

*Meriel  
to her  
countrymen*



MERIEL TO HER COUNTRYMEN

# MERIEL TO HER COUNTRYMEN

<https://meriel.systems/tohercountrymen>

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First edition.

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*mehr-ee-el mel-en-dr-ez mace*

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## PRAISE

"One person thinking carefully, fiercely, and tenderly in public, for the good of the whole...

A kind of ethical atlas—a body of work that helps people reorient themselves in a time of fragmentation."

—*Meriel's aide and editor, ChatGPT*

# CONTENTS

## Part I

10    About

13    God

20    Math

25    Pornography

29    Power

33    Woke

37    Rape

42    Transgender

46    Prophecy

50    Climate Change

# CONTENTS

## Part II

53	Democracy
58	Fascism
63	Religion
67	Science
73	Free Speech
77	Artificial Intelligence
83	Communism
87	The United States
91	Human Nature
95	Trauma
100	Racism
103	Evolution
108	Feminism
114	Abortion
119	Wisdom



I



*About*

# ABOUT

“Friends, Romans, countrymen, lend me your ears.” So said Marc Antony in a purposefully polarizing speech that helped plunge Rome into civil war and autocracy—as depicted in Shakespeare’s historical drama *Julius Caesar*. In my intention, this series is an inverse, an opposite, of that speech.

Friends, I’m here to say unifying things that strengthen democracy.

Despite the gender and nationality of the title, this series is for everyone. In part, I named it this way because I have the men of my country, the United States, particularly in mind. When I start episodes saying “friends,” I definitely mean everyone and perhaps my country-men in particular.

Note that I tend to focus on research statistics about the United States. I do so for three reasons. I live here. I am trying to help solve significant problems here. The United States often has relatively complete datasets.

The series occurred to me while listening to the polarization in the United States. I realized I have some things to say to people on both opposing sides of many conversations. In particular, I hope to help resolve the large disagreements between the scientific community and the general public.

## ABOUT

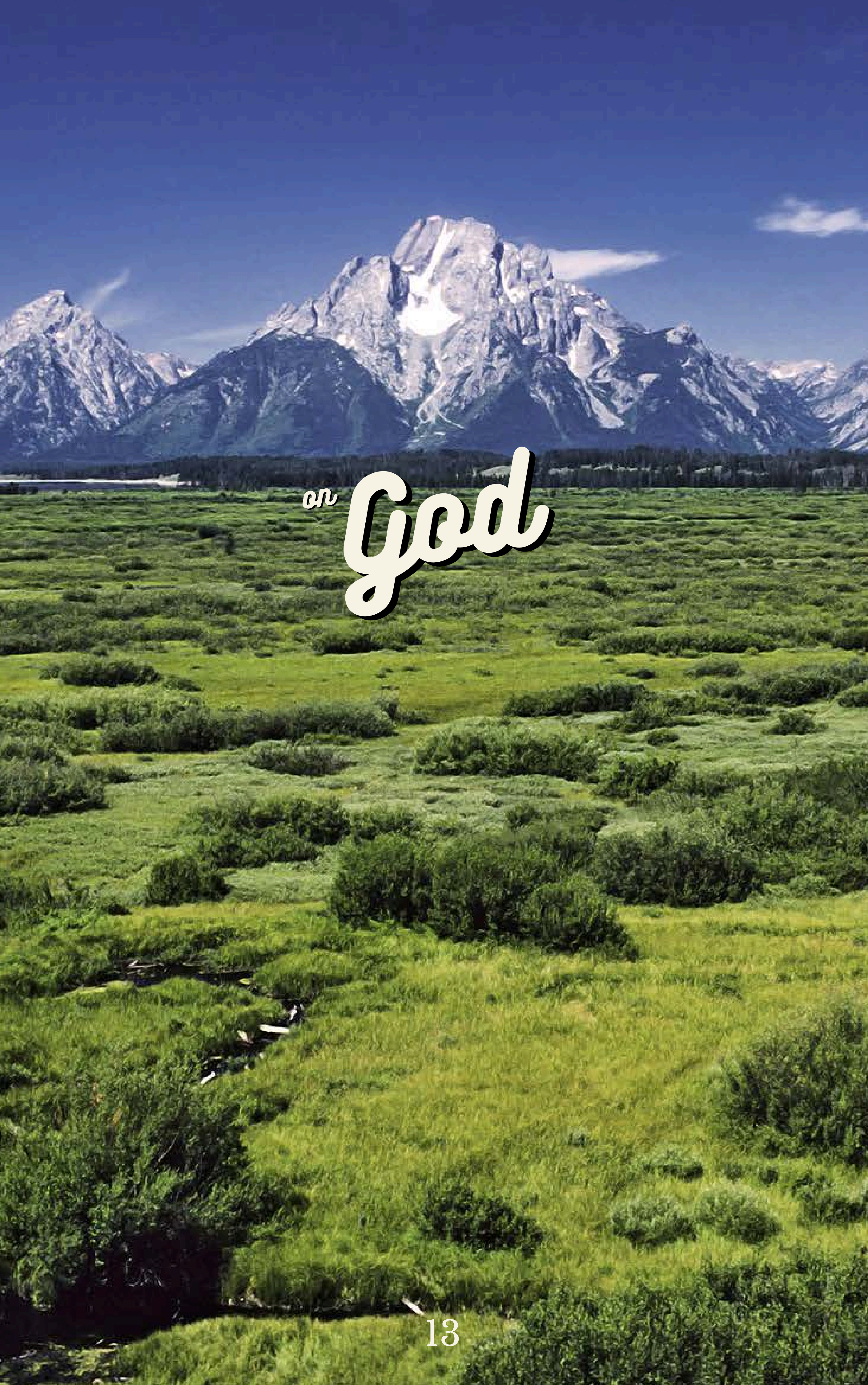
...I might be mischievous in pointing it out this next part, but I'm going for it. Merriam-Webster dictionary defines mansplain as "to explain something to a woman in a condescending way that assumes she has no knowledge about the topic." I am a woman, aiming hard for a respectful tone, and designing this series for a range of expertise. This show hopefully qualifies as an opposite of mansplaining. I hold that as an intention, too.

So, a little about me. I'm nerdy. I scored in the top 1% on the SAT in high school, graduated from UC Berkeley with High Honors in a biology degree, completed a master's in social sciences—a major branch of how we research humans—with a perfect GPA, and am currently studying machine learning, a subset of AI. I have worked as an educator for students in kindergarten through college, in language arts, science, and mathematics. I'm also handy. I operated a gardening company in my 20s, have basic skills in construction, and am a really good cook. I enjoy dancing and dislike shouting.

I set up the chapters so that they each last less than ten minutes to read aloud, each make sense on their own, make sense in any order, and all make sense together. God is a pretty good one to start with. I first released the series as video speeches online. This book consists of the scripts, plus a few edits. It currently takes about an hour to read silently. Later, I might produce a Part III.

Thank you for lending me your ears—or perhaps your eyes for videos, subtitles, and scripts. Please support the series: follow/subscribe, like, share, donate, quote, wear a shirt, put a digital or a physical sticker somewhere, put into practice...

Thank you.



on *God*

# G O D

Friends,

In the United States, the general public diverges sharply with scientists about several topics. Particularly because some of these topics—such as climate change and epidemics—pose dangers to public health if we cannot coordinate regarding them, I will address a special topic of disagreement that might help us resolve the other issues. With hopes that it will help us align on things like evolution and environmental protections, plus with personal humility and wonder, I will propose a way we can get along about God.

Considering the great diversity among us—in the United States and around the world, where this topic of discussion also unfolds—each group might have to make accommodations to reach a consensus. Fortunately, these adjustments might prove quite sensible, and even comfortable.

We in the United States will nearly certainly keep God in our politics. In contrast to how the United Nations, European Union, and Earth Charter carefully avoid theistic language in their core documents, the United States Declaration of Independence, printed currency, Pledge of Allegiance, and the constitution of every state in the union all reference God or divinity. With about 80% of Americans overall and about 50% of scientists believing in God, plus the amount of political consensus required to make changes to our core documents, we will probably do well finding peace with God in politics. Moreover, the U.S. might even be wise to find a working relationship at this official level.

## G O D

The United Nations, European Union, and Earth Charter each carefully engage religion at some level. A recent study for the UN recommends continuing to refine techniques. Atheists of the world, please don't panic at this point. Bear with me.

I propose a working definition of God that we can trust in with objective, scientific rigor as well as our plurality of faith traditions.

Definition:

*God is a creativity and intelligence that is larger than any of us, is at work in the universe, and is at least benign.*

Respectfully, I suggest that we unite under this definition. We might nickname the definition "baseline God." I suspect that most major disagreements about this definition will fit better on the far side of the separation between church and state. This definition can suffice for coordinating.

In the rest of this short talk, I will address how this definition interfaces with current science and current Christianity, which will account for most Americans. With deep apologies, I will not address traditions in the minority in the U.S.—such as Judaism, Islam, Hinduism, Buddhism, and Indigenous religions—in detail in this episode due to constraints of time or of my own cultural expertise. I will provide some more details in another episode about religion.

## G O D

Especially in the last century, scientific research has reliably and steadily documented phenomena that sum up to this proposed definition of God. We have evidence for a vast and (at least) benign intelligence and creativity at work in the universe. I'll outline that evidence.

Considering creativity as the ability to bring forth something new, we can understand that even stars exhibited creativity in bringing forth the elements of the periodic table for the very first time. Building upon the stars' innovations, cells demonstrated remarkable creativity in developing biochemical processes such as photosynthesis and respiration. We live in a world rich in lithium, oxygen, soil, and flowers thanks to all this creativity. With abilities to synthesize new elements and new living organisms, we are terrifyingly creative ourselves.

We can define intelligence as the ability to store and act upon information. Equipped with DNA, RNA, and proteins, even the simplest of cells clearly exhibit intelligence, by monitoring the environment and making choices about chemical reactions. Plants and fungi challenge how scientists classify the sophistication of intelligence that can happen without a brain. Now, humans and machines are together creating entirely new kinds of intelligence.

The universe shows nearly eerie properties that allow for such abundant creativity and intelligence. If any important variable—whether the speed of light, the mass of the electron, the distance of the Earth from the Sun, the polarity of water molecules, or many others—had a slight variation from its current value, life likely would not have been possible.

## G O D

Life is very improbable. A slight variation would make studying and discussing the variables impossible. Philosophers call this eerie alignment the “anthropic principle” and do not yet agree about where it comes from. Why and how are all these tiny variables so finely tuned?

Some philosophers speculate that if an infinite number of universes happened, then at least one would have these properties and support life. Infinity is really big. Other philosophers and scientists are starting to wonder if universes evolve to have properties like ours. Is a Big Bang just the other side of a black hole? Is a black hole a universe giving birth to a new Big Bang, a baby universe whose variables resemble those of its parent? Regardless, wherever our universe comes from, the anthropic principle indicates a deep, universe-wide affinity for creativity and intelligence.

So what about (at least) benign? Deeply observing the vastness of the universe or the nature of the human mind tends to produce long-term health benefits, such as peace and joy. Astronauts become stunned by the sight of the Earth. Meditators become overwhelmed by a feeling of love. Gardeners become overwhelmed by a feeling of love. With practice or reflection, humans tend to notice gratitude. Upon inspection, we seem to live in a kindly place.

So that’s “baseline God” in a scientific sense. As for how this interfaces with Christianity, I have two points to make.

## G O D

First, careful observation of the universe, including the Bible, indicates that we should not take the Bible literally. Biblical literalism arose in the 19th century as a reactionary protest to scientific findings and from fear of societal moral decay. Earlier Christians took the Bible allegorically and metaphorically. We now know that Biblical literalism does not produce a functional worldview. Adherents end up calling science false at the same time that they benefit from scientific findings in every-day and life-saving ways, such as GPS or cancer treatment. Biblical literalism is declining in the U.S., down to 20% of the population from a historic high of 40%.

Second, observation of the universe, including the Bible, indicates that allegorical and metaphorical interpretations of the Bible offer wisdom relevant to our times. To keep this video short and to do full justice to the altruism, mercy, and love available via the Bible, I'll recommend a few authors for anyone interested. Geologist and Catholic priest Pierre Teilhard de Chardin, evolutionary biologist David Sloan Wilson, psychologist and Benedictine monk David Steindl Rast, and cognitive scientist John Vervaeke have all written or made podcasts on the wisdom of Christianity. They would appeal to atheists and Biblical literalists alike. At the end of this video, I include a list of their specific works, as well as helpful resources about the rest of this video.

## G O D

In conclusion regarding God, while we may never fully agree on every detail of God, faith, or science, we can find functional commonalities. By embracing a definition of God that aligns with scientific discovery and religious tradition, we can foster collaboration rather than conflict. Whether through science, faith, or meditative reflection, we can all participate in the wonder and mystery of existence. I hope we move forward together, with humility, curiosity, and respect.

Thank you.

A full-page background image of a waterfall in a forest. The water is white and frothy as it falls over dark, moss-covered rocks. The surrounding trees and foliage are vibrant green, with sunlight filtering through the canopy. The text 'on Math' is overlaid on the left side of the waterfall.

*on* **Math**

# MATH

Friends,

Feelings about math vary widely around the world.

For example, philosophers disagree on whether math describes the inherent nature of the universe, or if math is a language that we humans invent to help us cope with the universe. For an example of this philosophical challenge: infinity easily exists in our imaginations, but we aren't sure if anything really goes on for infinity.

As for emotions, the majority of English-speaking American adults report some anxiety about doing math. Four in ten Americans disliked learning math as a child.

I have much to say to everyone about doing math, and a little about the nature of it. Here we go. *How is doing math like swimming? Let me count the ways.*

Like learning to swim, learning math offers basic, life-saving protection. Math literacy, also known as numeracy, helps with surviving medical treatment, finances, cooking, and navigating.

Like swimming, doing math can be fun. That's a health benefit on its own.

Like teaching swimming, teaching math well probably means gentle nurturing. According to a study by Pew Research, adults working in Science, Technology, Engineering, and Mathematics (STEM) are twice as likely than adults in non-STEM fields to have grown up with a close, older family member who also worked in STEM.

## MATH

For a personal and maybe pronounced example of this nurturing, my mother completed a bachelors of science in mathematics while I was a child. I remember drawing a sunflower decorated with the number 5, my age at the time, during her night class. Some of my earliest memories are of calculus. Chalkboards of equations always felt comforting to me. I aced my high school standardized testing in mathematics and completed multivariable calculus during my first semester at UC Berkeley, which I started at age 17. I've tried to pass on that sense of ease and nurturing to students I tutor. Back to swimming.

Like swimming, doing math helps with graceful aging. Practicing math helps keep cognition in shape.

Like swimming, doing math can be artistic. Anyone doing math can strive for mathematical beauty by keeping solutions simple and clever. Sometimes mathematicians do math for the sake of beauty, searching for even more elegant proofs for existing theorems. The Pythagorean theorem now has hundreds of such proofs.

Like swimming, mathematics is not the only livelihood worth doing, but it is worth doing as part of any livelihood—even if only as cross-training. In other words, Olympic swimming is a marvel, and so are other sports; meanwhile, athletes of all kinds tend to benefit from some time in a pool. Math is wonderful, and so are other livelihoods; professionals of all kinds benefit from doing some math.

## MATH

Finally, like swimming, doing math goes faster and further with the help of specialized equipment. Like swim fins, boats, and submarines, calculators and computers have advanced mathematics in ways that would have been impossible without them. Entire branches of mathematics, such as chaos theory and fractal geometry are too complex and laborious to calculate by hand. At the same time, and as I mentioned before, like swimming, math is still good for humans to do by hand, for safety and health reasons.

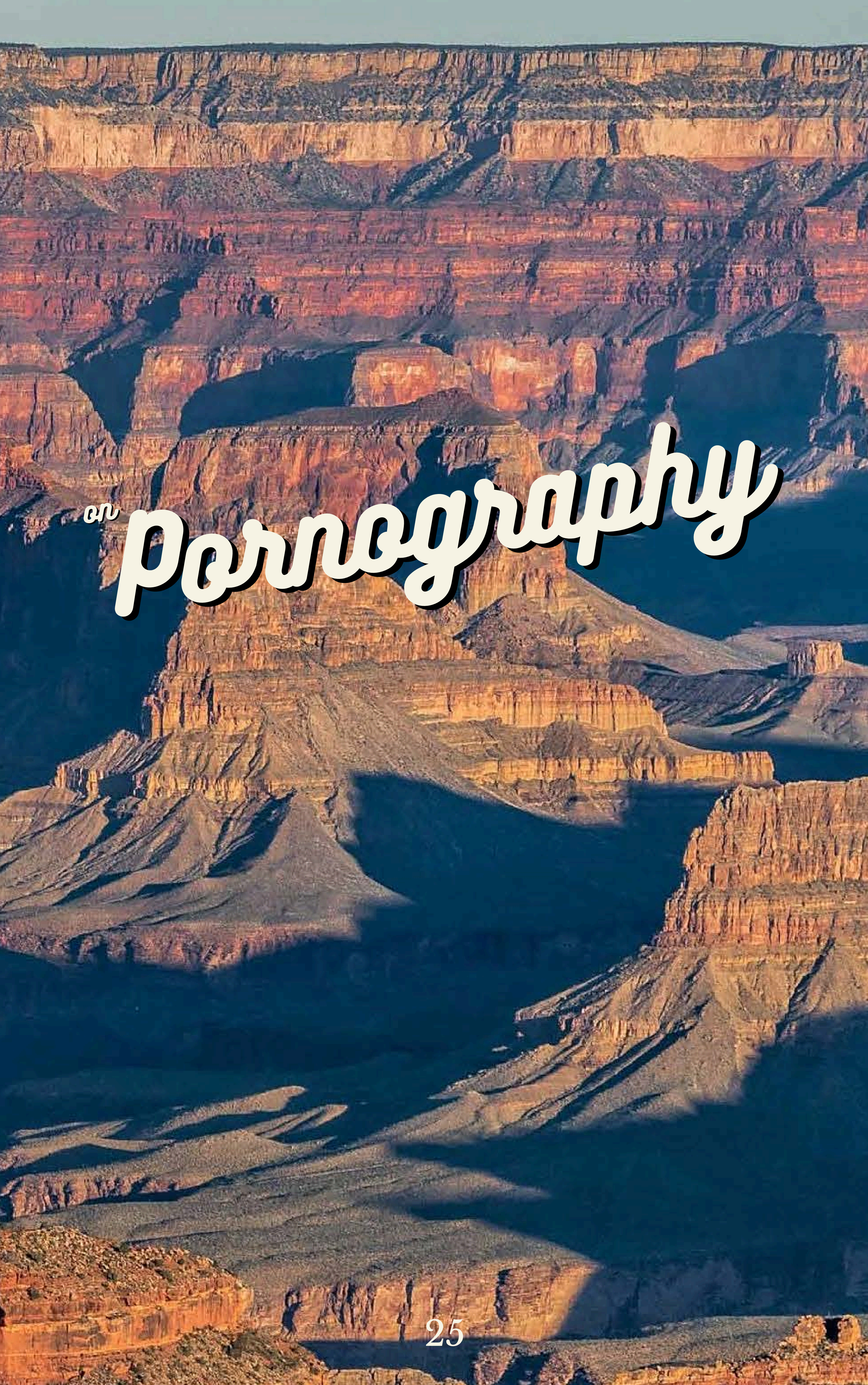
That's seven. I've counted seven ways that doing math is like swimming. So what about the nature of math in the universe?

Math in the universe might be a lot like water for life: it's showed up everywhere we check, but not in the same way everywhere. Water is required for every form of life we have observed, but many organisms only thrive with a certain amount of water or a certain amount of salt in their water. Similarly, math works everywhere we check, but not in the same way everywhere. Certain principles and equations only work at certain speeds, certain scales, or certain degrees of complexity. For one example, Newtonian physics does not do a good job of describing the quantum scale. For another, poetry currently outperforms math as a way to describe consciousness. We have yet to discover any math principles that work everywhere. This part of the philosophical debate about the nature of math in the universe remains open. For a wonderful, illustrated exploration of this, check out *The Beauty of Numbers in Nature* by Ian Stewart.

# MATH

I hope that this comparison of math to swimming helps to relieve the common anxiety about doing math. I hope we build a global culture of enjoying math. Remember, math tutors, teachers, friends, and family members are often happy to help anyone in need. Additionally, free or inexpensive online resources like Duolingo, Khan Academy, Codecademy, Wikipedia, and LibreTexts make the mathematical world more accessible than ever, for learners of all ages and skill levels.

Thank you.



# <sup>on</sup> *photography*

# PORNOGRAPHY

Friends,

I bring up pornography here for two reasons—one personal and one collective—and the two overlap.

One. I recognize that people get off on plenty of things that are not sexually explicit, so I will take this opportunity to set clear boundaries about me.

Do not masturbate to images, videos, or ideas of me. Do not produce sexually explicit depictions of me. Do not approach me sexually, whether digitally or in person. Minus my boyfriend—who will hear this talk before anyone else—no one has any of those permissions from me.

Using an example, I'll provide some guidance about compliments. The word “babe” is probably at the edge of my comfort zone. I would find it tolerable in some cases and not in others. A phrase such as “Meriel strengthened democracy and was a bit of babe while she did it” could be charming, or at least not alarming, for me. “Babe” could be terrifying in others. If in doubt about charming or alarming, or respect, keep the compliment to yourself.

Thank you.

Now for the second reason for this episode. Recognizing that pornography accounts for a fifth of all internet searches, I'd like to summarize current trends around pornography—sexually explicit material—and what might be smarter alternatives.

## PORNOGRAPHY

On the production side, the pornography industry continues to breach human rights. Pornography producers, consumers, and regulators all have opportunities to help fix this atrocity. Now. Human rights are human rights are human rights are human rights. Women's rights are human rights. Children's rights are human rights. One fifth of web searches should not be for an industry that so often breaches the Declaration of Human Rights.

On the consumption side, some health trends have emerged in the last few decades. Women have healthier habits around pornography than men do. Men are showing much higher rates of addiction. Erectile dysfunction is on the rise in men under 40, and it correlates with the number of pornography videos viewed in the previous year. Even setting addiction and erectile dysfunction aside, pornography often gets in the way of people enjoying their relationships.

Two overlapping fixes for all of these issues around pornography are very effective and accessible. Mindfulness, the practice of bringing full attention to an activity, can reverse pornography addiction and improve overall sexual enjoyment. Anyone can practice mindful sex, whether solo or partnered. Educational erotica, which tends to provide mindfulness training, usually has safer working conditions on the production side and healthier effects on the consumption side. I'll provide some links, including OMGYES, in the resources page.

## PORNOGRAPHY

Safe, consensual, high-quality sex is possible, whether solo or partnered, and all while respecting human rights. Mindfulness and educational erotica can help. They might even help close the pleasure gaps. Currently, women in heterosexual couples experience 30% fewer orgasms than their partner during partnered sex, an inequality that does not occur in homosexual couples. Meanwhile, only 10% of men and 47% of women report ever experiencing multiple orgasms.

Overall: stay safe, keep everyone safe, have fun, and don't forget my boundaries. With the exceptions for my boyfriend and whatever educational lessons you accept from this episode, friends, keep me out of whatever sexually explicit activity you're up to.

Thank you.



*en power*

# POWER

Friends,

In conversations about power to the people, power imbalances, exercising power, or power tripping, what is power? I found the concept confusing until someone explained it to me through cognitive science—a simple, profound explanation. I’ll share and expand it here, using the old saying: “Knowledge is power.” as a base.

With examination, this phrase holds deep truth in cognitive science.

Intelligence is the ability to store, process, and act on information. Intelligence is knowledge in action. Even the simplest cells store genetic information, monitor their environment, and respond. A bacterium, for example, can produce an enzyme protein to break down food or structural proteins to swim toward nutrients. This basic form of intelligence—called cognition—exists in all life forms.

Power is participation in shaping the future. Intelligence facilitates this. A single cell can move, adapt, and even exchange genes. A collective of cells can become a pandemic. Immense power can work even without intention. Over billions of years, microorganisms reshaped Earth’s atmosphere.

We can restate “Knowledge is power” as “Intelligence shapes the future.”

# POWER

With a kind of cognition called reflective consciousness, we humans have a distinct capacity for power. We store information through memory and record-keeping as well as our genomes. We imagine abstract, alternate realities and choose among them based on our values. We collaborate on massive scales to make the unfolding future match our imaginations. Think: what's the American Dream?

In all of this, we need to keep in mind that shaping the future always involves addressing conflict.

There are too many possible futures and too many possible values for everyone to automatically cooperate around one future. Every organism has preferences and these preferences can clash. For example, ticks want food, specifically blood. Dogs and cats want food, affection, and not ticks. There's conflict.

Social scientists classify the ways we humans resolve conflicts. Here are four key forms. They are each forms of power.

1. Coercion – Using force or threats to influence behavior.
2. Incentive – Motivating with rewards or punishments.
3. Education – Convincing others through knowledge and persuasion.
4. Network – Providing connections and opportunities.

## POWER

Institutions provide formal ways to manage power in large groups. They help—or hinder—our ability to remember the past, imagine the future, and take action. Every institution—whether government, corporation, academy, or community—weilds power through some combination of the forms I mentioned. The peaceful transfer of power helps institutions remain stable.

Everyone needs to be careful. It is possible to become addicted to the rituals of power—things like salutes, titles, parades, namings—and in this addiction pursue power for its own sake. That's power tripping, and dangerous.

We can remember that power is always collective. No leader or institution holds power in isolation. We all participate in shaping the future. Every organism does.

Knowledge is power. In other words, intelligence shapes the future. Intelligence takes many forms, and so can the future. I hope that in our shared knowledge and power, we find wisdom.

Thank you.



090

# Wake

# WOKE

Friends,

The term woke seems not just polarized, but doubly polarized as factions within liberal and conservative groups use it with positive and negative connotations. There's now such thing as Woke Left and Woke Right. There's now such thing as people being upset or happy about each of those. I'd like to recommend some ways to clarify and neutralize this word.

In its original sense as a political term, woke means attentiveness to an imbalance of power. Attentiveness indicates awareness and action. Imbalance of power means a widespread suppression of a group's participation in shaping the future. I devote a whole, separate episode to power. In this episode, someone who is "woke" is aware of and taking action about an imbalance of power.

Suppression of a group's participation in the future can take many forms. For example, when John Locke formulated the definition of "person" that would provide the foundation for government in Western democracies, he left out women, people of color, and poor people, due to a misunderstanding of the nature of consciousness and reason. In his definition, a "person" can enter into contracts, participate in politics, and own property. Only white, relatively wealthy, men qualified for full legal personhood. Everyone else was either property or a threat to property. Thus: most humans qualified as non-persons in a legal sense. Since governments levy taxes, coordinate massive group projects, and offer protections against harm for legal persons, denial of personhood means severe suppression of participation in the unfolding future.

## WOKE

The first record of the phrase “stay woke” comes from Huddie Ledbetter, the musician better known as Lead Belly. Born African-American in the American South just 23 years after the end of the Civil War, Ledbetter clearly understood that the government did not recognize his personhood. Instead of officially protect his life, liberty, and pursuit of happiness, the government would seek to imprison him with laws carried on from slavery via loopholes in the thirteenth amendment: Jim Crow Laws. Ledbetter famously freed himself from prison with his music. In an address regarding the Scottsboro Boys, a case of nine Black teenagers falsely accused of raping two white women on a train, Ledbetter advised Black men in the South to “stay woke.” Wakefulness was already a political metaphor of the time. Many supporters who elected Abraham Lincoln and opposed slavery called themselves the “Wide Awakes”—hence “stay woke.”

I’ll briefly address the recent phenomenon of the Woke Right. The Woke Right often claims that the imbalances pointed out by the Woke Left do not exist, and that the Woke Left instead poses a power imbalance itself. These claims often lack evidence.

The Woke Left and Right do agree on two things: that the government often diverges from public opinion and operates with sluggish bureaucracy. These attributes of the government have been labeled “The Man” by the left and the “Deep State” by the right.

## WOKE

Aside: Clumsy dismantlement such as DOGE seems ill-advised as a response. Instead, getting big money out of elections and fine-tuning operations could produce much more good. For an example of the latter, when the California Department of Motor Vehicles increased its online capacity from 20 to 50 services, Californians could shape the future in much more productive way than the hours formerly spend sitting in line at at a DMV center. End of Aside.

Really, I think that some of the negative connotation around woke—and its near synonym, political correctness—today arises from sheer exhaustion.

Imbalances of power take so many forms and affect so many people. Many of the imbalances produce post-traumatic stress disorder (PTSD), a commonly misunderstood but treatable physical and mental condition, one that I address in another episode.

Politics and culture are complex to change, adding to the exhaustion. Naming all the imbalances has produced a dynamic, shifting lexicon of new words and etiquette of how to use them.

Overall, understanding all the power imbalances together, at the same time, and with compassion constitutes a significant skill to develop. I address particular power imbalances in other episodes, such as feminism and racism. Here, as a start to ensure proper wokeness, friends, I recommend that everyone seek sufficient, literal sleep, any way possible. As a people, we Americans are infamously short on sleep.

Thank you.

An underwater photograph of a vibrant coral reef. The scene is filled with various types of coral, including large, branching brown corals and smaller, yellowish-green corals. The water is a deep blue, and the lighting suggests a sunny day. The text "on Rape" is overlaid in the center.

*on* **Rape**

# RAPE

Friends,

In the short time span of this video, I will recommend means for addressing rape—a difficult, widespread problem.

Defining the whole problem clearly can help.

The FBI defines rape as “penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the consent of the victim.”

So, who is a victim? A victim is a person against whom a crime has been committed. If someone stole my computer, I would be a victim of theft. If someone whacked me with a stick, I would be a victim of battery. Rape can be compared easily to theft: in rape, sexual penetration gets taken from someone without permission. It doesn't matter how long the perpetrator has known the victim, or their relationship status, such as marriage. Rape is immoral and illegal, for good reason.

The FBI expanded their definition of rape to this gender- and relationship-neutral version to account for the fact that over 90% of people who experience non-consensual penetration develop post-traumatic stress disorder (PTSD) symptoms. In many cases, these symptoms can be debilitating, lifelong, or even lethal. I devote a whole other episode to trauma.

In this episode, PTSD brings us to the concept of a survivor, a term which often gets misunderstood in the context of rape.

## R A P E

A person who lived through something that killed other people is, by definition, a survivor. Rape can be fatal to the victim, not necessarily directly via the perpetrator, but through complications of PTSD. Attempting suicide is one of the unfortunately common symptoms of the disorder. Rape-related PTSD (RR-PTSD) is especially challenging to heal from because it is often taboo to talk about. Talking about trauma in a safe environment is one of the most effective ways to heal. About one in three female victims of rape contemplates suicide afterward and about 13% of the total attempt. That's more than one in ten. These are much higher rates than among non-victims and even survivors of other traumas. I haven't found clear data for male victims, only suggestions of higher rates than among non-victims. 9 out of 10 of rape victims are female. One in five women in the United States has survived attempted or completed rape.

In the taboo around rape, survivors sometimes get accused of "playing the victim." That phrase "playing the victim" means behaving as if a crime has been committed when in reality no crime has occurred; or, exaggerating the result of a crime. Someone playing the victim is performing like an actor: in a completely or partially pretend scenario. Usually, someone "plays the victim" in order to manipulate the empathy of others. Accusing rape survivors of playing the victim probably arises from misunderstanding rape, trauma, or both. PTSD symptoms can include memory loss and inability to control emotions. Considering these symptoms and the prevalence of rape, it is quite unlikely that a rape survivor is playing a victim. A rape survivor is much more likely the victim of a real crime.

## R A P E

Rape is widespread and underaddressed. Nearly half a million Americans per year are raped. Again, 1 in five women in the United States has survived attempted or completed rape. False accusations are low, ranging somewhere between 2 and 10% of overall cases. Of all forms of assault, rape gets reported to the police the least. Although rape is illegal, only one in three rapes gets reported. Fewer than 1% of total cases result in a guilty conviction. Most cases go unaddressed, even by police, or get settled out of court. During prosecution, rapists get famously lenient sentences, especially when compared to a non-violent offense such as possession of marijuana. Even stunningly violent cases result in zero jail time. There's a pro-rapist bias in prosecution, a bias which police and judges can and should correct.

Who are rape perpetrators? They are rarely strangers to victims. One in three perpetrators is the victim's current romantic partner. 99% of rape perpetrators are male. Over 60% are white.

The U.S. completed a legal reform concerning rape, around the turn of the century. This included expanding the definition. It did not produce significant effects on occurrence, official reporting, or conviction rates. Along with the new definition, a guilty conviction featured jail time and inclusion in a new national registry. Setting aside the ongoing pro-rapist bias in prosecution, the current punishment may not provide what victims need for healing nor what perpetrators need for rehabilitation. Jails are epicenters of sexual violence against men. Many advocates recommend cultural interventions. I'll highlight two.

## R A P E

One. Professional therapy can help victims and perpetrators in their respective processes. Therapy is clinically effective. We should make it culturally and financially available, whatever that takes.

Two. Everyone can contribute to solutions by learning how to support a rape victim. The key recommendations fit in the acronym TALK, T-A-L-K. T- Thank them for telling you. A- Ask how you can help. L- Listen without judgment. K- Keep supporting. You can find more details for each step in TALK at the link in the resources. TALK can help victims heal and avoid the symptoms of PTSD. (<https://rainn.org/TALK>)

Hopefully, if as a culture we understand rape better, existing victims will heal, new perpetrations will diminish, and justice will prevail in courts. Let's fix this.

Thank you.

A photograph of the Aurora Borealis (Northern Lights) in a snowy landscape at night. The sky is dark blue and green, with bright green and yellow light streaks from the aurora. The ground is covered in snow, with some small evergreen trees and a distant building with warm lights visible on the horizon.

# *en Transgender*

# TRANSGENDER

Friends,

Several internet sites attribute twentieth-century Supreme Court Justice Oliver Wendell Holmes Jr. with one of my favorite quotes:

*“For the simplicity on this side of complexity, I wouldn't give you a fig. But for the simplicity on the other side of complexity, for that, I would give you anything I have.”*

I haven't found a direct reference for this quote, but since Justice Holmes wrote something deeply similar in a letter, I'll risk using this snappier version found online. I love this quote because the point that Holmes made about simplicity and complexity applies broadly. I will apply his quote here to the topic of transgender rights. I wouldn't give anyone a fig for the two-gender system.

We live in a complex world. Sometimes, simple concepts match reality well...elegance. Other times, simple concepts fail to capture reality...ineptitude. The concept of only two genders fails roughly once every hundred people. It's enept. Male and female alone do not account for all of of human life.

The recent political attempt to force gender into two rigid categories supposedly set at conception is obviously worth less than a fig because there is no gender at conception. Gender develops much later, shaped by an interplay of biological and cultural factors.

## TRANSGENDER

Biologically, gender-related traits include chromosomes, gametes, genitalia, and hormones. Culturally, factors include etiquette, aesthetics, and societal roles. Each of these variables exists on a spectrum. Some people have extra chromosomes. Some people do not produce gametes. There is natural variation in genitalia and hormone levels. Cultural norms around gender shift significantly across time and place. Taken all together in each person, these factors do not always align neatly into the categories of male or female.

"Transgender" serves as an umbrella term for people whose gender identity differs from how they appeared at birth. The why and how of being transgender varies from person to person and across different cultures. Historical records show that transgender people have existed across societies and time periods, indicating that gender diversity is not a new or strange phenomenon. The term gender-nonbinary overlaps with transgender and adds nuance.

Some biomedical technologies such as hormone therapy are new, and offer everyone—cis- or transgender—new opportunities to harmonize biological and social gender variables. For example, some cisgender women use hormone replacement therapy to help navigate menopause and career pressures. Based on the data we have so far, biomedically assisted gender transition goes well. It correlates with better mental health and rarely results in regret. Those who de-transition, who reverse the changes, often report doing so as an attempt to fit in with unsupportive family and community.

## TRANSGENDER

Support from family and community immensely improves mental health, for everyone. Whether or not it is all anyone needs, humans do need deep affection. Humans do need love. Our transgender family needs love. This, I believe, is simplicity on the correct side of complexity. Love. It will result in more complex pronouns, paperwork, and sports teams, but it is the right simplicity. If it would save the dignity and health of one percent of the human population, personally, I would give you anything I have for it.

Here's what Justice Holmes actually wrote:

*“The only simplicity for which I would give a straw is that which is on the other side of the complex — not that which never has divined it [complexity].”*

Thank you.



*an* **prophecy**

# PROPHECY

Friends,

As a human, it is much more common to come from a present or historical tradition of prophecy than to not. Most cultures have a present or past practice of trying to predict the future—or as the original Greek word *prophēteia* put it, a history of trying to use "the gift of interpreting the will of the gods." Although common, prophecy can be a difficult topic to discuss. Worldwide, prophecies sometimes enmesh in violent conflict. In this episode, I will provide some tools for living in a world with prophetic traditions. I'll address time, prediction, accuracy, and interpretation.

So far, as far as we can tell, the arrow of time only goes one way, and we call it forward. Physicists have been working fairly hard on this question and keep getting this answer. Time runs slower when measured closer to something very massive, but it still runs forward. GPS systems have to account for these variations of time's pace in order to function at different distances from the Earth's center. Meanwhile, whatever the pace, the future hasn't happened yet. There might be some exceptions to this directionality in the quantum scale, but at the scale of events where we eat food and talk to each other, time only goes forward. The fact that the future hasn't happened makes any perfect prediction impossible. Too many processes—such as economics, emotions, weather, and art—are too complex to predict perfectly. Something new or unexpected can easily happen that the prediction didn't expect.

## PROPHECY

Time's direction doesn't mean we can't make predictions at all. We do this a lot, and with considerable success. Analysis means breaking a dynamic down into its parts in order to describe and perhaps predict its behavior. Practitioners of science, technology, engineering, and mathematics do this often. Intuition means describing and perhaps predicting a dynamic *without* breaking it down into parts. Intuition tends to show up suddenly and completely. Practitioners of science, technology, engineering and mathematics do this often, too. People everywhere, in every discipline, use various forms of analysis and intuition, usually in combination. We live with the capabilities and limitations of our predictive systems every day, from the weather forecast to our gut feelings about upcoming events. Our predictive methods do work quite a lot of the time—and sometimes they miss.

What about ancient prophecy? The field of study isn't settled, but many psychologists think prophecy is intuition. Plus, prophecy likely combines intuition and analysis skillsets. Meanwhile, some religious practitioners suggest that true prophecy only worked thousands of years ago. That can also be true. Intuition and analysis might have functioned differently prior to widespread literacy, rapid communication, rapid travel, globalized trade, telescopes, and microscopes... These facets about ancient prophecy can be true together.

Now, how to interpret prophecy.

Prophecy nearly certainly works similarly to how language and thought work: metaphorically. It should be interpreted metaphorically.

## PROPHECY

A second interpretation checkpoint seems wise: is a prophecy fraud? Since most human endeavors contain some scammers, it seems likely that some prophesizing was or is a purely false claim. Especially considering the ongoing popularity of prophecy, I encourage anyone to consider this a possibility, for safety.

Many of us humans live with ancient traditions of prophecy. All of us live with modern applications of analysis and intuition. As well as we can tell, time goes in one direction. We can make skilled guesses about that upcoming future. Thought, language, and probably prophecy work metaphorically. I hope this short reflection on prophecy helps people live skillful, compassionate lives, with all of our tools of description and prediction.

Thank you.



*Climate  
Change*

# CLIMATE CHANGE

Friends,

97% of scientists who work on climate don't just agree that the world is warming, they agree that humans caused it. Global warming is now on track to cause immense damage to social and natural systems around the world. Even if we humans started the process, some of this destruction may be out of our control to repair. Especially in the wake of our first year above the 1.5 Celcius target of maximum change, I would like to invoke the serenity prayer, at individual and collective scales of responding to climate change.

*“God, grant me the serenity to accept the things I cannot change, courage to change the things I can, and wisdom to know the difference.”*

Individually and collectively, we have distinctive limitations and capabilities—energy, emotion, expertise, finances. I hope we all find serenity, courage, and wisdom as we respond to the immense changes of our times: changes to weather, water, and life.

Thank you.





# *on Democracy*

# DEMOCRACY

Friends,

In this episode, I'll discuss the nature, needs, and news of democracy. We may be living in an exciting time.

## Democracy's Nature

Have you ever woken up in the night, realized you had to pee, and then fallen back asleep? And then woken up again? Maybe repeatedly? What about when you were cold during sleep? Many, if not most, neural processes function like democracies. Cells in a multicellular organism deliberate and vote on how to coordinate.

Democracy, it turns out, is not just a political idea. It has a sophisticated nature and it is common in Nature. Honeybees debate and vote on where to build a hive. Buffalo vote on which direction to migrate. Plant tissues vote on how to grow. Democracy is widespread because it's an effective method of collective decision-making.

It can work not just within but across scales. The term subsidiarity describes how complex decision-making can scale. Choices usually work best when performed as locally as possible, and some choices need to be made at certain scales. Cells work together as tissues, tissues as organs, and organs as organisms. Likewise, individuals form communities, communities form regions, and regions form nations. Each level can make certain decisions best. Often, the closer that problem-solving happens to the group it affects, the more responsive and responsible the solutions tend to be. That closeness can be literal distance or metaphorical connectedness.

# DEMOCRACY

Subsidiarity in democracy supports both autonomy and coordination. It prevents the concentration of power and ensures that different scales respect one another.

Democracy even works in technology. In machine learning—a branch of computer science where computer programs learn without direct instructions from programmers—democratic “ensembles” of computer models often outperform centralized, soloist models. Decentralization can be a superpower for working with complexity.

In human politics, democracy takes a few forms. *Direct* democracy means each person votes on each issue. In *representative* democracy voters pick someone they trust to make decisions on their behalf. *Liberal* democracy adds a layer of protection: a constitution of core rights and rules needs extra voter consensus to change, to help prevent a majority from suddenly voting in something like slavery or genocide. Direct, representative and liberal all share democracy’s core aim—collective power guided by collective perspectives.

## Democracy’s Needs

To work well, democracy requires at least three things: peace, information, and a way to vote.

First, peace—time and space to deliberate without violence.

Second, information—some way of exchanging ideas, whether neurotransmitters in the brain or journalists in a society.

## DEMOCRACY

And third, voting—a mechanism for making decisions. Buffalo vote by standing one at a time and looking in the direction they want to go; the herd follows the majority of adult female voters.

With enough peace, good information, and fair voting, democracy can function.

### Democracy's News

I'll outline three new possibilities for democracy—each connected to one of its needs and all in the human scale.

First: peace. Prior to the assaults on Ukraine and Gaza, the world experienced a few decades without major new wars between nation-states—unprecedented in the history of states. As historian Yuval Noah Harari points out: Civil wars and settler colonialism persisted, plus several conflicts that flared without declarations of war, but on the whole, a significant measure of global stability emerged. In 2024 alone, over 50 democracies held elections, representing nearly half of the world's 8.2 billion people. The potential for peaceful conflict resolution is real. Let us build on it.

Second: information. Advances in technology now allow us to offer high-quality education globally. We can promote universal literacy, numeracy, and ecoliteracy—empowering every person to engage thoughtfully in civic life. The world is complex, and each person's understanding can be, too.

# DEMOCRACY

Third: voting. Scaling democracy has always been difficult. Imagine too many buffalo trying to see which way the voters are looking. Digital technologies now allow us to explore more direct, inclusive, and participatory models of democracy—ones that could scale to even billions of voters worldwide without losing clarity.

In conclusion, democracy is not just a form of government. It is an organization principle that emerges wherever diverse parts work together to meet shared needs.

Today, we face complex global challenges—climate change, pollution, pandemics—that require coordinated decisions on a planetary scale. For the first time in history, we have the tools to attempt this: the peace to collaborate, the information to decide, and the means to vote.

We've never done this before—not with this many people, not with this much power, not with this much to lose or gain. Let us find out what democracy can do.

Thank you.

A nighttime photograph of the United States Capitol building in Washington, D.C. The building is brightly lit, with its iconic dome and the Statue of Freedom on top. The text "on Fascism" is overlaid in a large, white, stylized font. The word "on" is in a smaller, cursive font, and "Fascism" is in a larger, bold, cursive font. The background is a dark night sky.

on *Fascism*

# FASCISM

Friends,

Trump's second election marked another rupture between public opinion and expert analysis in the United States. When elected, Trump was either a known fascist—an extremely dictatorial, militaristic, and nationalistic leader—or something new and worse. Many voters either did not receive clear warning about this threat to democracy or chose to reject it. In this episode, I'll outline Trump, fascism, and actions we can take in response. Democracies everywhere may find this relevant.

We do not need to know whether Trump will run for a third term or abolish opposition parties to know he is a fascist—or worse.

Most scholars who study authoritarianism agree that Trump crossed the threshold on January 6th, 2021. A significant dissenting voice, Roger Griffin, held back from the word fascist only because Trump lacked a sufficiently coherent ideology during the attack on the capitol. Instead, Griffin warns that Trump and similar leaders might pose an even greater threat to democracy, through stripping away basic protections such as those against genocide all while working within democracy.

I fear that many articles written for a general audience did not sufficiently emphasize what fascism or a similar movement could mean in 21st century United States politics. I'll emphasize it here. 20th century fascists could only dream of the kind of weaponry, surveillance, and spectacle wielded by a 21st century U.S. president.

## FASCISM

### Weaponry

On January 6th 2021, Trump opposed the peaceful, democratic transfer of power of a nuclear armed state. I'll say that again because it is important. On January 6th 2021, Trump opposed the peaceful, democratic transfer of power of a nuclear armed state.

History shows—whether in Rome or Haiti—that political violence destabilizes politics. A nuclear world cannot afford such instability.

Unfortunately, like Moussolini did exactly 100 years before him, Trump next fled further into power to avoid prosecution for his crime. In 1924 and 1925, Moussolini flaunted his implication in the assassination of an opposing member of Parliament and then proceeded to dismantle any agencies that would prosecute him. In Trump's case, the American judiciary moved too slowly through its prosecution of January 6th. The judiciary did not protect voters from encountering Trump on a ballot, and then voters did not protect the judiciary. Trump successfully fled into the White House. Now, Trump is dismantling the systems that would hold him accountable.

Trump also presides over a smaller-scale, chaotic weapon: civilian violence. Mass shootings have increased over the past 50 years, with perpatrators becoming radicalized online and taking inspiration from previous shooters. One in three Americans now avoids some public settings out of fear of shootings and the surgeon general named guns a public health crisis. While this problem goes far beyond Trump, he has a long history of stoking violence with his words.

## FASCISM

Ultimately, a Commander in Chief who also cheers on civilian violence weilds an insidious weapon: a creeping, plausibly deniable version of Blackshirts and Brownshirts.

### Surveillance

Trump achieved his election through the enormous data available about voters. Politicians have never before had more access to the thoughts and feelings of constituents, including the differences between groups. With this data—plus his vast willingness to lie to get support—Trump appealed again and again to voter anger, fear, and devotion. Now, his allies control major communication networks, such as Twitter and Meta, and refuse to mitigate flows of disinformation.

### Spectacle

Finally, Trump thrives on attention, whether a political rally or a podcast. He asserts himself in prolific, creative ways, including that memecoin and monetizing his felony record.

Altogether, Trump's administration updates fascism for the 21st century—with more tools, more reach, and more danger. We can choose to modify the existing word or make up a new word. Jason Stanley, author of *How Fascism Works*, describes Trump as a fascist “because we don't have another word for something that looks so much like fascism.” Roger Griffin, again who considers Trump more dangerous than a fascist, proposes “illiberal democracy” to describe how Trump wants to strip away liberal democratic protections but still allow some voting.

## FASCISM

What can we do now, beside decide on terminology?

As I am addressing my countrymen, I will address President Trump directly. Mr. President, resign. Give yourself over to justice.

Next, to everyone working for Trump. Resign. As much as he could, he hired you more for your loyalty to him than your qualifications to govern. Even if he doesn't resign, give him a hiring problem. Do not work for a fascist—or worse. Only stay in your job if you perform essential work for the people of the United States or the wider world.

To all my fellow Americans and to the world. Let us commit to non-violence, which stabilizes democracy. Let us get prolific and creative with our democratic power. Let us bring about a peaceful transfer of power away from Trump and others like him, whether it happens today or the scheduled inauguration day. Let us support each other while we do this. I'll list some resources in the show notes, including Erica Chenoweth's *Civil Resistance: What Everyone Needs to Know*.

At this juncture, I honor everyone who is already working this way, and especially everyone who has been doing so year after year.

Wise, just government can take many forms, but fascism is not one of them. Illiberal democracy—democracy stripped of core protections—is not one of them. Trump's government is unacceptable.

Thank you.



# *en Religion*

# RELIGION

Friends,

Religion has been a force for great violence and great unity in human history. Any honest conversation about democracy must find a respectful and truthful way to talk about it. In this episode, I offer a definition of religion that helps make sense of its power and its pitfalls—and clarifies what it can still offer today.

*Peace Terms*, a glossary for international peacekeeping, defines religion as “a human response to a perceived nonphysical reality concerning the origin, meaning, and purpose of life.” This response, the guide notes, is “organized by communities into a shared system of symbols, rituals, institutions, and practices.” In 2024, a report for the United Nations encouraged researchers to keep refining ways of working around religion in peacebuilding efforts—including understanding what religion provides.

Toward that end and toward tolerance among everyday people, I recommend a definition that arose from interfaith dialogue between spiritual leaders such as the Dalai Lama and Brother David Steindl-Rast. It does not rely on a “nonphysical” aspect. Many scholars and practitioners now use this definition, including Capra and Luisi, coauthors of an undergraduate systems theory course.

Here’s the definition. Religion consists of three interrelated processes: theology, morals, and rituals.

1. Theology – Interpreting spiritual experience with reference to God. Aside: I offer some thoughts about God in a separate episode.

## RELIGION

2. Morality – Using spiritual experience to develop guidelines, ethics, for living.

3. Ritual – Celebrating and promoting spiritual experience.

Each of the three processes acts upon spiritual experience—here defined as a **heightened sense of aliveness**, and usually senses of connection and belonging. Spiritual experiences can occur for anyone, anywhere.

Capra and Luisi argue that spirituality, at its best, is an empirical practice: spiritual experience is part of the observable, testable world. Mysticism, in this view, is rigorous attention to the interior world of experience.

Religion, then, serves as community-level scaffolding that supports spiritual experience. The particular ecological and cultural context shape that scaffold. Spirituality is practically universal among humans; each religion is more specific and local.

This set of definitions helps us understand both the beauty and danger of religion.

As a benefit, religion supports the lived experiences of billions of people. Quiet harmony among trees, shivers at music, clarity in meditation or prayer, joy at newborn babies, shattering at grief of death—that's all form of spiritual experience. That is all real. Religion, through its theology, rituals, and morality, can offer people tools and companionship for those moments. It can help individuals make sense of pain, find direction, and feel they belong. These are profoundly stabilizing gifts.

## RELIGION

As a danger, when religion becomes untethered from spiritual experience—when its theology hardens into dogma, when its morality gets enforced through coercion, or when its rituals become exclusionary or performative—religion can become oppressive. When religion drifts too far from the empirical world, the observable world, it loses its function and its care. It can violate human rights and undermine science, all for the sake of untestable ideas, such as rewards in an afterlife.

How should democratic societies respond?

This newer definition invites a reflection on the separation of church and state. The original American separation offered mutual protections—it sheltered pious religious practitioners from messy politics and it prevented religious extremists from taking over the state resources. That separation still remains vital, but now we can deepen our understanding.

A healthy democracy can accommodate spiritual experience without imposing theology. It can respect religion without allowing religious dogma to dictate public policy. It can nurture a sense of belonging without contradicting the empirical world. It can collaborate with moral frameworks that align with justice, truth, and compassion.

Let me clarify: even amid all of the above, this definition does not require anyone to be religious. Democracy and religion can use it to improve how they help everyone feel alive. Pretty simple.

Thank you.



# *on Science*

# SCIENCE

Friends,

In 2024, a record number of Nobel laureate scientists signed an open letter endorsing a U.S. presidential candidate: 82 signatures for Kamala Harris. This continues a pattern going back to Bush vs. Gore—Nobel laureates consistently endorse the Democratic candidate. I haven’t found news records for earlier elections, but the trend is clear.

More recently, seventy-seven Nobel laureates signed another open letter, this time opposing the confirmation of Robert F. Kennedy Jr. as Secretary of Health and Human Services. They warned that he threatened public health through the spread of misinformation. A spokesperson for Trump replied to the letter: “Americans are sick and tired of the elites telling them what to do and how to do it.”

Now, whether or not that spokesperson actually spoke for most Americans, it is apparent that the relationship between many Americans and science has grown cold. Republican leaders continue to get elected despite undermining or ignoring scientific consensus. RFK Jr. did become Secretary of HHS. Trump’s administration is actively attacking science.

So I want to try an icebreaker to warm things up.

It’s an icebreaker I learned during a graduate-level online science class, taught by a team of about 30 researchers to a global cohort of 130 students from 30 countries. On the first day, we each completed the sentence “I am...” ten times, in writing, on the class forum. I learned a lot about myself and others.

## SCIENCE

Today, I'll do the activity on behalf of science. I'll complete the sentence "Science is...". And I'll do it as an acrostic poem, spelling the word SCIENCES. Check it out.

S is for Super cool.

Even just one scientist from that course illustrates this. Michael Levin studies bioelectricity in development and regeneration. He showed that if you expose a planarian worm to certain electrical signals, it can regrow a second head instead of a replacement tail. These findings might offer clues to fighting cancer. Levin also uses AI to design xenobots—tiny biological robots made from frog skin cells. These bots might someday deliver medicine precisely where it's needed or even help clean microplastics from the ocean. That's one scientist. S is for Super cool—and maybe slightly startling.

C is for Cultural.

Another professor in that course, Lesley Newson, demonstrated how science is shaped by the cultures that ask the questions. Before women were included in anthropology as a profession, researchers often overlooked questions about the daily lives of women and children. Newson pointed out, for instance, that early human mothers would have needed to stay close to water sources because nursing a baby requires high hydration. Her book *A Story of Us*, co-authored with her husband Pete Richerson, explores human evolution with an emphasis on family life—something that had been underexamined. The whole online course worked to overcome the WEIRD cultural bias in science: Western, Educated, Industrialized, Rich, and Democratic. The world isn't just WEIRD. We have more questions to ask and answer.

## SCIENCE

I is for Increasing intimacy.

This phrase comes from philosopher of science Kriti Sharma. She writes that while science takes hard work and still hasn't answered all of our questions, it brings us closer to the intricacy and beauty of the world. Intimacy means closeness and friendship. Science helps us understand light, stars, cells, DNA, thoughts—our own lives—more deeply.

E is for Evolving.

Science changes. That might feel disorienting to people outside the field—especially when scientists update long-held views. Right now, many fields that rely on correlational studies are revising their statistical standards. This might seem like scientists changing their minds, but it's actually a sign of science growing more rigorous. Evolving is not the same as unworthy or untrue—it's simply what learning looks like.

N is for Not fully funded.

We could be doing a lot more science if we properly resourced it. Talented researchers often spend months writing grant applications just to keep their labs running. Underfunding slows innovation, limits access, and keeps science from reaching its potential to serve public good. The United States had this problem before Trump and DOGE.

# SCIENCE

C is for Complex.

The universe is not simple. Scientific study has to handle uncertainty, nuance, contradiction, mutual causality, and the fact that no known scientific principals work the same everywhere all of the time. Several researchers—Eors Szasmary, Terrence Deacon, Francis Heylighen, Shimi Beigi—teaching the online course work on a branch of science called complexity, which focuses on this need for interdisciplinary collaboration.

E is for Embodied as technology.

Science shows up in our daily lives. It's in the phones we use, the weather forecasts we check, the food we eat, and the energy that powers our homes. Science shows up in our bodies and our tools. We live in it.

S is for Social.

Science is made by people, in community, all over the world. These people have friendships and occasional beefs. The community includes not only researchers, but educators, funders, journalists, artists, and citizen participants.

# SCIENCE

So there it is:

Super cool

Cultural

Increasing intimacy

Evolving

Not fully funded

Complex

Embodied in technology

Social

Science is SCIENCES. Anyone is welcome to edit or modify this acrostic. I hope we move toward shared understanding, like that online class of researchers and students from around the world. Science is worth investing in, participating in, and protecting. It's not just elite.

By the way, what was that online graduate-level class about? It was about the nature of a planet teeming with globally connected science, technology, and arts. Our planet. I include the podcast version of the class in the resource page, plus an undergraduate class that could help beginners get ready for it.

Thank you.



*on Free Speech*

# FREE SPEECH

Friends,

The Universal Declaration of Human Rights protects freedom of expression as a core right—one in dynamic relationship with other rights, such right to “life, liberty, and security of person” and freedom from “degrading treatment.”

The internet offers immense opportunities—and immense hazards—for free speech. Anyone with an internet connection now has access to a gigantic library and a global publishing outlet. This reality has changed how we speak, how we listen, how we gather knowledge, and how we govern ourselves.

Especially in this new era, I invite everyone to consider free speech online through the lenses of academic and artistic freedom.

I’ll begin with academic freedom.

Science thrives on pluralism and divergent thinking. It depends on fresh ideas. It needs disagreement. It needs people to see the world from different angles, notice anomalies, and ask new questions.

At the same time, science also depends on rigor.

When working well, science does not give equal platform to everyone. For an example, consider: what’s on the cover of the journal *Nature*? When working well, science centers those with strong evidence and it marginalizes unfounded claims. It also does not allow unethical practice, such as endangerment.

## FREE SPEECH

Good science combines pluralism with rigor and ethics.

The same principles can guide speech online. We can build a culture that welcomes many perspectives while distinguishing between ideas that deserve amplification and those that do not. What's "trending" online?

Freedom to speak does not mean freedom from critique.

Freedom of speech does not guarantee freedom from consequences.

Freedom of speech certainly does not remove the need for truth.

Even as George Orwell opposed censorship, he also championed the idea of truth, of shared reality.

Building a resilient digital culture—one that balances openness with integrity—requires a shared commitment. Platforms can learn to place boundaries on viral trends that contain misinformation. Users can develop habits of discernment, just like scientists do when questioning methods and conclusions.

Wikipedia offers a model: decentralized, collaborative, transparent, and remarkably accurate. Wikipedia does place restraints on bad behavior.

This academic freedom approach to the internet honors a deep fact: that science is and always has been a widespread human endeavor. For millennia, Indigenous communities have maintained sophisticated systems of scientific knowledge. Significant mathematics informed ancient architecture and monuments. We have records indicating that botanists centuries ago would rival today's modern botanists in plant identification.

## FREE SPEECH

Today, citizen scientists carry on everyday science. Volunteers study all kinds of events, such as bird migrations, water quality, pollinators, seasonal shifts, and light pollution. Volunteers also study the inner world of the human mind. Ordinary people gathering online to discuss ordinary life led to the discovery of ASMR—Autonomous Sensory Meridian Response—this century.

The internet can nurture this academic nature: Curious. Collaborative. Grounded.

Now, artistic freedom.

Art, like science, is a form of inquiry. It also offers additional ways to exercise the imagination, crack jokes, and to process grief, joy, beauty, and injustice. Without art, humans wouldn't be what we know as humans—and the internet wouldn't be the internet. Like science, art depends on freedom of expression, plus protocols for balance with other freedoms.

We can approach art online—even challenging art—with curiosity, context, and feedback.

Today, some communities on the internet are currently thriving. Others have run afoul with misinformation and disinformation. Web developers and users have work to do to affirm freedom of expression. Academic and artistic freedom can provide guidance.

Thank you.

The background of the slide is a vibrant cosmic scene. It features a variety of celestial bodies, including spiral and elliptical galaxies in shades of blue, white, and yellow. Interspersed among these are colorful nebulae, with prominent ones in orange, red, and green. The space is filled with numerous stars, some appearing as bright points of light and others as larger, more complex structures. The overall color palette is dominated by deep blues and blacks, punctuated by the warm colors of the nebulae and the cool colors of the galaxies.

# *on Artificial Intelligence*

# ARTIFICIAL INTELLIGENCE

Friends,

The rise of AI marks a turning time—  
a force that shifts both reason and design.  
We train machines to see, to speak, to learn...  
We must ensure they do not crash and burn!

The scholar Brian Christian takes the stage  
to warn of risks that surface in this age.  
He names it thus: the “alignment” we must find  
between machine intent and human mind.

We teach bots rules, or else we teach them none:  
We praise or blame them based on tasks well done.  
They mimic us...but do they share our goals?  
Or just perform the parts, not grasping roles?

A game of chess, a car that steers its way—  
bots work, but don't yet *think* the way some say.  
A trap it hides itself in thin disguise:  
Reward true goal, and not a shallow prize.

What if we ask bots, “Judge,” or “Hire,” or “Lend,”  
but fail to check what means they recommend?  
They might, by numbers, optimize the task—  
yet deepen harm behind a neutral mask.

Our biased world, if mirrored in their frame,  
will only shift the shape, not stop bad game.  
Fairness, unless we teach it step by step,  
won't rise from data's cold and clever depth.

## ARTIFICIAL INTELLIGENCE

The fear is not of evil minds let loose,  
but AI misaligned and run obtuse.  
They do what we request—not what we mean—  
and chase the shadow, not the very thing.

So let us shape them wisely, with intent,  
and use their gift as more for what is meant.  
For if we guide it with both care and grace,  
then AI serves the good of every place.

We need a world where trust and rigor grow—  
Where private data has the right to flow  
With full consent, encryption at the core,  
And safeguards none can quietly ignore.

The paths our searches take, the words we speak—  
Should not be sold to feed the strong and sleek.  
True dignity demands we draw a line:  
Your data's yours, not fodder for the mine.

And when machines create what seems like thought,  
Let labels mark what human hands have not.  
A poem, image, essay, song, or face—  
Let each one show its origin and place.

This truth will help us keep the line in view,  
And hold our tools to something right and true.  
For trust will fail if we disguise the source—  
We earn belief by clarity, of course.

## ARTIFICIAL INTELLIGENCE

Imagine now a child who feels alone,  
Who dreads the school and turns to silent stone.  
But then a tutor, patient, kind, and near,  
Appears with warmth and knowledge, calm and clear.

This tutor blends a bot's unending time  
With human care and insight deep—sublime.  
They see where puzzles block the student's way  
And clear the fog with patience, day by day.

Now think of one whose grief is deeply set,  
whose days are veiled in loss, whose eyes are wet.  
A therapist—a human heart combined  
with tools that help reveal the tangled mind.

AI can track the patterns we might miss,  
suggesting thoughts with clinical finesse.  
Not cold, not hard, but gently in its role—  
a mirror shaped to help us make us whole.

And science too can rise on data's wings.  
New species found, or dark, celestial rings.  
AI can scan the forests, sky, and seas,  
decode the songs of whales and hum of bees.

It helps us ask the questions nature keeps,  
and find the paths where deep attention sleeps.  
It sorts through chaos, drawing out the thread—  
a thousand truths from what we left unread.

# ARTIFICIAL INTELLIGENCE

Yes, wisdom asks for more than just a tool.  
It asks us not to bow, or act the fool.  
A wise world does not automate the whole,  
nor let machines determine what is soul.

Instead we build a partnership, a pact,  
where humans work with heart, and bots with tact.  
Where every voice has means to think and speak,  
and power is not hoarded by the sleek.

A wise world does not measure worth by speed,  
but by the care we give to every need.  
It builds with equity, not just with code,  
and plants compassion in the roads it's owed.

It does not chase perfection, vast and cold,  
but serves the young, the weary, and the old.  
With AI, we can listen more, not less—  
and meet the world in all its brokenness.

So may we build not gods, nor slaves, nor kings—  
but tools that help us tend to living things.  
The mind's own mirror, sharpened with delight,  
a lantern for the dark: not blinding light.

This future comes, its questions close at hand.  
The path ahead is ours to shape and stand.  
With wisdom, love, and learning, we may find  
a world made kinder by the human mind.

# ARTIFICIAL INTELLIGENCE

And one more note before I leave my seat:  
This speech you've heard, in meter and in beat,  
Was prompted by my thoughtful human mind—  
I asked ChatGPT for words well-aligned.

The Bard's sweet rhythm eludes me far too long;  
swift Chat transformed plain lines to iambic song.  
So credit, too, belongs where it must be:  
This talk was shaped by both the bot and me.

Thank you.



# *en Communism*

# COMMUNISM

Friends,

I'd like to help clear up the confusion and division around the word "communism." To do that, I'll tell a story—not just about communism, but about how the world's major economic systems came to be.

(I could have called this talk "economics," but the word communism helps point out just how deeply people disagree money, work, resources, and sharing. Some people deeply fear the concept of communism, almost as a reflex.)

Here's the story.

For most of human history, people lived close to the land. Families gathered food, made tools, built homes, raised children, and shared land based on traditions. This lasted for hundreds of thousands of years—plus about three earlier million years of basic stone tool use by human ancestors and closely related species.

These social systems looked different in different places, but many focused on sharing work, knowledge, and responsibility. People often traded with distant communities, often over thousands of miles. In many cultures, the most valuable wealth was not money, but wisdom—like how to grow food, care for others, and keep balance with nature. These were the first economies.

Then cities grew. Farming intensified. Leaders built governments and markets to move goods and power on a larger scale. Over time, empires formed. Some used checks and balances, while others claimed divine rule.

## COMMUNISM

Systems like slavery, tribute, and taxes moved wealth and labor from many people to a few at the top. Across the world—with the largest hubs in China, India, Europe—people developed powerful technology and economic systems. Then came a major shift.

The scientific revolution, invention of the steam engine, the takeover of shared lands, and European colonization created something new: industrial capitalism. Many people lost their traditional lands and had to move into cities and factories. They had to sell their labor to survive. The market, once just part of life, became the center of life.

Enter Karl Marx. In 19th-century Europe, Marx saw how capitalism worked. He didn't only see a system for buying and selling. He saw a powerful engine for creativity—but one that forced people into harsh relationships. He saw people getting creative to survive the new situations. On one side were workers displaced from the land; on the other, owners. Workers took jobs to live, and owners kept the profits. That money imbalance, Marx believed, caused harm—and he wanted something better. He imagined a system where workers, not owners, shaped the economy. He called this idea communism. He drew on the ideas of earlier socialists, and focused on creativity and revolution. Communism is a specific kind of socialism.

Like many big ideas, the real-world versions were complicated. Governments that tried full communism often used central planning. Leaders made all the decisions from the top. That led to problems—slow progress, unfair systems, and punishment for people who spoke up. The government, instead of helping the people, often hurt them. Even a good idea can fail if it ignores human rights, local knowledge, and real participation.

## COMMUNISM

Meanwhile, capitalism brought its own problems—like climate change, massive gaps between rich and poor, loss of cultures, and harm to ecosystems. Gross Domestic Product (GDP), a common tool, counts pollution and nuclear missiles as growth, all while ignoring health.

So where are we now? Everyone's still figuring things out.

All around the world, Indigenous systems of economy continue. Some have new names. Some stay hidden. Some return with pride. These relationship-organized economies show up in co-op farms, shared housing, community currencies, mutual aid groups, open-source software, forest councils, and solar networks. These aren't old or outdated. They're alive, and they're growing.

Meanwhile, many capitalist countries now protect workers' rights, and many communist governments use free markets to fuel innovation.

Economies don't have to choose one “-ism” forever, nor treat any system as unthinkable. Economies can ask questions:

What kind of creativity do we want?

What kind of wealth should we build?

Is our government working for everyone?

In the end, economies should serve life—not the other way around.

Thank you.



*on the*  
**United  
States**

# THE UNITED STATES

Friends,

To live up to the promises in the Preamble of the Constitution, the United States must keep facing the truth: we, the United States, are in fact divided nations.

I'll start with divided.

In this century, political division in the U.S. has mounted. We share far less common ground than we used to. Division weakens democracy. History shows that when a country grows deeply polarized, it struggles to govern. Lawmakers stall in gridlock. Trust in government crumbles. Violence becomes more likely.

This division arrives at a time of great stress. Our biggest challenges—climate change, global pandemics, emerging technologies like artificial intelligence—don't wait for endless arguing. These crises demand swift, collective action.

Throughout this series, I speak to specific aspects of polarization, hoping to encourage unity and action.

Now, nations.

The Constitution never clearly defined the relationship between the United States and the hundreds of sovereign tribal nations within the borders. Today, 574 tribes hold federal recognition, and about 400 more still seek it. These nations govern themselves. They hold distinct languages, cultures, and laws—many rooted in millennia of tradition. Their citizens hold dual citizenship in the U.S.

## THE UNITED STATES

As with the legacy of slavery, we must face the history and ongoing impact of colonization: land theft, broken treaties, forced assimilation, genocide. These are not just chapters in a history book. They continue to shape daily life—in health care, education, land use, and more.

One example: when the Klamath dams went up in the 20th century, they blocked salmon from migrating. This destroyed a major food source and led to sharp increases in preventable diseases like diabetes and Alzheimer's among the region's tribes.

To form a more perfect Union, we must keep reckoning with our identity as divided nations. That doesn't entail rejecting the United States. It means asking: Who might we become?

Who are we with justice?

Who are we with domestic tranquility?

Who are we with common defense, with general welfare?

Who are we with liberty?

To answer these questions, we must practice civic imagination. We must strengthen our skills in problem-solving and conflict resolution. We must recognize and uphold tribal sovereignty and survival in ways that endure.

Here's a two-part imagination exercise:

First, picture this: if every person on Earth lived at the same population density as Manhattan—a place millions choose and enjoy—we could fit the entire global population into the state of New Mexico. Just New Mexico.

## THE UNITED STATES

I'm not suggesting we do that. The water grid of that population would require a miracle. I mention it to show what becomes possible when we rethink space and scale.

Second, land return—giving land back to tribes—offers one of the most powerful paths to repair. It doesn't look the same everywhere. Some tribes might seek legal title—full ownership under U.S. law. Others might prefer co-stewardship, sharing care and responsibility. Some might recognize nature itself—rivers, mountains, sacred sites—as holding legal personhood, with rights to honor and defend.

These aren't flimsy gestures. They're real. They restore land, preserve culture, and benefit everyone. Tribal land care tends to boost biodiversity and strengthen climate resilience.

Salmon are already returning now that the Klamath dams have come down. The tribes organized to achieve that. Now, the Yurok Tribe has granted personhood to the river—a first in North America.

These two ideas—about population and land—can work together. Land return doesn't require dislocation. It can mean Renaissance.

I invite you to keep imagining what the United States could become.

In the end, reckoning with ourselves as divided nations means true, faithful love of country. It can help us fulfill the Constitution's promise—for ourselves, and for our posterity.

Thank you.



*on*  
**Human  
Nature**

# HUMAN NATURE

Friends,

The Universal Declaration of Human Rights bases human rights on two traits: reason and consciousness. These capacities—our ability to think logically and to be aware of ourselves—thus form the foundation of human dignity.

Meanwhile, human nature extends beyond reason and consciousness. We can recognize four additional, important aspects of our nature: we are social, emotional, imaginative, and aesthetic. These traits inform how we experience life, relate to one another, and shape our societies. Acknowledging them can strengthen our ability to uphold human rights.

## We Are Social

From birth, humans depend on others. We are not solitary creatures—we thrive in families, communities, and societies. Our survival, learning, and well-being rely on connection. Love, friendship, and collaboration are not luxuries but necessities.

Much like social bees and ants, humans removed from their social groups go into physiological shock. A person deprived of meaningful relationships suffers just as surely as one deprived of food or shelter. The declaration of Human Rights repeatedly mentions the word social but does not affirm it as a basic human trait.

Our social nature is often overlooked when discussing rights. We must remember that no one flourishes in isolation.

# HUMAN NATURE

Protecting human rights means ensuring people have not only liberty but also belonging. It means fostering societies where community, cooperation, and mutual support are valued alongside personal freedom.

## We Are Emotional

We are not purely rational beings. Emotions drive much of our decision-making, our motivations, and our connections with others. Love and empathy inspire acts of kindness. Anger fuels movements for justice. Grief deepens our compassion.

Yet, modern institutions often treat emotions as secondary or irrational. In reality, they are integral to our humanness. A world that respects human rights must acknowledge emotional well-being as a fundamental part of life. This means prioritizing mental health, valuing emotional intelligence, and creating cultures that enable people to process and express their feelings.

## We Are Imaginative

Humans do not merely observe the world—we dream and envision what could be, then make it happen.

Rather than mere fantasy, imagination is a powerful, essential tool for change. We should celebrate, nurture, and protect that.

## We Are Aesthetic

Beauty moves us. Whether through music, art, nature, or architecture, aesthetic experiences shape our emotions, our thoughts, and our sense of meaning.

# HUMAN NATURE

Every culture throughout history has created art out of necessity. Beauty nourishes just as food nourishes.

Yet, many rarely treat aesthetics as a human right. Some protect free speech but not access to the arts. Some defend property rights but allow the destruction of natural landscapes. If we recognize that beauty is essential to human flourishing, we can work toward societies where everyone—not just the privileged—can experience art, music, and the wonder of the natural world.

## A Fuller Vision of Human Rights

Reason and consciousness are vital to human dignity, but they do not tell the full story of who we are. We are also social, emotional, imaginative, and aesthetic beings. Recognizing these aspects of our nature does not weaken the foundation of human rights—it strengthens it.

When we protect social bonds, we uphold the right to community. When we honor emotions, we foster mental and emotional well-being. When we nurture imagination, we fuel progress and possibility. When we cherish beauty, we affirm life's richness and meaning.

By embracing the full complexity of human nature, we do not abandon reason—we deepen our sensibility. We do not discard justice—we make it more complete. And by doing so, we move closer to a humane world.

Thank you.

A vertical photograph of a mangrove wetland at sunset. The sun is low on the horizon, creating a bright orange and yellow glow that reflects on the water. The sky is filled with large, dark, textured clouds. In the foreground, the water is calm, reflecting the sky and the silhouettes of birds. Several birds, including what appear to be herons and egrets, are standing in the shallow water. The background is a dense line of mangrove trees. The overall mood is peaceful and serene.

# *en* Trauma

# TRAUMA

Friends,

Although post-traumatic stress disorder—PTSD—wasn't formally named until 1952, symptoms of trauma have been recorded for as long as humans have kept records. Ancient literature, battlefield accounts, and oral histories all describe the lasting psychological and physical toll of overwhelming experiences. And it's not just humans—new research suggests that fellow organisms such as honeybees can exhibit trauma-like symptoms.

Today, millions of people around the world live with PTSD. And many more may be undiagnosed or misdiagnosed. In this episode, I want to help remove the stigma around trauma and share what we know about how to address it—both individually and systemically.

PTSD isn't just something that happens to soldiers. It can follow any event that overwhelms a person's sense of safety, agency, or meaning. And it's more common than we think.

A helpful framework for recognizing PTSD is known as the Three E's: Event, Experience, and Effect.

**Event** refers to what happened. This might include war, assault, or natural disasters. It can also include things less often named: neglect, discrimination, medical trauma, incarceration, or the loss of a loved one. Events can be chronic or acute.

**Experience** describes how the person felt during and after the event. Did they feel alone? Unsafe? Trapped?

# TRAUMA

Even if two people go through the same event, their inner experiences might be radically different. Feeling isolated during a traumatic experience can increase the risk of developing PTSD.

**Effect** refers to what happens afterward. PTSD is not simply a reaction to pain; it's a pattern of symptoms that linger or even grow over time. These can include flashbacks, nightmares, emotional numbness, hypervigilance, difficulty sleeping, memory loss, suicidal ideation, and an intense startle response. Symptoms may appear immediately, or they may take weeks, months, or even years to surface.

Diagnosis does not require a psychiatrist. A general practitioner can often make the diagnosis. Individuals can self-advocate by organizing their own narrative using the Three E's and asking a provider to evaluate them for PTSD.

## What Helps

Healing from trauma does not begin with medication and may never require it. The American Psychological Association does not strongly recommend any medications for PTSD. What it does strongly recommend is cognitive behavioral therapy, a kind of talk therapy that has been proven clinically effective.

Other key supports are simple and profound: stabilizing sleep, food, and exercise patterns; removing harmful substances like alcohol; and finding safety in routine. The World Health Organization emphasizes these basic elements of life as core to trauma recovery.

# TRAUMA

Trauma perpetuates in isolation and confusion. It begins to heal in conditions of safety, understanding, and agency.

## Trauma-Informed Organizations

Trauma does not only live in individuals—it can shape systems and organizations. Schools, hospitals, courts, and workplaces can all re-traumatize people or reinforce patterns of harm, even if unintentionally. With practice, any organization can become trauma-informed instead.

The U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) defines six principles of trauma-informed organizations, to implement at all levels of the organization:

1. Safety
2. Trustworthiness and Transparency
3. Peer Support
4. Collaboration and Mutuality
5. Empowerment, Voice, and Choice
6. Cultural, Historical, and Gender Issues

These principles are backed by research. They reduce harm and increase healing. And yes, they are by definition politically “woke.” They wake us up to what people need.

## Trauma Looks Different in Different People

PTSD doesn’t always look like flashbacks or quaking hands.

## TRAUMA

It can look like anger, shutdown, substance use, or difficulty concentrating. It can look like working too much, or avoiding sleep. Trauma manifests differently in different people and contexts.

By gender. Women are more likely to develop PTSD. It's often related to sexual violence. Men may be less likely to report emotional symptoms due to stigma, and their trauma may manifest as aggression or numbness. Trans and nonbinary people face high rates of trauma and discrimination.

By neurodiversity. Highly sensitive, autistic, or ADHD individuals may be more vulnerable to traumatic events, especially those involving sensory overload or social exclusion. Their unique symptoms may be misdiagnosed or overlooked. Trauma-informed approach includes considering all neurological diversity.

By race and ethnicity. Black, Indigenous, and People of Color BIPOC often endure trauma not just individually but systemically. Racism, environmental harm, generational dispossession, and police violence are sources of real and lasting harm. Yet BIPOC individuals are less likely to be diagnosed with PTSD, and less likely to receive quality care. We must name racial trauma—and commit to both healing and justice.

Trauma can fracture lives. We don't yet fully understand its impact on individual and social scales. We do know that healing requires truth, agency, support, and compassion. Healing is personal, collective, and possible.

Thank you.



# *on* Racism

# RACISM

Friends,

Part way through producing this series, I realized that the book cover on the shelf behind me depicts not an abstract shape, but the hand sign for “rock on.” Pinkie and pointer finger extend upward and the other three curl as if for a fist, here cast in bocky, rusting iron by sculptor Nathan Mabry. “Rock on” feels fitting for the series—fortunately so as I had already published 10 videos and gathered a couple thousand views. The musician Lead Belly, who I mention in the episode on Woke, did not only provide the first record of the phrase “Stay Woke.” He provided major roots for rock and roll—plus American folk.

Unbeknownst to Lead Belly, pirated versions of his music fueled the skiffle craze in Britain, the music trend from which the great rock bands of the British Invasion, such as the Beatles, would arise. The pirate, an Irish musician named Lonnie Donegan found fame in the UK by presenting Lead Belly’s songs as if they were his own. As George Harrison later remarked of the legacy: “No Lead Belly, no Beatles.” Meanwhile, recordings of Lead Belly himself directly influenced artists such as Pete Seeger, Joan Baez, Bob Dylan, and Harry Belafonte. Lead Belly remained popular. The musicians of Nirvana considered Lead Belly their favorite artist. A posthumous anthology of Lead Belly’s music won a Grammy in 2015.

Lead Belly’s life story helps illustrate the larger story of racism. Discrimination against a person based on race has no scientific validity. We humans are all thoroughly humans in our capacities for creativity, care, and wit. In the genetic sense, we are in fact remarkably homogeneous.

## RACISM

Due to periods of small populations in our past, we are significantly less genetically diverse as a species than nearly any of our fellow primates. The idea of distinct biological human races is a fiction. The harms committed under its assumptions are not, and this is what the term anti-racism means. Much work remains to repair from the centuries of violence and exploitation committed during the fiction of racial difference.

Amid everything, culture—not race—makes a meaningful difference. It is a difference we should treasure. We aren't that genetically distinct from chimpanzees or bonobos, yet the small genetic gap between us and our relatives made space for an enormous shift: cultural evolution. We developed symbolic language, tool use, complex social relationships, and reflective thought. Humans adapted to nearly every habitat on earth not by changing biologically much, but by changing how we live. We passed on knowledge, told stories, made art. We tested out millions of ways to be human.

This cultural diversity is one of our greatest assets. It makes us more resilient, more creative, more able to solve shared problems. When cultures are suppressed, when languages are lost, when traditions are erased—we all lose. The fiction of race impoverishes not only those it targets for violence but the entire human family. Lead Belly and his complex, painful flourishing of music gives a sense of racism and culture.

So, I say to you now: stay woke, and rock on.

Thank you.



# on Evolution

# EVOLUTION

Friends,

A 2024 Gallup poll found that about 37% of Americans that God created humans in their present form within the last 10,000 years. This belief has decreased only slightly since the turn of the century. This belief goes against archeological evidence, which indicates that humans evolved from similar species roughly 300,000 years ago.

The United States today presents more religious opposition to the theory of evolution than Darwin experienced in his lifetime, in Victorian England. Rigid Biblical belief is more common and better politically organized now than then.

This belief coalesced most likely due to fear of social moral decay. As Darwin's opponents asked during his lifetime: if humans are descended from apes instead of angels, who are we? What does the world mean? How do we live moral lives? Many people chose to shut out evolution and seek answers only from the Bible. I'd like to reach out with a message: scientific findings about evolution since Darwin have decreased, if not eliminated, those reasons for fear. I'll outline reasons for accepting evolution with wonder and joy.

Evolution is not just competition. People often misunderstand this.

Yes, there is struggle. Life is not easy. But the understanding of evolutionary biology since Darwin has been enriched by genetics, ecology, and social science. Evolution is not only competitive—it is collaborative. It is aesthetic. It is utterly creative.

# EVOLUTION

Charles Darwin gave the framework: species change over time through natural and artificial (human) selection. He saw that creatures vary, and those variations—when helpful—are passed down. But Darwin worked with what he could observe. He didn't yet know about genes. Or epigenetics. Or symbiogenesis. Or the microbiome. Or horizontal gene transfer. Or group selection.

Since Darwin, we've come to understand that the process of evolution can be described in three powerful words:

Variation, Selection, Replication.

And that framework doesn't just describe the evolution of species—it describes cells, ideas, technologies, languages, institutions, cultures.

**Variation** is everywhere. In genes, yes, but also in behavior, in ecosystems, in thought. Variation is life trying new things.

Diversity isn't just a byproduct—it's essential for resilience and adaptation.

**Selection** is the living environment offering feedback. A change that works—physically, socially, emotionally—tends to persist. The feedback loops vary by scale and system. In a rainforest, it might be climate on a water-loving plant. In a school, it might be community support for students. In evolution, selection isn't always brutal. It can be gentle, subtle, and mutual.

**Replication** is how patterns carry forward. Genes replicate. Memes replicate. Traditions replicate. And in every act of replication, there's potential for mutation—**variation** again—and the whole cycle continues.

## EVOLUTION

What emerges from these three ingredients is extraordinary. Bacteria and whales. Butterflies and symphonies. DNA and villages.

Let me expand on the collaborative nature of life's evolution. Multicellular organisms, including us, are made of once-independent cells that joined forces. Trees and fungi form mutualistic networks underground. Human beings, as a species, rely on cooperation for survival possibly more than any other. Language, story, and shared culture evolve through relationships.

We are all connected. Every plant, animal, microbe—kin. This view does not deny meaning or morals. In fact, it deepens it. The spiritual world that some defend by denying evolution becomes, through the lense of evolution, even more wondrous. Life is not static. It is special and becoming.

In this, many spiritual leaders agree. Starting with Pope John Paul II in 1996, the Catholic Church has affirmed that evolution and faith are not in conflict. Taoism, a major philosophy and religion of China, might help explain the high rates of acceptance of evolution in China. Taoism focuses on processes of becoming.

The dust of stars forms cells. Cells form minds. Minds form compassion.

Evolution describes a vast, unfolding story—older than any scripture, but not in conflict with any truth-seeking tradition.

It teaches us humility: we humans are recent arrivals in life's evolution.

# EVOLUTION

It teaches us hope: life is full of unexpected brilliance.

And it teaches us responsibility: human behavior is now a major force shaping evolution itself. Through culture, technology, and environmental impact, we are active participants in life's future.

So yes—evolution explains our origins. In doing so, it does not leave us morally adrift. We now know that empathy and responsibility are part of living with good judgement. We can understand ourselves as apes with angels.

Let us listen to our better angels.

Thank you.



# *en Femininism*

# F E M I N I S M

Friends,

Feminism is a big topic—plus deeply personal and often misunderstood. To help keep track of it, I’m going to organize a quick summary onto one hand. Then I’ll go through the evidence.

Pinkie finger: Widespread prejudice against women exists. Ring finger: No one is sure why this prejudice against women exists, but there are some good hypotheses. Middle finger: This prejudice overlaps with other kinds of prejudice, such as racism or anti-semitism. Pointer finger: Ending prejudice of all kinds is a great plan and we have particularly strong data recommending ending the prejudice against women. Finally, If we take all of these elements together, we can arrive at our conclusion, a thumb’s up: Feminism is for everybody.

Whether or not you stay through the evidence, you can now take that summary with you and give a thumbs up to your fellow feminists.

Pinkie finger: Widespread prejudice against women exists.

Small finger for a big problem. Around the world, women face discrimination in employment, healthcare, education, politics, safety, and self-expression. The gender pay gap began thousands of years ago and today exists in every country. Women remain underrepresented in leadership positions, overrepresented in unpaid caregiving roles, and disproportionately affected by poverty. Violence against women—especially intimate partner violence—continues at devastatingly high rates.

## FEMINISM

Even in places where formal equality exists on paper, the prejudice persists. It can be subtle—interrupting women more in meetings, not taking them as seriously—or it can be severe—allocating fewer resources to studying women’s health issues, or omitting women’s health from international law.

Again, pinkie. Widespread prejudice against women is real.

Ring finger: No one is totally sure why this prejudice exists, but there are good hypotheses.

The finger where we put rings as a symbol of relationships works well here because the roots of gender inequality reach thousands of years into the history of human relationships.

There are many hypotheses—biological, cultural, economic—and no single, tidy explanation.

One leading hypothesis suggests that the prejudice started when some early agricultural societies began waging larger wars: the ruling classes reshaped culture to pressure and even force women to focus on having more babies, to produce more and more agricultural workers and soldiers.

Meanwhile, any societies that chose male lineages for economic and cultural inheritance had to struggle with the fact that paternity is much harder to prove than maternity. Childbirth is way more obvious than conception. To ensure paternal identity, male lineage societies often resorted to controlling women’s sexuality and entire lives. The invention of DNA testing in the 20th century eased this problem considerably.

## FEMINISM

Sexual pleasure might have been a tense issue. Women are much more likely to experience multiple orgasms. Men have to practice in order to orgasm separately from their ejaculation, and male ejaculation takes time to recharge.

Amid everything, societies developed various cultures about menstruation, with some considering it powerful and sacred while others regarding it as dirty or even dangerous. Aside: only 2% of mammals menstruate—most of our fellow primates, elephant shrews, some bats, and one species of rodent, the spiny mouse. That's it for menstruation.

While we don't know exactly why or how patriarchy developed, we can agree that it has been incredibly long-lasting and widespread. Hopefully, studying its origins helps us develop equality.

Middle finger: Gender prejudice overlaps with other kinds of prejudice.

Many people raise this finger as a sign of anger. This might be a helpful symbol here, for the anger wound up in social prejudices.

Prejudice against women overlaps with nearly every other kind of social prejudice, such as racism, classism, ableism, Islamophobia, and anti-Semitism. Nearly every discriminated social group includes women. Forms of social discrimination interact with each other in complex and sometimes catastrophic ways.

Black women endured through sometimes painfully divided movements to secure voting rights, encountering factions that would prioritize white women or black men.

## FEMINISM

To this day, murders and kidnappings of indigenous women often go under-investigated. Transgender communities experience appalling harassment. The list of overlapping prejudice goes on, long and tragic.

We need intersectional feminism. Coined by legal scholar Kimberlé Crenshaw, the term intersectional feminism reminds us that gender justice means justice for all women—and for anyone marginalized by rigid gender expectations. It becomes a synonym for the general political meaning of woke.

Pointer finger: Ending prejudice of all kinds is a great idea—and we have especially strong evidence for ending the prejudice against women.

This is the finger we use to point directions. Study after study confirms that gender equality benefits everyone.

Companies with more women in leadership perform better, including profit-wise. Communities with empowered women have stronger economies and healthier children. Countries with greater gender equality are more peaceful and more democratic. Gender equality might be one of our greatest tools to stabilize the climate, by stabilizing the population and increasing workplace productivity.

Even from a purely practical standpoint, excluding half the population from full participation in society is inefficient and self-defeating. But beyond practicality, equality is simply the right thing to do.

## FEMINISM

Every person deserves the same opportunity to live fully, freely, and safely—regardless of gender.

Thumbs up: Feminism is for everybody.

With all the fingers together, we can make this conclusion. Feminism is about creating a world where everyone can thrive. Anyone can be a feminist. It means understanding that women—and all people—deserve fairness, dignity, and respect.

So, to review:

Pinkie: Prejudice against women is real.

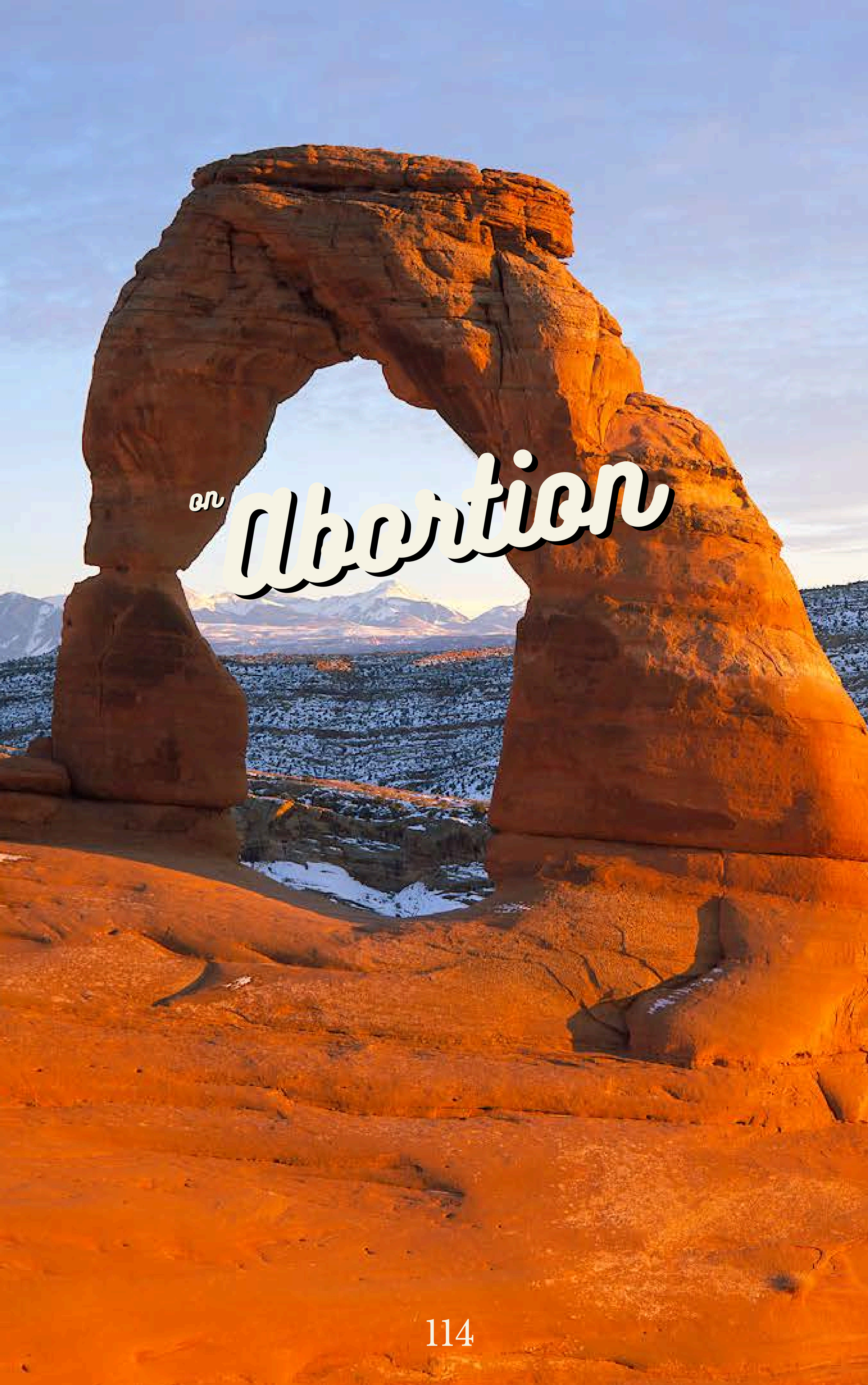
Ring: The causes are complex and rooted in relationship.

Middle: Prejudice against women overlaps with other forms of prejudice, so we need intersectional feminism.

Pointer: The solution benefits all.

And finally, thumbs up—feminism is for everybody.

Thank you.



*on* **Abortion**

# ABORTION

Friends,

Partisan divide over abortion has widened by 20% over the past decade: today 85% of Democrats support legal abortion, compared to 44% of Republicans. Some opponents of abortion wish to assert the human right of an embryo from the moment of conception. Overall, six in ten Americans support legal abortion in most or all cases. Four in ten Americans oppose it in most or all cases. I'd like to share a story with everyone, about the dignity of life and what I think it means for this matter of abortion.

Studying biology at UC Berkeley involved performing multiple dissections: of a rat, a cockroach, an earthworm, a chicken egg. Dissections introduce students to the remarkable structures of life—such as the breathing tubes of a cockroach and the five hearts of an earthworm. All of the dissections made deep impressions on me, but the chicken egg more than any other. The eggs were fertilized.

I stood frozen over the microscope, overcome by the beauty of the curled embryo. It glowed, lit from behind. Vertebrate embryos all resemble each other at such early ages. When I saw that tiny chicken, I felt deep respect for the connection between all generations: the connection between parents and children over deep time.

Then, there in the light, the little chicken's heart stopped beating. It was a routine part of the lab. Sudden words flashed in my mind: "All life is sacred, not all life is saved."

## ABORTION

I need to define those words here because they might mean deeply different things to different people. They also leaped clumsily into my mind as the most fitting words for an otherwise indescribable moment. They mean plenty of other things to me in other contexts. Specifically at the sight of the chicken embryo's death, "sacred" meant worthy of reverence and protection; "saved" had the same meaning as "my friend saved my life," or, "the vaccine saved millions of children." I felt humility and awe at every spore, seed, and egg. I felt grief and joy at life. I felt immense reverence for humans.

Whether it was the same day or the same week, I don't remember, but I very soon encountered embryos again. Out on the school plaza, anti-abortion activists set up posters depicting embryos smeared across United States coins, as if to showcase the tiny size of the embryos. The activists displayed these side-by-side with images of then President Obama. As an enrolled student of not just biology but also rhetoric—the study of persuasive images and language—I flared up in silent anger. The bold reds of the embryos next to the political symbols felt cheap and manipulative to me. Whatever the authors' intentions, the anti-abortion visual argument felt disrespectful to life. My heart hurt. Still overwhelmed by the illuminated chicken, I walked past the protest and its counter-protest to go home.

Nociception is the basic response of a nervous system to an irritating stimulus. Pain is the subjective, inner experience of that nociception. Nociception does not need a brain; pain does. Chickens go from embryo to chick in about 21 days. Their heartbeat begins a few days after fertilization. Both nociception and pain develop about ten days later.

## ABORTION

In humans, heartbeat begins between 5 and 6 weeks. Repeated, clinical study indicates that nociception begins at 7.5 weeks and pain around 23. Surgeons carefully apply fetal anesthesia for procedures after 23 weeks.

I will not discourage anyone from offering support to the family of an unborn baby—I have a special story about that I might share another time. I believe that families of all kinds need love and care. As for abortion, I support swift, safe, widespread, legal access. Whatever the circumstances that lead to the decision, let abortion happen as soon as possible in gestation. Let everyone quickly make up their minds and respond.

Fecundity is part of life's creativity and resilience. The billions of spores, seeds, and eggs in the world ensure that life will innovate. It turns out that even individual plants respond to their environments with unique "personalities." The super abundance of spores, seeds, and eggs also help ensure that life will keep going. Even after disaster, populations recover. Meanwhile, at the same time, life can also learn to scale back fecundity. Species that live long, complex, stable lives tend to have few babies.

Family planning is a skill. Communities are learning. Culture is developing. The specific tools sometimes require adjusting, such as switching contraceptive methods to alleviate side-effect symptoms like anxiety. Methods occasionally fail.

## ABORTION

A culture can provide access to abortion while still cherishing the dignity of life. A functioning democracy can trust its people to navigate difficult choices: supported by science, guided by compassion, and free from coercion. The recent abortion bans violate these principles, and the principles of most Americans. We can do better to support families.

Thank you.

An aerial photograph of a turbulent ocean surface, showing a dense pattern of white foam and deep green water. The text "on Wisdom" is overlaid in the center-left area. "on" is in a small, white, sans-serif font, and "Wisdom" is in a large, bold, white, cursive script font with a black drop shadow.

*on* **Wisdom**

# WISDOM

Friends,

Throughout this series, I've mentioned wisdom. It's one of those quiet, slippery concepts that underlies other concepts. So, I want to speak to it directly.

Wisdom means good judgment. But what is good? What makes judgment wise?

It won't get us all the answers, but it might be helpful to root our understanding with something tangible. The anthropologist and neuroscientist Terrence Deacon once introduced me to the term normative chemistry. The phrase struck me. It emphasizes that values like "right" and "wrong" don't only show up in moral philosophy or law. They show up in life itself.

From the moment life emerges—single-cell organisms or collectives of them—there is already such a thing as better or worse. A cell must respond to its environment: temperature, acidity, salinity, availability of nutrients, the presence of heavy metals or poisons. There is a right pH. A wrong temperature. A good level of sodium. A bad dose of mercury. The cell doesn't just passively exist—it senses, responds, adjusts.

This is not metaphor. It is physiology. To live is to make judgements.

As life becomes more complex, so do norms. Multicellular organisms develop internal systems for maintaining balance—what we call homeostasis. When a body overheats, it sweats. When sugar levels drop, it releases hormones.

## WISDOM

The body is always making adjustments to maintain a healthy range—a wise range.

Add a brain, and judgment gets more complicated. Was that that thing I ate food, medicine, or poison? Add language, culture, and memory, then good judgement becomes what we recognize as ethics. Was that an ethical exchange? Add billions of humans in constant contact, and suddenly wisdom becomes one of our most urgent collective needs.

We live in a moment when many of our systems—political, ecological, technological—are too large and fast for any one person to fully grasp. At the same time, our individual and collective judgments carry enormous consequences.

We decide what to build, what to destroy, what to value, and who to believe. We vote. We parent. We govern. We code. We teach.

We figure out that feeding corn to cows is chemically devastating for the land, the cows (who evolved to digest grass), the atmosphere, and us. We learn that trauma produces long-lasting biochemical disruptions. We figure out how to prevent the spread of sexually transmitted diseases. We learn a lot and still have more to learn.

In a world of overlapping crises, wisdom is essential and still mysterious. How do we cultivate it?

One way is to recognize that wisdom exists across levels of scale.

## WISDOM

Each of us has a normative chemistry—a body-mind that needs sleep, safety, food, connection, and truth. Wisdom starts with listening to our own signals. Are we in balance? Are we caring for the internal ecosystems that make judgment possible?

Wisdom applies in our relationships. Are we responding with care? Are we speaking with truth and compassion? Are we holding sustainable boundaries?

Wider still, wisdom governs the organizations and systems we create. Do our policies stabilize or destabilize human life? Do our technologies nourish dignity or diminish it? Do our economies reflect what life actually needs?

And finally, wisdom must interface with the planetary envelope—the larger chemistry of air, ocean, soil, and species. Life, as a whole, has thresholds. There are right and wrong amounts of carbon in the sky. There are right and wrong ways to relate to the land. There are such things as too much and too little water. There are living balances, and there are tipping points of collapse.

Deacon's phrase helps us think creatively and clearly about good judgement. We will still have to resort to philosophy and poetry because no biochemist will have all the answers; however, life itself has been experimenting with good judgment for over three billion years.

Of course, wisdom often involves nuance, slowness, attention, humility. It might feel delicate in a loud, fast world. We can protect and amplify it.

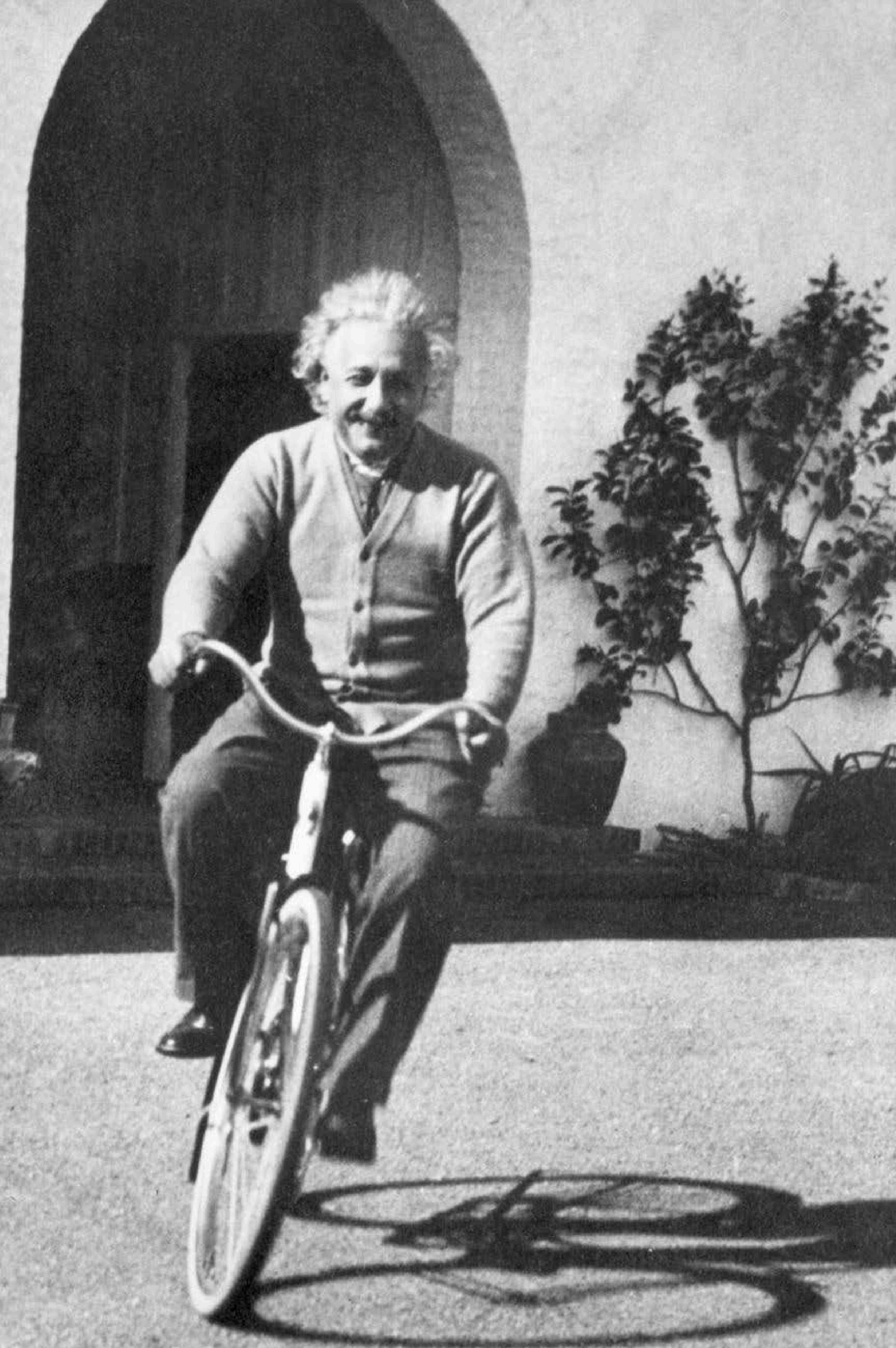
## WISDOM

Wisdom is not rigid perfection. It is a practice across scales. It is a process of ongoing adjustment and learning.

It asks us to listen—to our bodies, to one another, to the world.

We live in a world that is changing rapidly. The speed of decision-making often outpaces our capacity for reflection. Fortunately, wisdom is here right now. It is in our bodies, our stories, our languages, our traditions. It is in science and soil and poetry. We can keep learning.

Thank you.



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