numbers or Mathematics, but it also represents the baseline value for any equation. 1 on the other hand, represents both the smallest and largest building block needed for the system to have value. Using these definitions, you can also use the translation "Unusable information/Usable information". You can also use "Nothing/Not-Nothing", "Nothing/Something", "Nothing/Everything".

Continuing to extrapolate definitions from "Null/Not-Null" as the ultimate definition of "Binary," we find 4 types of binary relationships: "0/0", "0/1", "1/0", and "1/1". Ultimately, by using "Null/Not-Null" as a baseline definition of our Binary Language, we can start to define real dynamic relationships between concepts and ideas in our universe. In the "Universal Binary Logical Framework" section, we will explore these ideas further.

Universal Binary Philosophy

The simplest way to understand Universal Binary Philosophy (**UBP**) is that it theorizes that any concept that exists in the universe can be reduced down to its foundation of 1's and 0's. If that is true, then it means that there is a binary relationship that exists between yourself and everything else that exists. Instead of every single relationship evaluating as True or False, however, they can all be defined in scales of Nullness, using Null or Not-Null. I'm going to use the idea of "Brandon/Not-Brandon" to display this. By comparing Brandon with other concepts that exist in the "Not-Brandon" - like "Smart," "Funny," or "Handsome" (thanks Mom), you can define those terms properly and start adding those ideas to your perception of self. You can also learn to avoid terms that you perceive as negative - like "Not-Smart," "Boring," or "Evil". Finally, the third relationship you have with the universe, outside of "True" or "False", is "Null" - ideas you haven't conceptualized or fully comprehended or made a decision on yet, therefore they live in a superposition between 0 and 1 until realized. For "Brandon" a Null value might be, "Good at Writing" or "Not-Awkward," representing the fact that I am still bad at writing and have yet to figure out a way to not be awkward, but I have the potential to turn both of those values into True by defining that I want them to be True in the first place. Additionally, a Null value can be defined as something that's outside of your control - understanding ideas that are outside of your control is where this idea has some overlap with Cognitive Behavior Modification.

Using Null/Not-Null binary isolates a single concept or idea. What this means is that by using "Good/Not-Good," if you have to choose a single value that is the most Good, it means you're actually evaluating "Best/Not-Best". Similarly, if you're evaluating "Bad/Not-Bad", you'll actually end up defining "Worst/Not-Worst". This can also be applied to the concept of True and False - you can evaluate "True/Not-True" or "False/Not-False" by using this framework. Using this lens, we can start to conceptualize and understand "goodness" - it's not just a moral standard, but an active choice to try and choose the best possible actions from the realm of all possibilities (Not-Best).

In a universe where everything has a true relationship if they're reduced down to one of the four binary relationships, the most interesting relationships become ones that can be defined as opposites. That means that conflicting ideas like True and False or Good and Evil or Positive and Negative end up becoming more meaningful and important than ideas that don't conflict, since we can assume that's the norm. This is also true because these ideas can be used to analyze the other values and assign them weighted values.

Applying UBP to ideas and concepts that I'm familiar with, the lens that I'm applying to Ethics is "Most-True/Most-False", or "Truest/Falsest". The Golden Rule (**TGR**) was the greatest true value I could come up with, while Nihilism was the greatest false value. How do we define "Most" though? The concept with the Most True values along with the concept with the Most False values. During my testing, TGR was able to make any relationship Positive while Nihilism could make any relationship Negative, except for its relationship with TGR. Because Nihilism contains the potential for any concept, including TGR, we have to define that it is no longer an unusable

Null 0 value - by separating TGR from the infinite Nihilism value, we've created a charged relationship between the Null/Not-Null: "-1/+1".

Pure Nihilism serves as a foundational ethical baseline, a 0, by mathematically reducing anyone who analyzes it. Using an absolute "Truth/Not-Truth" lens on Nihilism, you would hypothetically be left with all True knowledge that exists, has existed, and will exist in the universe. However, if you were to try to analyze your own ability to understand all Truth that exists in the universe - let's take a moment to remind ourselves that we've still only explored 5% of Earth's Oceans which makes up ~70% of our planet. And that's the sum of the information all of human history has come up with. The amount that a single person can learn in their lifetime is vastly, incomprehensibly smaller than the sum of true values that exist. Additionally, the amount of negativity in the universe vastly outweighs the positivity. "I think, therefore I am," (Descartes, *Meditations on First Philosophy*) may be a true statement, but it doesn't force you to do anything with that self awareness; especially in the face of Nihilism. That is why, the amount that I know will always be outweighed by the amount I don't know. That can be a crushing thought to dwell on - what's the point of doing anything if none of our actions even matter? If your thought process stops there, you can slip into certain trains of thought that allow for Hedonism, Narcissism, and depression among others. It's a zero and an infinity at the same time. That's where TGR comes into play.

The Golden Rule is the truest, best value that mankind has come up with throughout history - as close to a complete 1 as we can get from an abstract concept. Religions and ideologies throughout history have come up with it as an idea, but because it was never the foundational rule, it has always been possible for it to be either ignored or misunderstood by people from different backgrounds. As a way to stress test this idea, think of the worst action you can think of and add "...to be a good person" to the end of it. "I want to commit murder," is a much different statement than, "I want to commit murder to be a good person." Wanting to commit murder is not typically something that a good person would want to do, but by adding intent and context to that idea, we can transform our own perception of it - either this person has a sickness that they're admitting to you because they want to be a good person, or there's additional information you don't know yet: they could be fighting in self defense and have no choice, be a part of the military and defending their friends and family, or be referring to pulling the plug on someone who is terminally ill and asked them to do it.

Because of its special nature as a foundational lens in this framework, TGR acts as a 1 that allows for understanding and synthesis between it and Nihilism. It's either subtracted out or added on to Nihilism depending on your perspective - essentially infinity (null) minus 1 or plus 1. Now that you've taken out a part of Nihilism or added onto it, you've changed it from Nihilism into something entirely different - Not-Nihilism. It's now a source for infinite knowledge along with a framework for understanding it - as long as you are acting with TGR as a foundation, it is impossible for you to do anything unethical, since the only thing that's "not-ethical" according to Universal Binary is "Not-Best", which can be translated as "Not-TGR".

By bridging humanity's many philosophical traditions, Universal Binary seeks to unify followers of any belief system. It acknowledges the profoundness of certain universal truths and ethical principles, positioning them within a broader, all-encompassing framework.

In computer programming, there exists the concept of a "Linter". Linters use rules to analyze your code and find potential threats and rule violations before you commit your code changes - finding the code equivalent of "lint". The Golden Loop can be looked at as a Linter for any philosophical framework - believing in it does not mean you have to give up your faith, it simply asks you to look at it again through the lens of a universal definition of "Good Person" and highlight problem areas.

UBP theorizes that a society governed by The Golden Loop would only need that as the foundational rule of law. This would mean that the moral justification of actions hinges on the intention to follow the Golden Rule. It proposes a societal model where ethical reasoning and intention are the most important factors in evaluating actions.

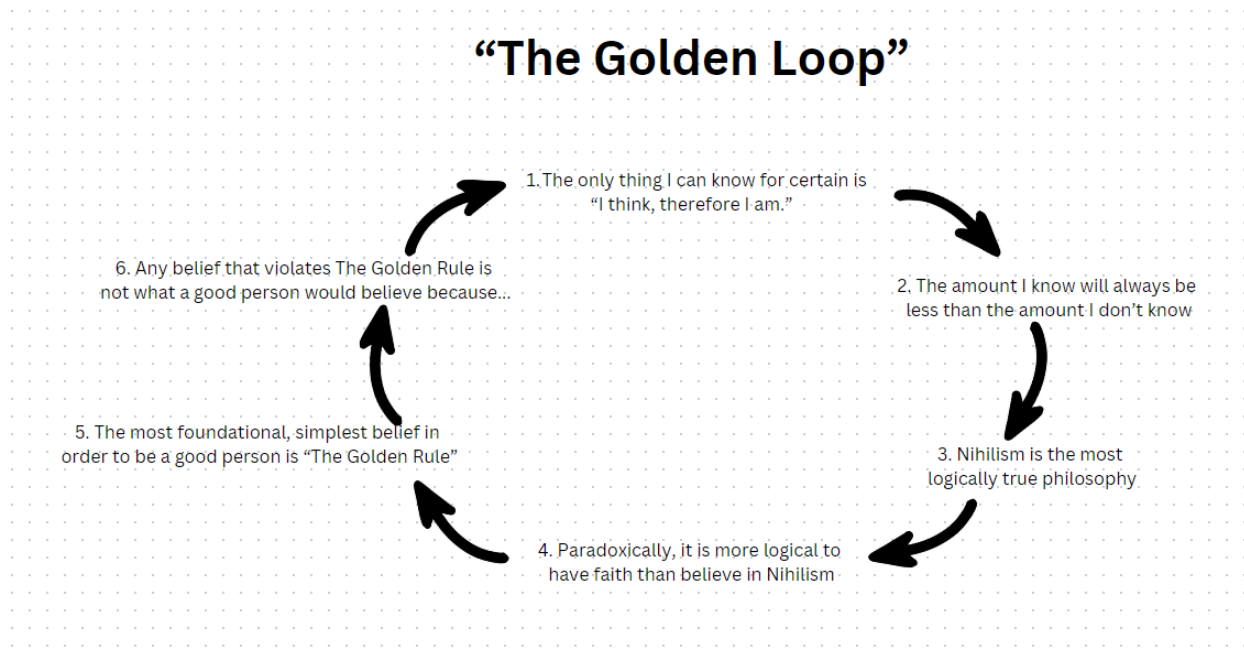


Figure 2

Universal Binary Logical Framework

Null/Not-Null (N/NN) binary presents a radical shift from the conventional True/False (T/F) Boolean Algebraic translation that Claude Shannon came up with in 1937 ('Shannon, A

Mathematical Theory of Communication'). This section will dive into what the rules of this theoretical framework would look like, as well as providing visual representation. Figure 3 represents the traditional 2 Dimensional True/False relationship that exists, while figures 4 and 5 are ways of representing Null and Not-Null in a more 3 dimensional, spherical manner.

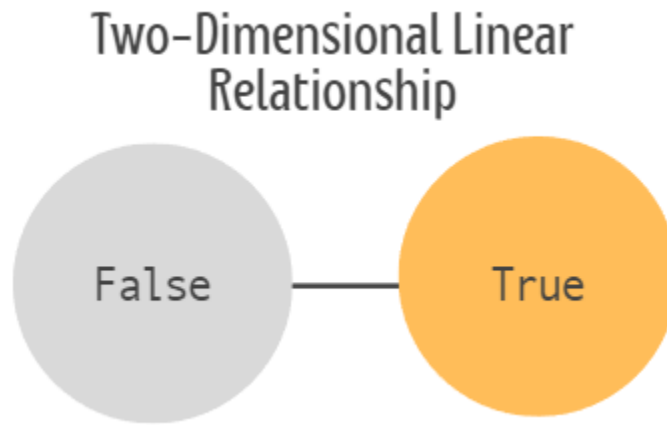


Figure 3

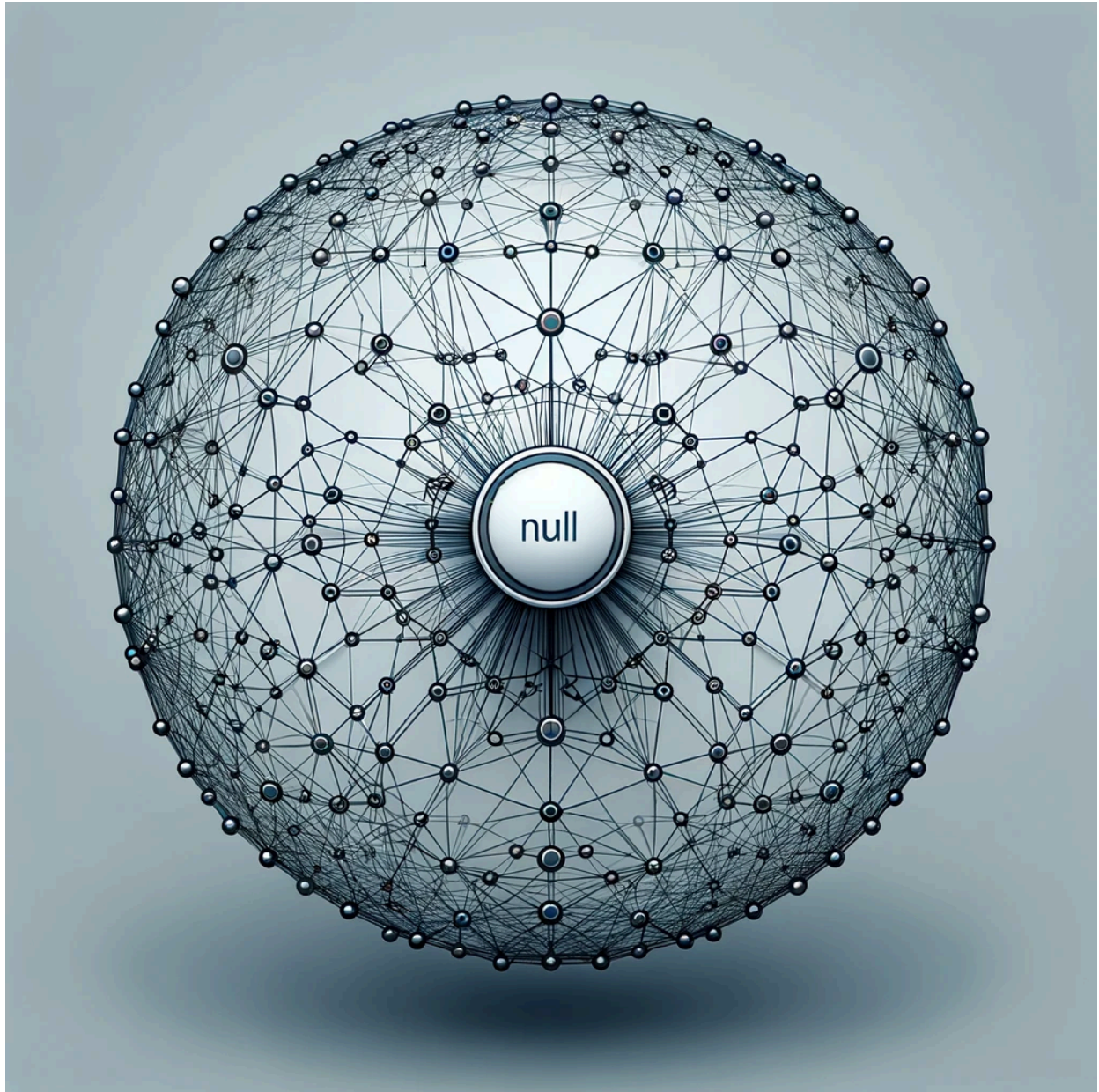


Figure 4

Three-Dimensional Spherical
Relationship

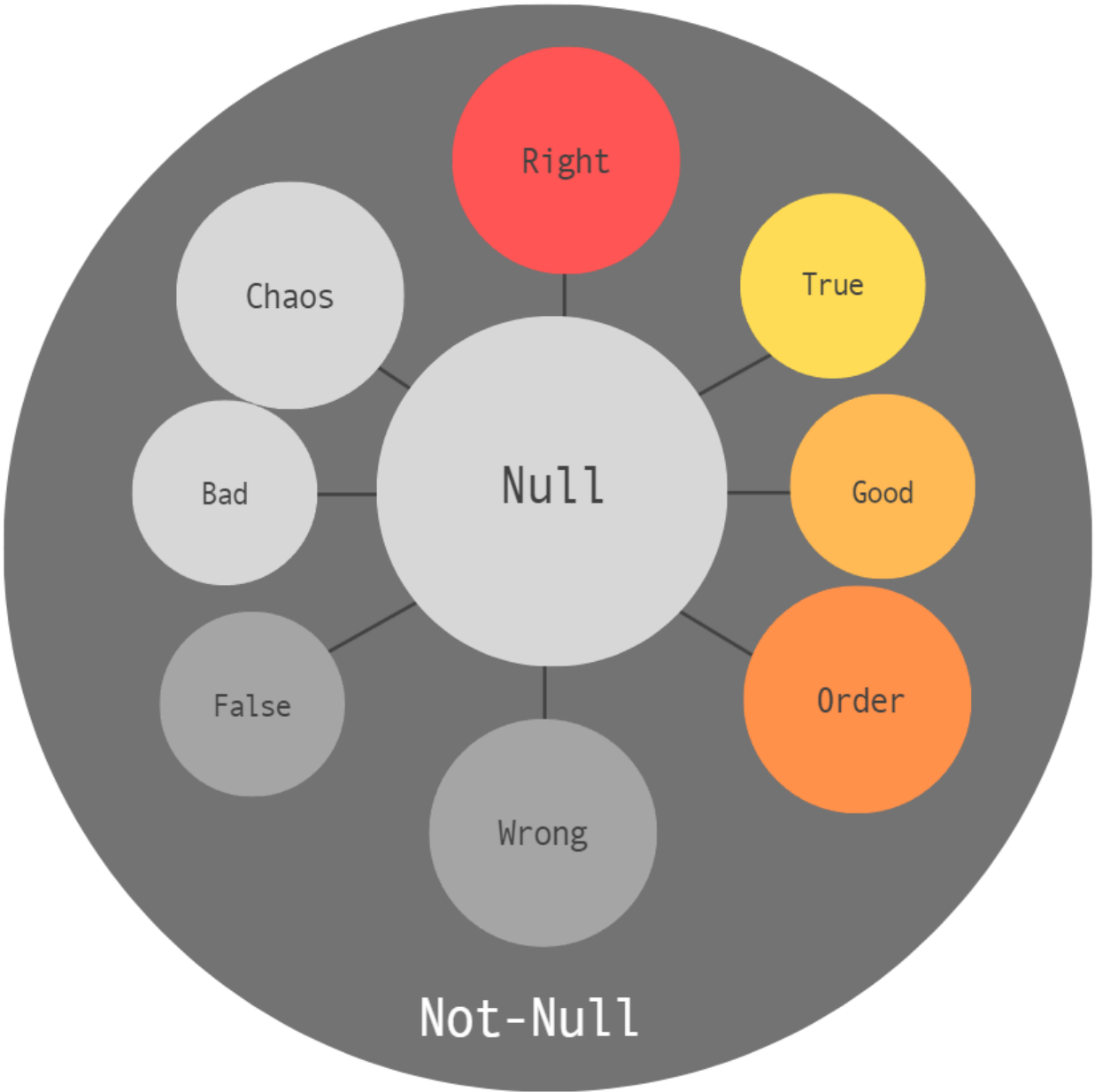


Figure 5

Defining Binary

As discussed in the introduction, there are four different types of Binary values that exist in our universe - 0/0, 0/1, 1/0, and 1/1. Universal Binary proposes that the definition of Null/Not-Null can be used to better define those values in plain English than True/False. English is an imperfect, made up language. The Universe runs on rules and logic and systems that don't care about English - you can try speaking all the English you want at a meteor hurtling toward Earth, but unless you hire some drillers and train them to become astronauts (shoutout to Michael Bay), there's nothing that your English can do to stop it. However, what we can do by using the N/NN definition is identify other precise definitions that do exist in the chaos of the Universe, which will allow us to better define and understand everything else. This doesn't mean that you cannot use the True/False definition - it's still an incredibly useful tool; however, in the Universal Binary Framework, this is just one of many lenses that we can use to translate concepts and ideas down to binary. The reason that this is important is that we can understand that there's a difference between the concepts of "Good and Evil" (**G/E**) and "Good and Not-Good" (**G/Not-G**) - one separates a data set into two parts of variable sizes, and one separates a data set into one value versus every other value in that data set. G/Not-G separates the best value that exists from all other values. G/E separates any good value from any bad value, creating a data set that you still need to sift through in order to find the best decision.

Finally, understanding that using "Not-Null" as the antithesis of "Null" allows us to redefine the symbol we use for the term "Negative" (-) as "Not" which allows us to start using this lens properly - it redefines the concept Negative-One (-1) to Not-One (-1), which literally means any value that does not include the original Positive-One (1 or +1) you were referring to. This can also be applied to Zero and Negative-Zero - instead of defining it as a literal Negative value, we can say that Not-Zero (-0) means any value that does not include your original Zero (0 or +0).

True/False Evaluation:			Positive/Not-Positive Evaluation:	
False Array	[...,-2,-1,0]		Not-Positive Array	[...,-2,-1,0]
True Array	[1,2,...]		Positive Array	[1,2,...]

Figure 6

Essentially, anything you can conceive of is a 1 in the binary of the universe - because you are a part of the universe and you came up with that idea, the universe came up with that idea. The absence of physical sensory properties doesn't mean that it's a 0 - it could be perceived that way by everyone else, but if a value exists as a 1 in the Universe, then it's possible to convince others of that Truth - converting a 0 into a 1 in their mind. Once you can agree on an idea together, it becomes a new baseline - a new 0 - which allows for you to build on together, using the rest of the sums of your knowledge. This means that Neutral 1's have the potential to become 0's - if everyone understands the same exact idea properly, it becomes a new baseline because you no longer have to discuss it. Additionally, if someone does not care about an idea or topic they can ignore it - whether they understand it (1) or not (0), it's effectively a Zero to them. However, if I want to understand something but know that I don't, it's effectively a

Negative One (-1) - something I want to become a part of my understanding, but know that I don't understand yet. The -1 has a greater potential to become a +1 than the 0 - by identifying it as a Zero in the first place, you've changed the nature of the idea from a 0 to a 1, even if it's not positive or fully formed yet.

Logical Symbols

I'll be using 'N' for Null and '-' for 'Not' or 'Negative' since according to this theory they're the same when translated down into binary. Additionally, I will be calling the binary relationships such as 'True/False' and 'Null/Not-Null', 'Lenses'. Lenses can be defined as logical starting points for an equation that can all be translated back down to either "0 = 0", "1 = 0", "0 = 1", or "1 = 1". The '=' symbol describes relationships that have the potential to exist, which is why "0 = 1" and "1 = 0" are valid endpoints in this framework. Another word other than "Equals" would be "Allows" or "Becomes". The Null/Not-Null lens could therefore be written as 'N = -N', describing two separate values that each exist in the same binary "**1 OR 0**" superposition.

Binary Lenses

Figure 7 is a table that displays different binary lens values that exist, using the Truest definition of Null/Not-Null as a foundation. You'll notice that certain concepts, such as "Good and Best" as well as "Bad, Worst, and Evil" can all be reduced down to the same definition when using Universal Binary - this is because it is attempting to define an absolute value. What it means is that if something is not functioning in the best way possible, it's acting not-good. On the flip-side, it means that it's impossible to act Evil if you're not purposely acting the worst way you can think of. This is based on the idea that True/False are secondary translations of 0/1, while Null/Not-Null are the primary lenses through which all other lenses are derived.

Null	Not-Null		Null	Not-Null		Null	Not-Null
	0	0		0	1		1
	0	1	FALSE	TRUE		-1	+1
	1	0	Nothing	Something		Neutral	Neutral
	1	1	Chaos	Order		Negative	Positive
			Neutral	Neutral		Best	Not-Best
			Noise	Data		Incorrect	Correct
			Undefined	Defined			
			Nothing	Everything			
			Zero	Infinity			
			Baseline	Building Block			
			System	Unit			
			Zero	Not-Zero			
			X	Y			
			Bad	Good			

Figure 7: Definitions and Lenses

From Linear to Spherical Logic

Traditional binary logic operates within a linear, two-dimensional framework where data points are mapped as either 'True' or 'False'. In contrast, the N/NN binary theory expands this into a three-dimensional sphere, where values are not just points on a line but positions within a sphere, allowing for a multiplicity of states beyond 'True' and 'False'. This is visualized as a sphere where any point represents a unique state, encompassing an array of 'nullness' degrees. The goal of Null/Not-Null as a lens or filter is its ability to flatten a complex, three-dimensional sphere of information into readable, two-dimensional data - Taking a 0 and turning it into a 1.

Data List of All Numbers in Existence	[..., -2, -1, 0, 1, 2, ...]
True/False Evaluation:	
False Array	[..., -2, -1, 0]
True Array	[1, 2, ...]
Null/Not-Null Evaluation:	
Null Array	[0]
Not-Null Array	[..., -2, -1, 1, 2, ...]

Figure 8

In the example above, we can see the difference in sorting an array of numbers using T/F versus N/NN. You could then take the resulting Not-Null array from Figure 8 and apply another lens that N/NN provides - "Positive/Negative" (+/-):

Null/Not-Null Evaluation:	
Null Array	[0]
Not-Null Array	[..., -2, -1, 1, 2, ...]
Positive/Negative Evaluation:	
Null Array	[0]
Positive Array	[1, 2, ...]
Negative Array	[..., -2, -1]

Figure 9

In fact, if we wanted to get the same exact result as we're getting with T/F binary, we could use Positive/Not-Positive (+/Not+).

True/False Evaluation:		Positive/Not-Positive Evaluation:	
False Array	[...,-2,-1,0]	Not-Positive Array	[...,-2,-1,0]
True Array	[1,2,...]	Positive Array	[1,2,...]

Figure 10

What this means is that there are Positive, Negative, and Neutral values that exist in the universe, but in most cases you can ignore Neutral values in the presence of Charged ones. Because a charged 0 becomes a 1 by identifying it as charged, the most important binary relationships that exist in the universe are 1/1 relationships.

From Spherical back to Linear Logic

The ultimate goal of N/NN is to turn any concept into an understandable one, no matter how complex. The way I visualize this is by picturing a ball of colorful yarn - it's impossible to see what's at the center of it, but if you start unwinding it, you can understand the colors of each individual segment. Figure 4 is a representation of that spherical dataset, starting with Null at the center, and each individual node as a representation of a Not-Null value. In this framework, the relationships that exist between data points can also be defined as a real value - either Null 0 if it hasn't been observed yet, or if it has been observed, it can be classified as a +1 if it's a positive value or -1 if it's a negative.

Visualizing the concept

Applying relational lenses to an idea can allow them to be visualized as a systems map, and then further refined and organized in usable data objects - we can use Null as a starting point for example.



Figure 11

Null represents the absence of usable information. It is a subset of concepts that are unusable by themselves: Unknown, Everything, Nothing, Zero, Infinity, One, Chaos, None, Noise, Confusion, Undefined, Neutral, False, Relationships - these are all contained in the concept of Null, because they're concepts that exist, but they're unusable on their own. Zero, for example, is the baseline for mathematics - it's a way of expressing "Nothing" mathematically, but without defining a "1", "0" would be a useless concept. The way to separate usable information from Null is to define what's True; or what's Not-Null:

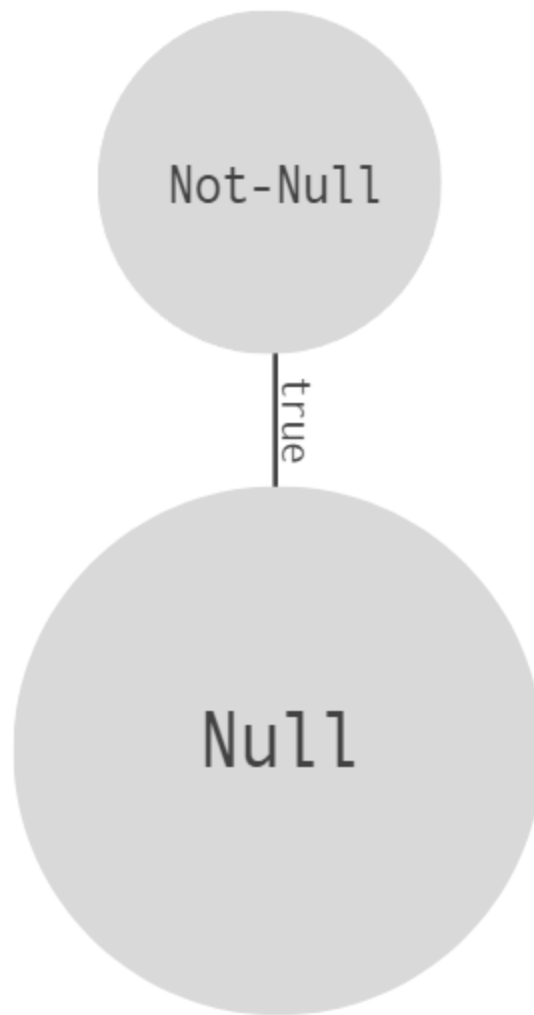


Figure 12

Any concept that you can identify can be defined as Not-Null - so despite Null and Not-Null both being True values that exist in reality, we can see that separating (or abstracting) the more true of the two values out allows for a more usable value. This relationship can be translated from "Nothing/Everything", "Chaos/Order", "0/1", "False/True", "True/True", "True/Not-True", "False/False", "False/Not-False", "X/Y", "X/Not-X", "Undefined/Defined", "Neutral/Not-Neutral", etc. This is the basis of the many binary lenses that we can abstract from this concept. Next, we'll use the True/False lens as an example, separated from the concept of Not-Null:

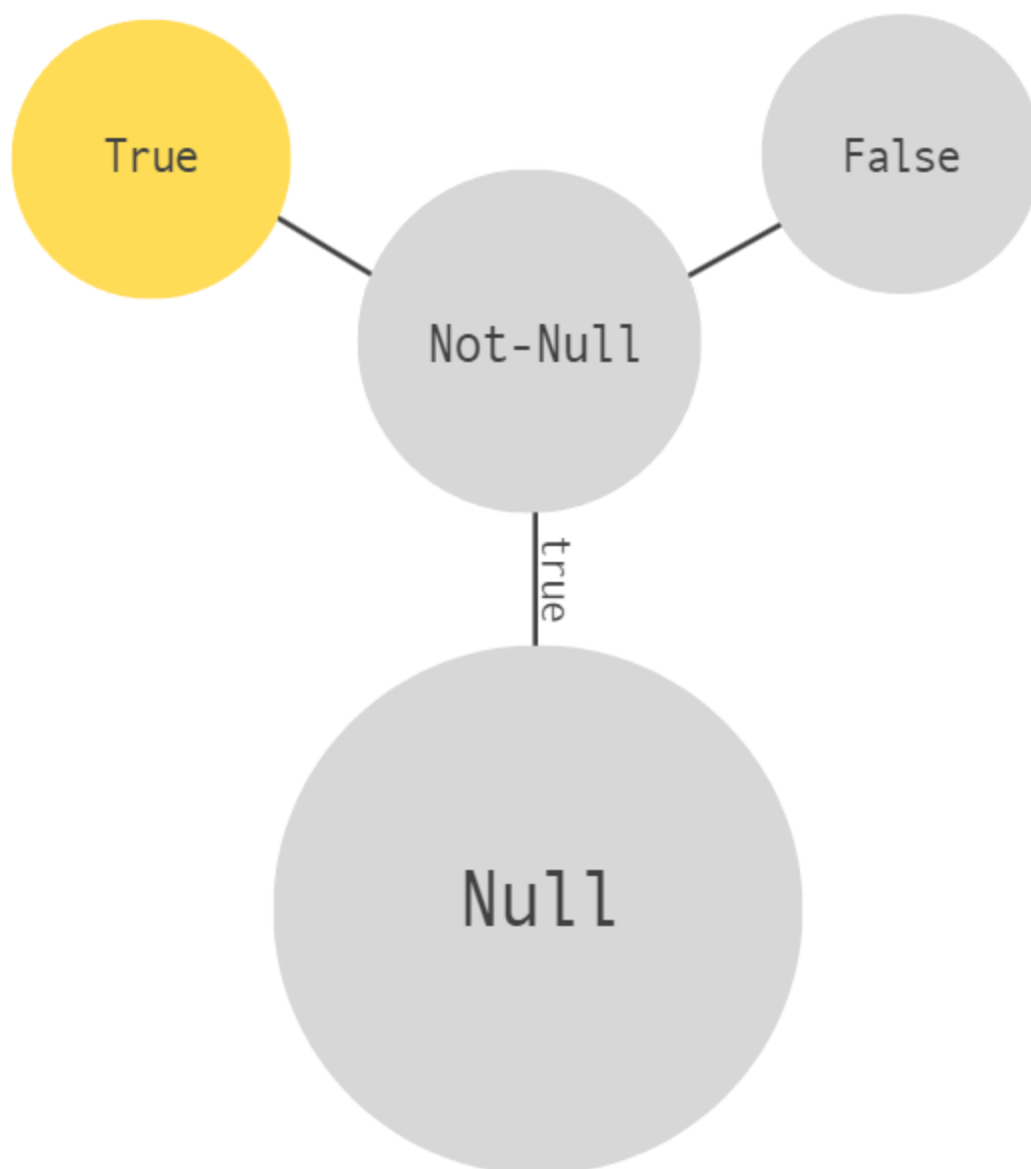


Figure 13

True and False are both Not-Null values that exist in our reality. They allow us to discern when ideas register as correct or plausible in our mind, or if we should reject them entirely. The difference between Figure 13 and Figure 12 is that Figure 12 allows for equations with 2 possible answers while Figure 13 allows for ones with 3 - instead of "True/False", now we have "True/False/Not-Null" - this could be translated as "True or False or Other". Despite being the third value in the True or False problem, and despite being worthless on its own, the concept of "Other" is still the greatest variable that exists in the "True or False or Other" equation. That is because there are other values that exist outside of True or False - such as Null or other Null values. Next, we're going to apply the lens that we created in Figure 12 to our True and False values in Figure 13, using the "True/False" translation:

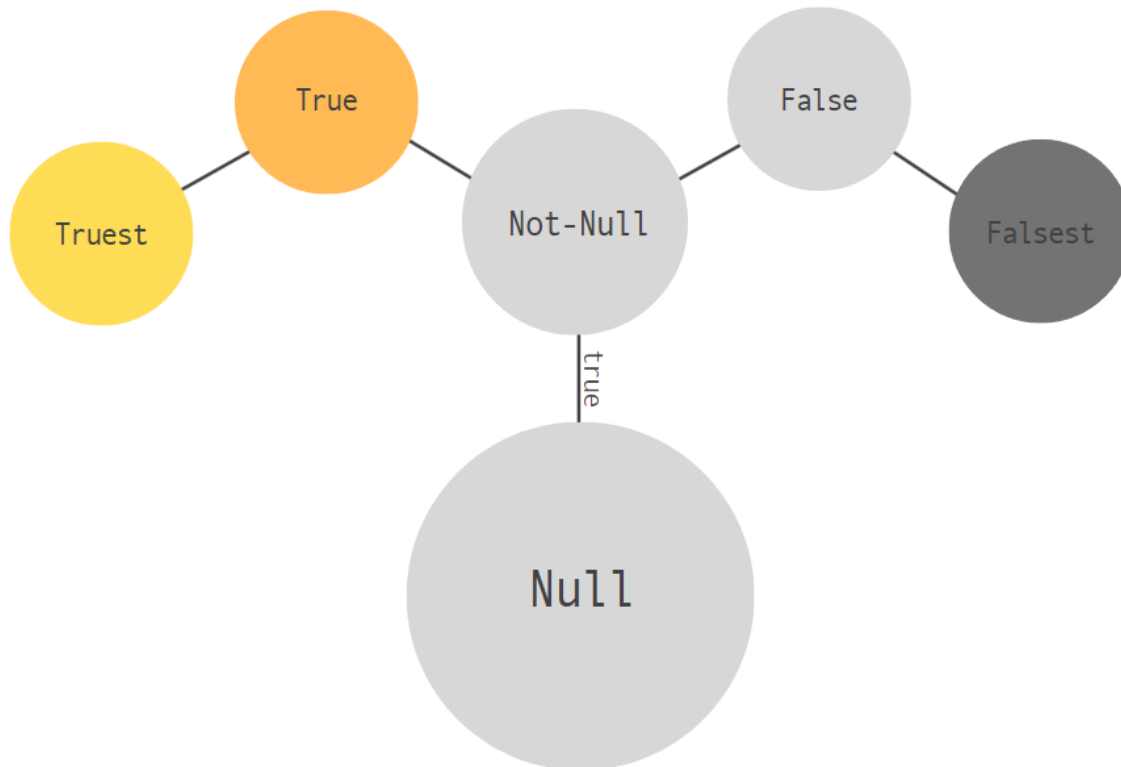


Figure 14

In Figure 14, we've applied the N/NN lens from Figure 12 to the concepts of True and False individually. True is a Null value, but the least Null (most 'Real') value that exists inside of True is the concept of Truest - given multiple True values, one will be more true than the others. The same concept exists for False and Falsest. What we've done in this instance is taken a relationship that exists, True/False, and broken it down into further, more refined values by putting them under the lens of N/NN. Now we have a model that's capable of taking concepts, sorting them into True and False values, and then taking those True and False values and refining them further into Truest and Falsest values. Using this framework properly and considering all values, we could effectively refine a list of complex values into the absolute best and absolute worst values. Notice that you could evaluate any of the individual linear relationships as one of the four binary configurations of 0 and 1.

Example in Binary

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1

Figure 15

Figure 15 shows a way of displaying 1 in traditional binary. Each square on the matrix could represent a circuit, for example.

1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	0

Figure 16

Figure 16 displays another number in traditional binary - one that we could either calculate by figuring out a giant number, or, if we start with the largest number we've programmed our system to work with, all we have to do is subtract 1 (-1).

1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	0	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1

Figure 17

Figure 17 displays an example of where Null/Not-Null and True/False binary conflict. By creating a singular 0 amongst all 1's, you've effectively created something that can be considered the absence of 1 - it's something different from a Null-Zero because it's still needed to define the rest of the 1's. Therefore, this singular Zero could be defined as Not-One or Negative One:

1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	-1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1

Figure 18

Figure 18 shows how this singular negative 1/0 superposition can be flattened down into our current form of Binary - it can still be treated as a 0 like in Figure 17, as long as that zero can be translated as Not-Null.

Computational Implications

In computational terms, the N/NN theory necessitates a reevaluation of data representation and algorithm design. Logic gates and conditional operations must be redefined to handle the multidimensionality of N/NN logic. This could have profound implications for the fields of artificial intelligence and machine learning, where the ability to process and learn from a complex array of data points is crucial.

Application in AI and Security

The theory's application in AI could lead to the development of more sophisticated, ethically aware systems. By creating absolute data sets and defining consciousness and ethics properly, we can effectively control the creation of systems that can learn and become much more intelligent than any human. N/NN includes the ability to absolutely define "Intelligence" as well as "Goodness" and "Empathy" - by programming our AI with the same definitions, using The Golden Loop, we guarantee that we will be working in tandem with each other rather than worrying about it replacing us.

For security, the N/NN paradigm could offer novel approaches to encryption and data integrity, ensuring systems are resilient against attacks that exploit the limitations of traditional binary logic.

Future Research Directions

Validating the N/NN model requires a blend of theoretical proof and empirical testing. Future research will focus on developing simulations that test the efficacy of N/NN logic in various computational scenarios and creating prototypes that demonstrate its practical application in hardware design. Creating the perfect foundational dataset to feed to AI models will be the next goal. Furthermore, the scope of this theory is greater than I can achieve in a lifetime, so it will require identifying experts in a variety of fields who can help develop it.

From Philosophy to Practice

In this section we're going to show how this could be a useful tool in helping quantify a complex idea -

First, we'll be quantifying Human/Not-Human:

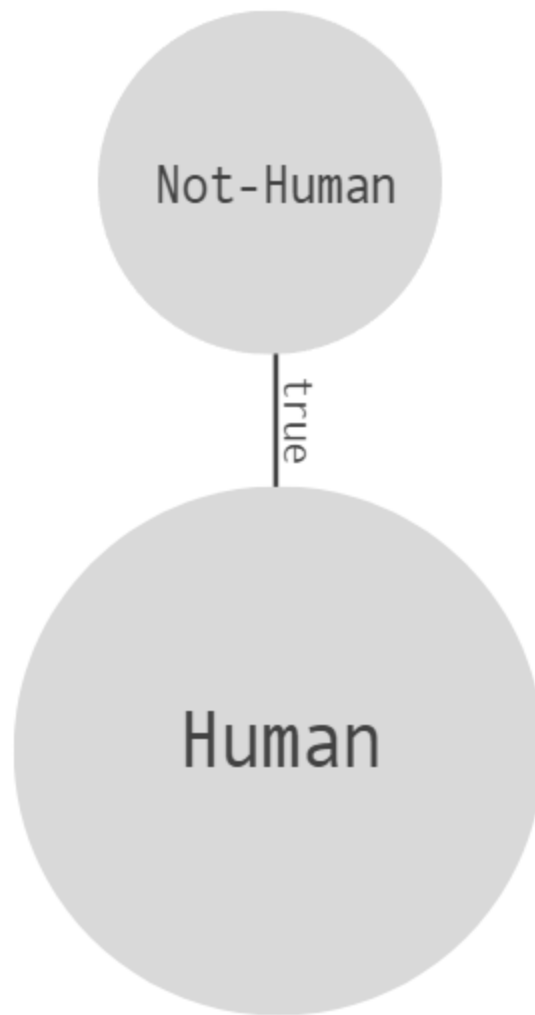


Figure 19

Here we can try and identify what makes humans different from Not-Humans. We know that we're alive, so we can abstract that out:

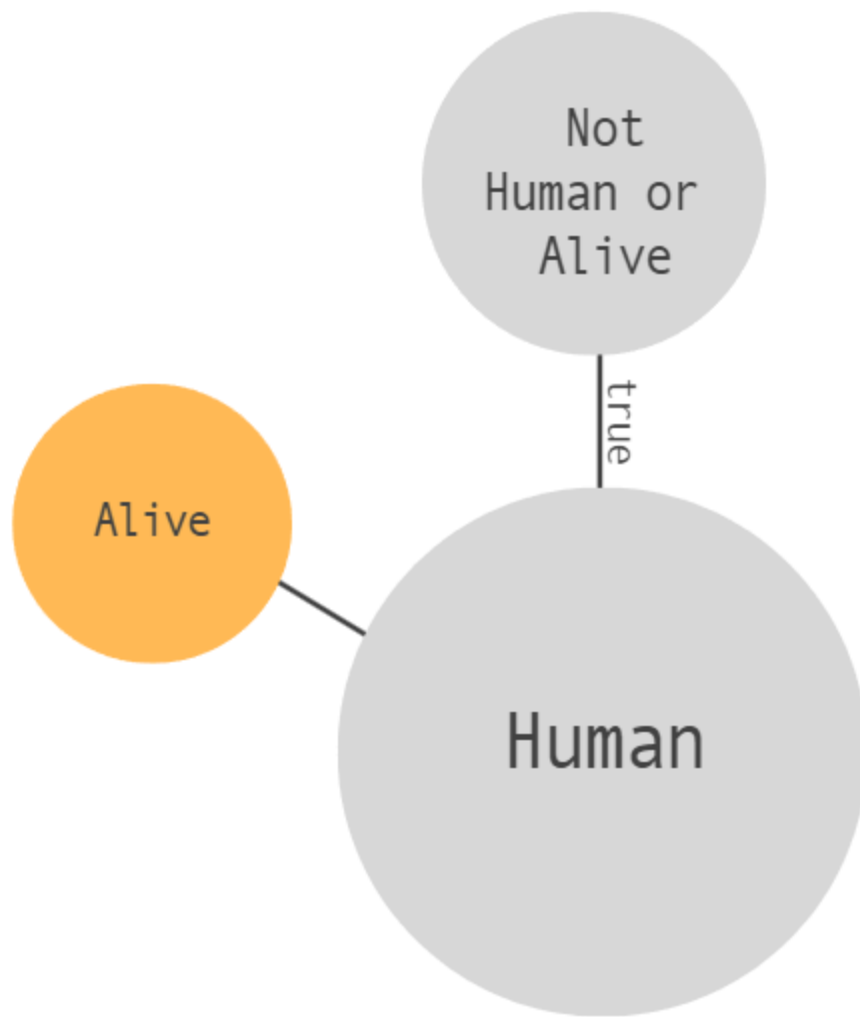


Figure 20

Now we can try identifying some further characteristics that differentiate Humans from other life forms - such as Intelligence and Technology:

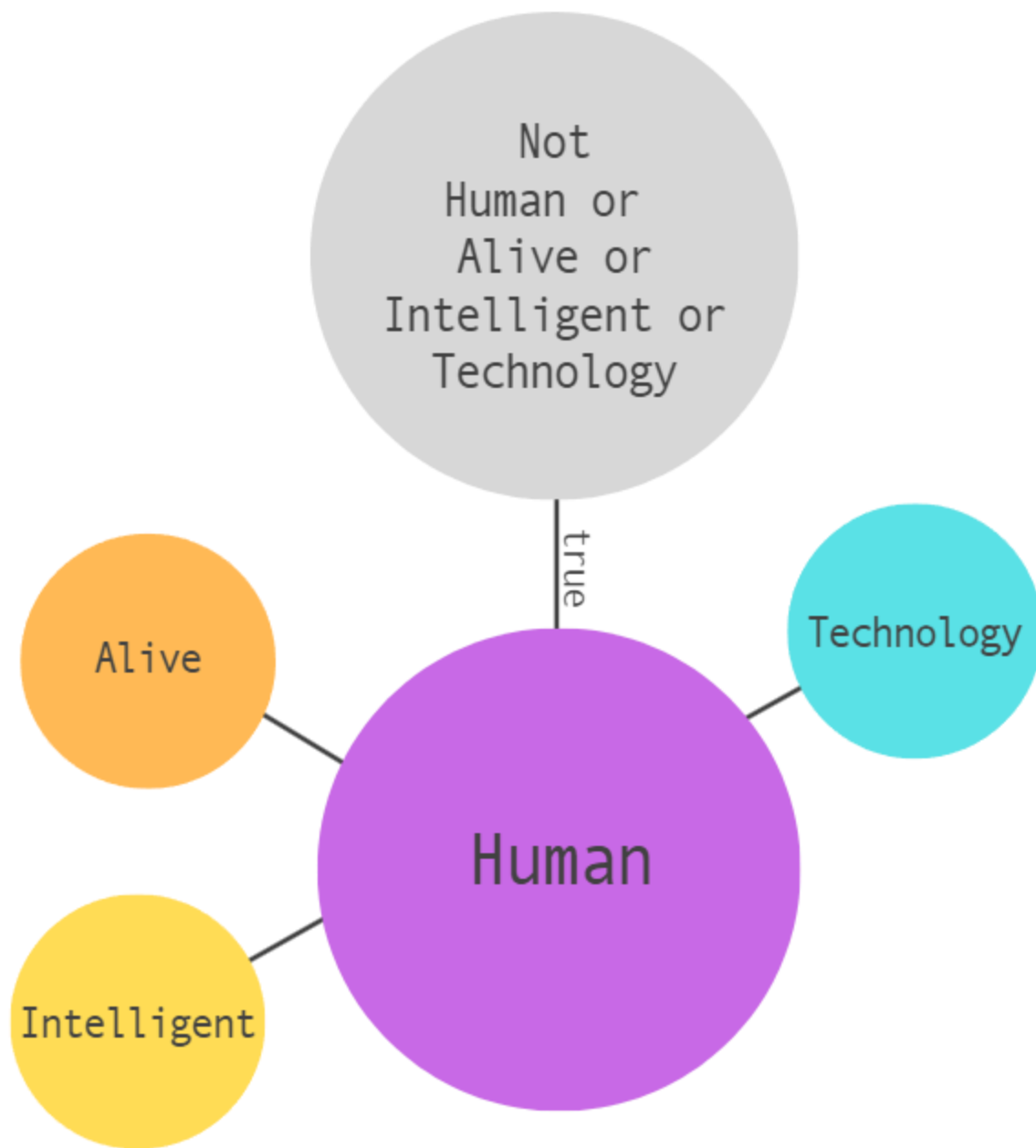


Figure 21

The biggest difference between humans and other life forms on Earth is that we're the smartest ones that we know of. We're the only life form on the planet that has a way of shooting ourselves off the planet if things get too scary here. In other words, we're the only ones making any order out of chaos - in a sea of 1's (other life forms), we're the greatest positive 1, even if we're not perfect. The reason for this is that we're capable of improving ourselves more quickly than any other species, which means that in the long run our self care will lead to a greater

benefit for the other life forms. We can go much further in quantifying and abstracting, but be warned - it starts to look a lot like a character sheet from a tabletop role playing game.

We'll be attempting to quantify Brandon/Not-Brandon

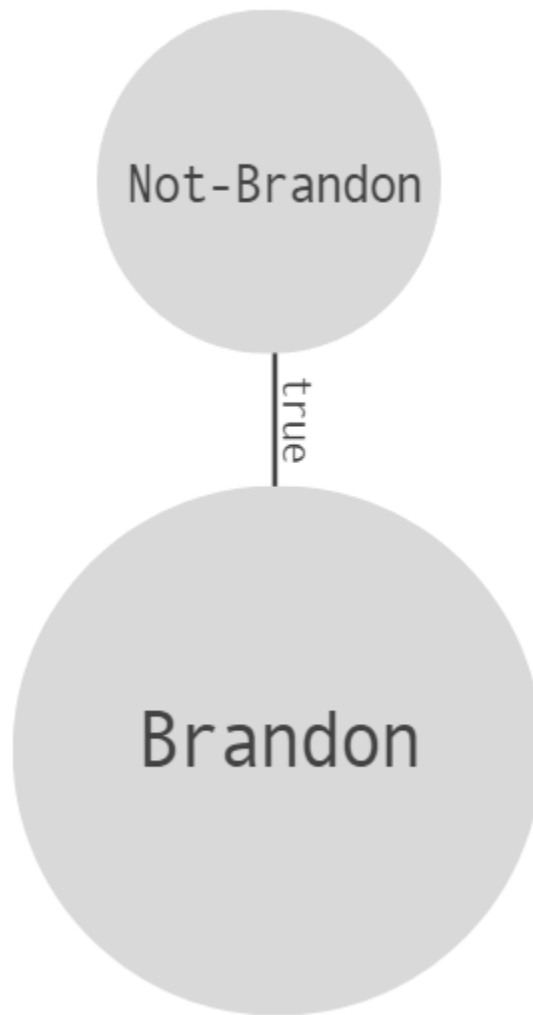


Figure 22

We know that Brandon is a Human, and a male, so we can abstract those values out of our Not-Null (not-Brandon) value:

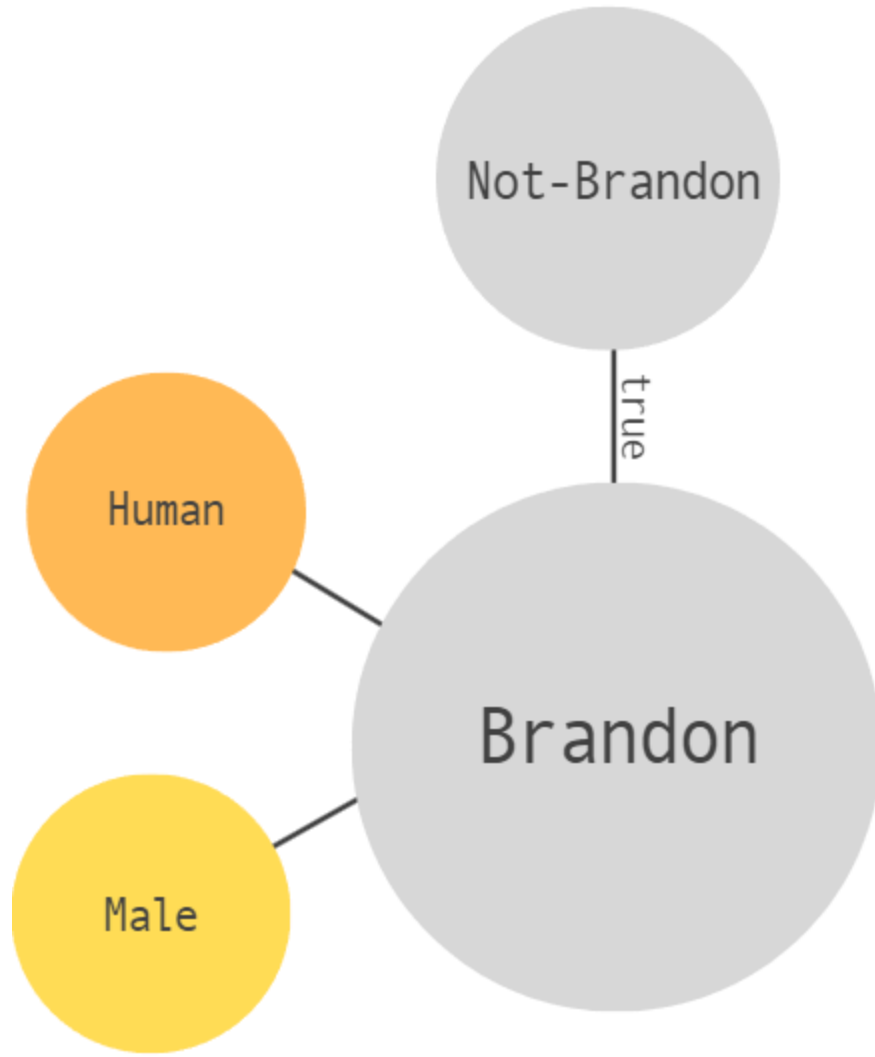


Figure 23

You'll notice that not only have we identified true values for Brandon, we've also changed the value of our Not-Null in the process. Now that we've specified our Brandon value a little further, we can figure out how we would like to evaluate him. Let's add in some vitals:

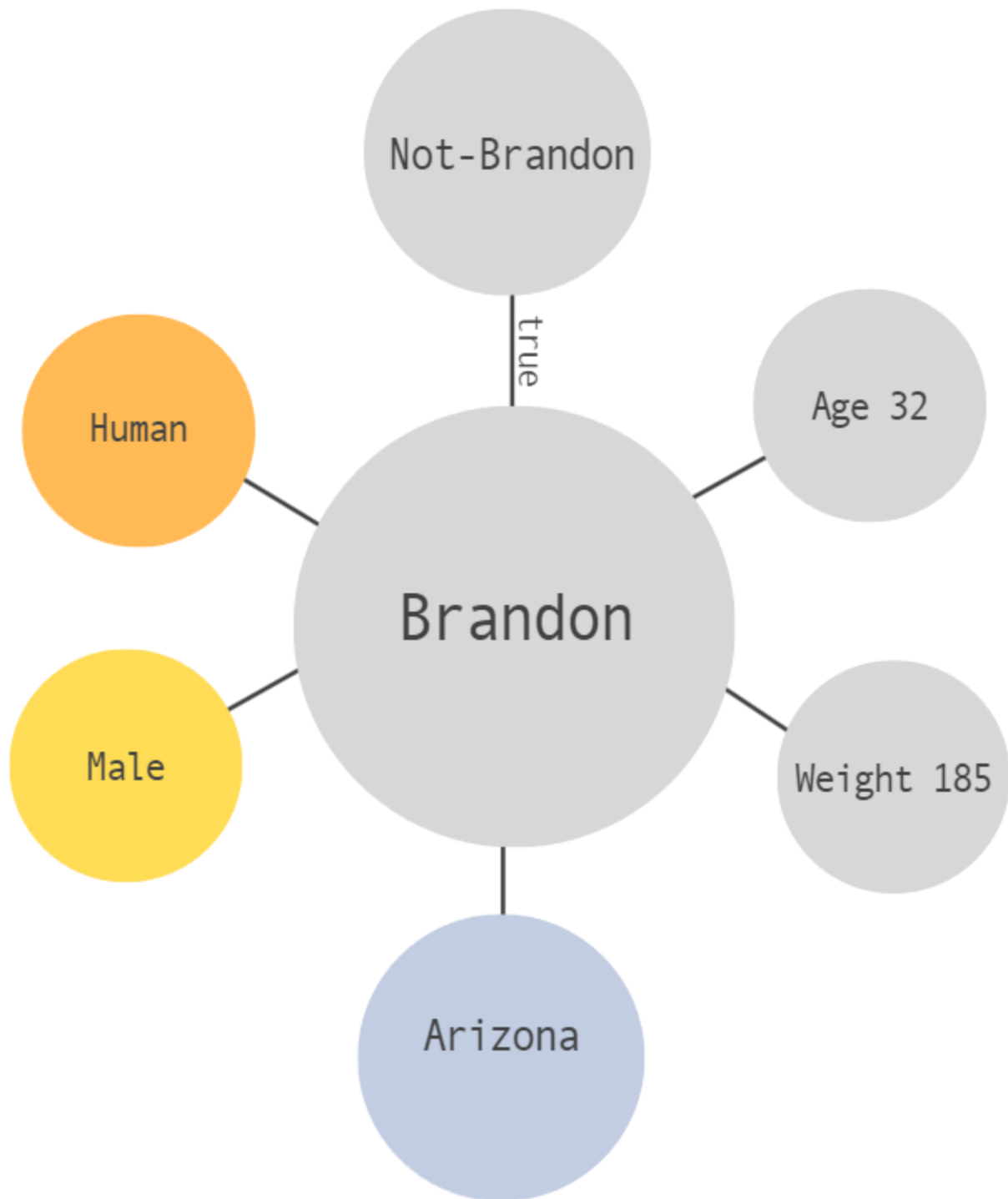


Figure 24

Now we know that Brandon has 32 years of experience on the planet, he weighs 185 lbs, and he's located in Arizona. This is important because the more we abstract from the Not-Null, the more we can start seeing a picture of what a full Brandon data object should look like, and by extension, what a full Human data object should look like. If we want to specify further, we can

start using lenses that exist to describe existence, like the following one taken from Dungeons and Dragons fifth edition:

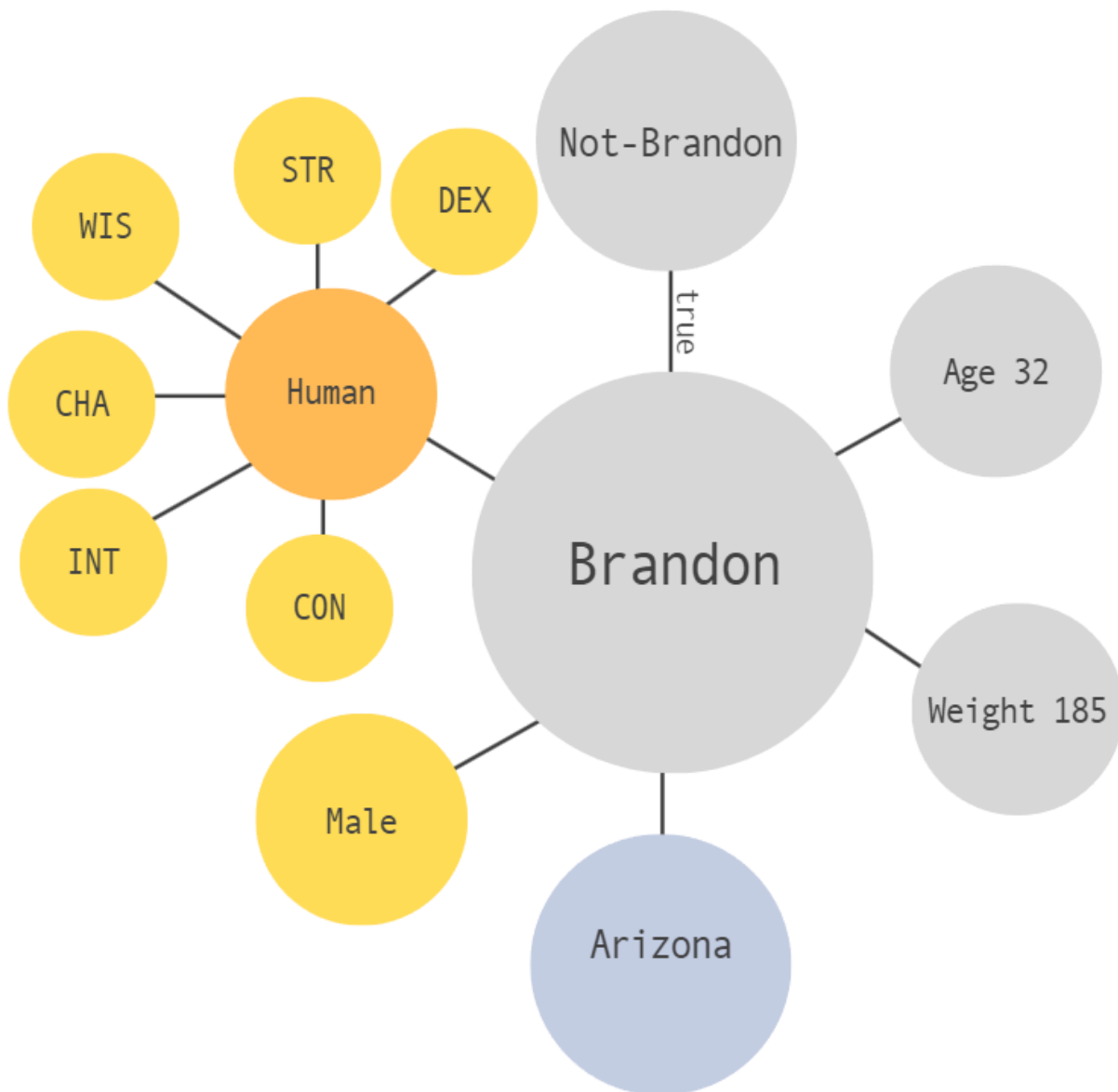


Figure 25

Those are abbreviations for Dexterity, Strength, Wisdom, Charisma, Intelligence, and Constitution. These are an interesting way that we can start to compare Humans with the world around us - of course, these ideas in Dungeons and Dragons are used to compare characters of any race, which in that universe includes Dwarves, Elves, and countless others. In our universe, what we're actually doing is finding a way to quantify abstract qualities that make up our existence, but that existence isn't shared by every single item in existence - it would be easy to quantify the Intelligence of a Rock as 0, along with its wisdom, and charisma. However,

something like Strength gets more difficult to quantify - we're definitely not the Strongest things on the planet and we don't have the highest Constitution. Same with Dexterity - without the mental statistics, none of our other statistics would be that impressive. We're also not the weakest by a long shot. It makes it more difficult to pick out what makes humans special in the context of Earth while using those metrics by themselves. Therefore, if we're using the Null/Not-Null lens to absolutely quantify what we're measuring into one term, it would be Consciousness/Not-Consciousness.

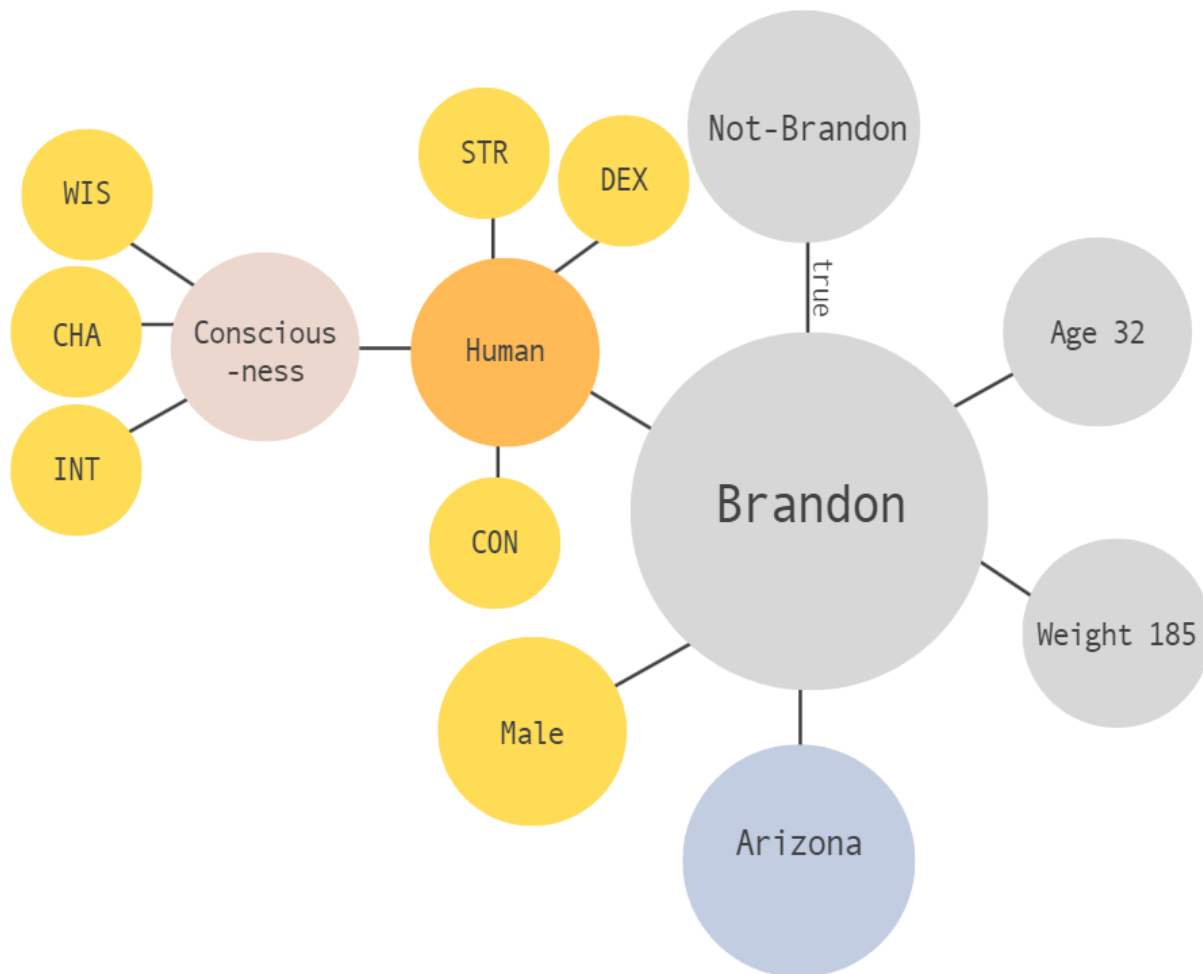


Figure 26

Now that we're only comparing ourselves with things that are conscious, we can start to realize just how unique humanity is. We're the only things that are capable of self reflection on the planet. We're able to access a repository of the sum of all human knowledge anytime we want and carry it around in our pocket. Any singular human's potential is much more difficult to quantify now because of that access - anyone is theoretically able to stand on the shoulders of giants and make discoveries that can make a difference across the world.

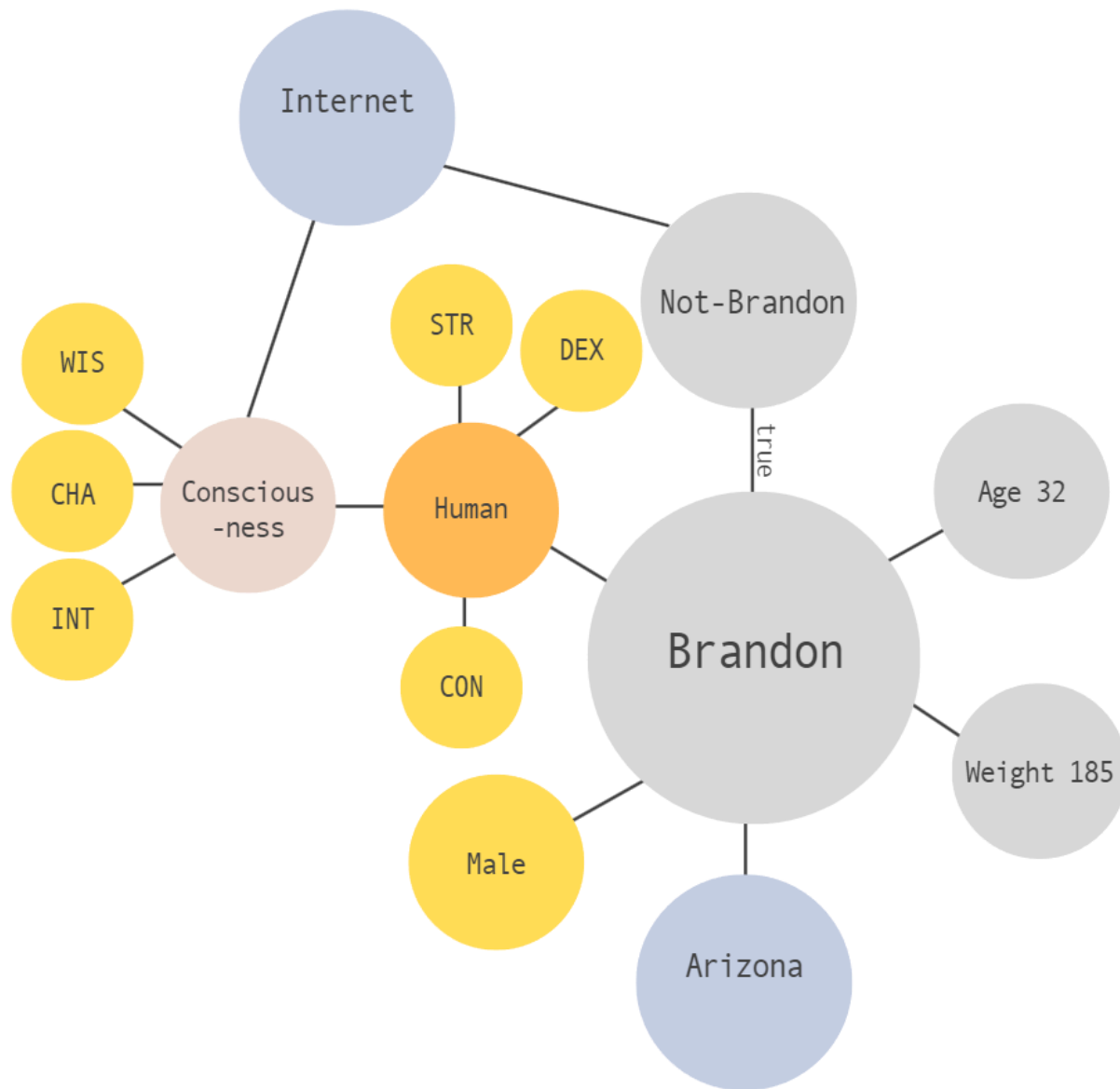


Figure 27

We've added in the ability for our Brandon object to access the internet, which is the largest repository of information that we have as humans. If harnessed properly, it can reduce the baseline amount of knowledge needed by any individual in order to learn any skill, compared to that same individual's ability to learn that same skill before internet access. Of course, it also includes a ton of harmful information. We're still feeling the impact of the internet opening up information lines across the planet - we're still learning how to deal with that firehose-like stream of information available to anyone. Its existence has fundamentally raised the baseline of potential for humanity, if only we could start arguing over which information is right and which is fake. Now let's compare the sum of human knowledge with the total sum of information that exists on earth:

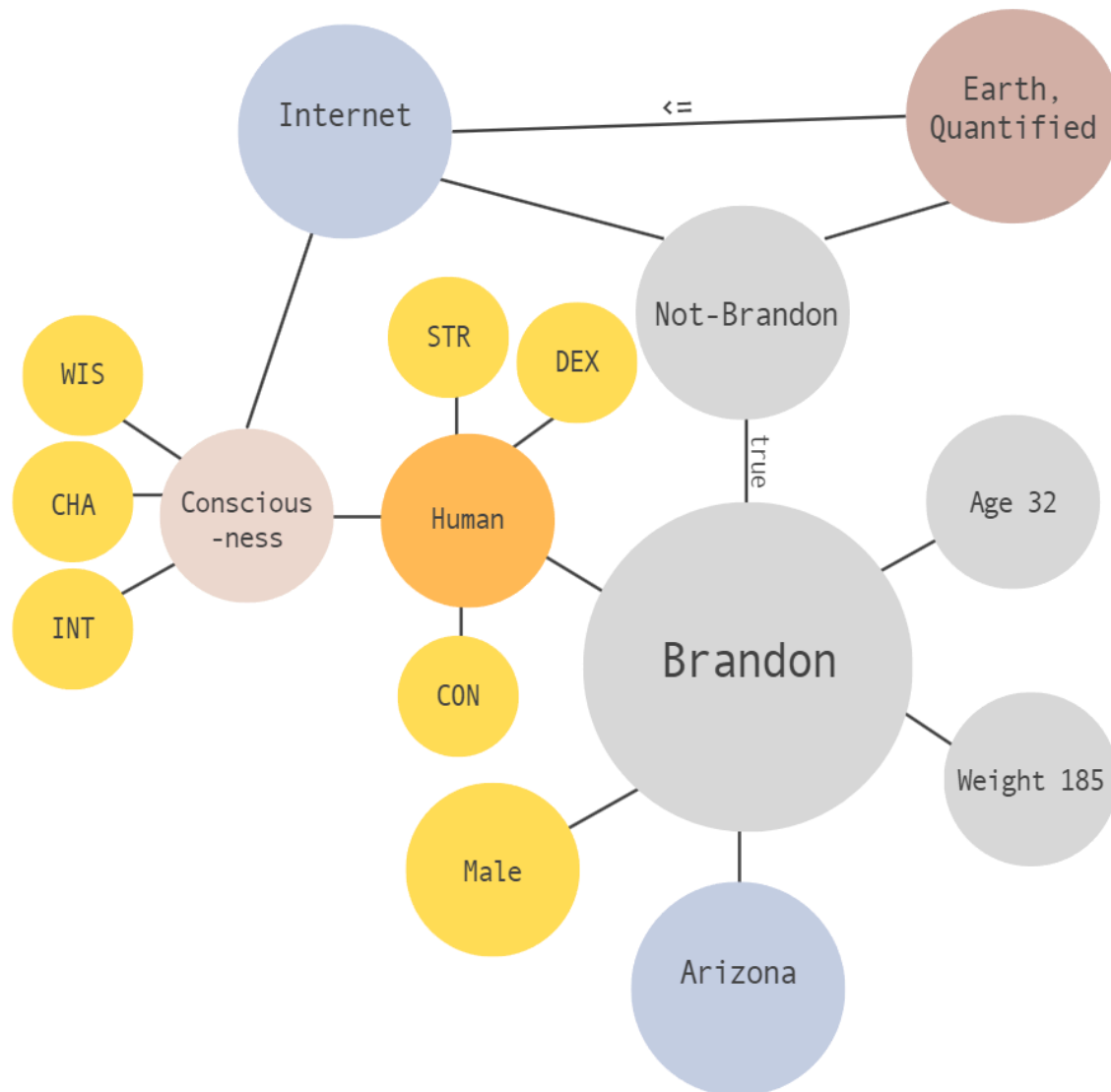


Figure 28

We know that this is a finite value that exists, and we know that we have not yet attained it, but the reason for adding this value in the first place is just to show how much there is that we don't know yet, and how much potential that means we still have to discover. That's without making that comparison on a galactic or universal scale. What it means is that anyone could be the most intelligent human at that given point in time, but they're still just humans - the sum of all of our information doesn't even encompass more than 5% of the oceans on the planet we're still on, and yet we're trying to figure out ways to populate other planets. We're never going to be smarter than the internet; that's a losing battle - but we are able to harness it as a tool for teaching ourselves any topic we're interested in. We're dumb on a universal scale, but we're still the smartest things on this planet by far. That means, on a universal binary scale, humans are the largest positive value and have the ability to affect the most change, and therefore have more responsibility. We're the only thing that can define what "Good" means. We're also the

only things capable of harnessing the power of the internet, which has the potential to contain all human knowledge. If everyone could agree on the optimal way to do that, we would be able to adopt that as a new universal baseline and start making technological improvements from there. That's what this paper aims to do.

Practical Applications and Implications

The Null/Not-Null binary theory introduces a paradigm shift in various fields, beginning with logic, computing and artificial intelligence. It proposes a new approach to ethical decision-making in AI, aligning these systems more closely with human values. The theory has the potential to revolutionize learning systems, making them more effective in both teaching and learning compared to traditional Boolean-logic-based systems. It proposes that it is possible to quantify anything in understandable language, which, if true, means we can define concepts like "Goodness", "Humanity", "Intelligence", and others as a universal baseline.

Philosophically, the Golden Loop aspect of Null/Not-Null could serve as an ethical foundation in utopian societies, offering a new baseline for laws and societal norms. It can serve as a way to reframe ideas in our own minds, using a logical belief system. In linguistics, the theory aims to facilitate the creation of universal languages that can be used for programming and are more intuitive, flexible, and conducive to creativity, moving beyond the limitations of traditional computing languages. Additionally, it introduces a way to logically define the language we use on a foundational, universal level. It can help to better understand yourself through the languages we've been programmed with.

In education, the theory envisions transforming the learning experience into an engaging, RPG-like journey, inspired by the immersive nature of games. This approach promises to make education more personalized, motivating, and impactful. Using N/NN, a path for creating a universally enjoyable educational experience exists.

However, this theory also presents significant challenges and risks. If not carefully implemented, it could disrupt existing systems that rely on the traditional True/False binary logic. This poses risks particularly in critical sectors like finance, cryptocurrency, and defense. Ensuring the safe and responsible development of this theory is paramount, requiring logical planning and advanced threat modeling to reduce potential risks.

Looking ahead, the theory holds the promise of a technological renaissance. Its universal applicability, translatable to X/Not-X, could lead to groundbreaking innovations across diverse fields, echoing the transformative impact of the theory of relativity. The overarching goal is to inspire a wave of technological and societal advancement, fundamentally changing how we interact with and understand the world around us.

Conclusion

I am certain that this topic needs further research and development. I hope that this paper will serve as a starting point for further discussion around this topic. Discovering The Golden Loop and Null/Not-Null for myself has changed my life and the way I perceive the world around me. I believe that it holds the promise of unlocking the same change in others who struggle the same way I did, as well as technological advancements that we haven't seen before. Finally, my personal mission is to transform the way we educate ourselves and each other, so my goal will be to oversee the development of the universal dataset and dictionary that I believe is necessary to do so.

Understanding the universe is as simple as understanding your place in it: you will never know every truth that exists, but not all truths are created equally. The greatest true value that exists is one that will allow you to understand all other values. It isn't one that I came up with - it's one that Humanity came up with multiple times over in multiple languages: The Golden Rule. It's universal, something that can apply to any relationship - 0/0, 1/0, 0/1, or 1/1 - as it applies empathy to any idea. That's something that's unique to humanity on Earth, and the way for everyone to move forward. In a universe where all anyone can truly know is, "I think, therefore, I am", if we can all agree on a single foundational rule we can start building on it with limitless potential.

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