Connecting

Connecting to deepened wisdom and deepened relationship

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Reason

Chalice Lighting

Words of Henry Ford: "Thinking is the hardest work there is, which is probably the reason why so few engage in it."

Check In Questions

Are you a "rational person"? In what ways? What makes you think so?

Defining Moment

From etymonline.com

reason (n.) c. 1200, "the intellectual faculty that adopts actions to ends," also "statement in an argument, statement of explanation or justification," from Anglo-French *resoun*.

The meaning "that which recommends itself to enlightened intelligence, a reasonable view of a matter" is from c. 1300. The sense of "grounds for action, motive, cause of an event" is from c. 1300.

The Enlightenment gave *reason* its focused sense of "intelligence considered as having universal validity ... so that it is not something that belongs to any person, but is something partaken of, a sort of light in which every mind must perceive" [Century Dictionary].

Reason itself has long been personified, typically as a woman.

What Is Reason For?

Reason can't tell you what to want. It can help you devise strategies for pursuing your purpose, but it can't give you a purpose. *Star Trek*'s Mr. Spock, for all his logic, had to derive his sense of purpose from somewhere else.

Scottish philosopher David Hume (1711-1776) said it plainly:

> "Reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them."

We are built to be highly social – so the passions that drive us tend to be social emotions. Even when it appears our reasoning is "bad," it may serve a social purpose. Confirmation bias, for example, may often lead us astray, but it serves a social purpose.

Confirmation Bias: The Case of Astrology

Or: *"The fault, dear Brutus, is not in our stars, but in ourselves…."*

Confirmation bias is

> "the tendency to search for, interpret, favor, and recall information in a way that confirms one's preexisting beliefs or hypotheses, while giving disproportionately less consideration to alternative possibilities." (Wikipedia)

We all do this. It's a huge influence on the way our brains work. We have been aware of confirmation bias at least since ancient times. Thucydides observed, some 400 years BCE:

> "It is a habit of mankind to entrust to careless hope what they long for, and to use sovereign reason to thrust aside what they do not fancy."

Dante's *Divine Comedy* notes,

> "opinion—hasty—often can incline to the wrong side, and then affection for one's own opinion binds, confines the mind."

Thomas Jefferson said,

> "The moment a person forms a theory, his imagination sees in every object only the traits which favor that theory."

Confirmation bias accounts for the tendency for astrology fans to notice in others and in themselves the traits that astrology ascribes. But the problem goes deeper than that. Not only is there an unconscious tendency to find confirmation for our beliefs, but there is a bias toward confirming mere suggestions. If I suggest to you that a mutual friend can be understood as being like a bull, say, or like a lion, *even if you don't believe me*, the mere suggestion creates an involuntary, unconscious filter increasing your attention to the person's bullish or leonine qualities (whatever you may take those to be).

Careful observers of the stars have known for centuries that as the sun follows its annual track against the backdrop of the zodiac, there are 13 constellations that the sun goes

through. And the time it spends in each constellation is highly variable. A few years ago a NASA blog for explaining science to nonscientists explained:

> "The constellations are different sizes and shapes, so the Sun spends different lengths of time lined up with each one. The line from Earth through the Sun points to Virgo for 45 days, but it points to Scorpius for only 7 days. To make a tidy match with their 12-month calendar, the Babylonians ignored the fact that the Sun actually moves through 13 constellations, not 12. Then they assigned each of those 12 constellations equal amounts of time. Besides the 12 familiar constellations of the zodiac, the Sun is also aligned with Ophiuchus for about 18 days each year."

Here's the actual timetable: Aries (Apr 18 – May 13), Taurus (May 13 – Jun 21), Gemini (Jun 21 – Jul 20), Cancer (Jul 20 – Aug 10), Leo (August 10 – Sep 16), Virgo (Sep 16 – Oct 14), Libra (Oct 14 – Nov 23), Scorpio (Nov 23 – Nov 29), Ophiuchus (Nov 29 – Dec 17), Sagittarius (Dec 17 – Jan 20), Capricorn (Jan 20 – Feb 16), Aquarius (Feb 16 – Mar 11), Pisces: (Mar 11 – Apr 18).

For some folks on social media, this came as startling news. Reactive denial was common. One typical comment: "Oh hell, no. You did NOT just turn me into a Gemini. NASA be damned, it ain't happening."

In fact, no one's astrological sign changed. The astrological zodiac is based on the seasons, not what constellation the Sun is in. Aries begins on the vernal equinox, Cancer on the summer solstice, etc. The 12 signs of the zodiac divide each season into three equal parts. The astrological zodiac does NOT, after all, represent the dates when a line from Earth to Sun would point to the given constellation. Rather, the signs of the astrological zodiac represent the first, middle, or last third of spring, summer, fall, or winter.

Still, the folderol got me to musing about the way the brain's suggestibility introduces a form of confirmation bias. My daughter was born in the middle-third of autumn, which makes her, in Babylonian astrology, a Scorpio. According to NASA, however, the Sun, on her birthday, was in Libra. What subtle differences might it have made through the years of her upbringing if one minor background image/metaphor I had of her had been a balance scale rather than a reactive stinging arachnid? I don't know what the personality attributes of a Scorpio are supposed to be, and I don't believe that people who happen to be born in late October or early or mid-November are any more likely than anyone else to have any given measurable personality trait. The existence of such likelihood would be an empirical finding, and numerous studies have found no correlations between any measurable personality attribute and date of birth. Nevertheless, my brain, in some unconscious way that it couldn't help, associated the image of a scorpion with my daughter – along with associating an image of a fish (Pisces) with myself and an image of a crab (Cancer) with my spouse. Suppose, instead, that my brain had associated the image of a balance scale with my daughter. Would my own reactivity to her have been assuaged just a tiny bit by this minuscule nudge toward seeing her as *skillfully balancing competing impulses and pressures* and away from *likely to inflict pain if threatened*? Or, on the other hand, would seeing her as a Libra have made me slightly more likely to treat her as passive, while seeing her as a Scorpio helped incline me to see her as fierce?

Confirmation bias is a problem. But not having it at all would be an even bigger problem. Confirmation bias, together with its cousin the behavioral confirmation effect (a.k.a., the "self-fulfilling prophecy" that happens when your expectations influence your behavior to bring about the expected result) helps us have a coherent sense of ourselves, our world, and our purpose in it.

The Evolutionary Purpose of Reason: Persuasion, not Truth

Hugo Mercier and Dan Sperber have a theory of human reasoning: that it evolved not in order for humans to better discern truth or make better decisions. If that were its evolutionary function, surely natural selection would have weeded out confirmation bias. Rather, reasoning evolved just in order for us to persuade one another. We are deeply social animals, and having a shared view of things helps us like each other and get along -- which is often more important than whether the shared view of things is true.

Producing a conclusion that the group collectively endorses is a greater boost to our survival odds than producing a conclusion that is true but garners no consensus adherence. So confirmation bias is valuable: it keeps us focused on the evidence we can point out to each other to reinforce our consensus and bring lagging skeptics on board.

It may even be more helpful if the consensus opinion isn't true. We evolved in a context of intratribal dependency and also intertribal conflict -- we really needed to get along with our own people and also really needed to be able to fight against outsiders. Tribal survival depended on being able to defend our stuff (our turf, our food, our reproductive-age males' and females' access to each other), and, when times got tough, survival sometimes depended on being able to conquer a neighboring tribe and take their stuff. Shared viewpoints would have functioned to strengthen the bonds within our tribe, and also would have facilitated a useful hatred of neighboring tribes who had different viewpoints. We needed to have viewpoints that were a product of intratribal conversation and *weren't* terribly closely determined by reality -- because then the other tribe would arrive at the same conclusion, and we wouldn't be able to hate them for their different beliefs. Confirmation bias suits the need with amazing efficacy.

The same process also produces our sense of self. The self, as George Herbert Mead said, is a "generalized other" -- meaning that we develop our sense of who we are by learning about others and internalizing our understanding of others-in-general. The same persuasive processes we use with each other to form a coherent group, we also use on ourselves to form a coherent identity. My confirmation bias helps me know who I am. The behavioral confirmation effect (self-fulfilling prophecy) helps me act in a way that I not only observe confirmation of my beliefs, but engage with the world to make confirmations happen. Without these, I would know neither who I am nor whose I am. As Joseph Campbell taught us, our myths -- which depend on confirmation bias to sustain -- are not only powerful, but also necessary.

What is to be done? Some Things Everybody Can Work On

#1. Don't believe what you think. You were made to have confirmation bias, and to think that your own beliefs are true. Even suggestions you don't believe have a way of directing your attention and action to seek their confirmation. Now that you know this, you can partially counter it just by noticing it at work. When you notice it, say to yourself: "There goes my brain just wanting to confirm. I can't entirely stop it from doing that, but I can deliberately withhold cognitive assent from what it finds." Being a fan of a sports team can be good practice. Notice how you think the world is a better place if your team wins. Notice how you can't really believe that -- but you cheer for your team anyway, just because it's fun. Can you consciously bring the same attitude to other things that you think?

#2. Intentionally cultivate negative capability. "Negative capability" was John Keats' term for "capable of being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason." Work on being comfortable not knowing. As the Korean Zen master Seung Sahn often repeated: "Only don't know." Cultivate awe and wonder and mystery -- which depend on the absence of a satisfying story/explanation. Refuse, to the extent you can, to let any story/explanation satisfy.

#3. Use play to switch around your images and metaphors. Your brain is built to latch onto stories, images, metaphors. You can't help that, but you can loosen the grip of any one story by playing around with other stories. (I might have countered the biasing effect of a scorpion image for my daughter by playfully suggesting that we think of as many ways as we could that she was actually a good example of a Libra. And so on for all the zodiac signs.) Read lots of novels, exposing yourself to many different stories. People who expose themselves to a great multiplicity of stories are less in the grip any one bias. (Well, I think so. Or maybe that's just my experience filtered through my confirmation bias.)

#4. Plunge in. This one may seem counter-intuitive since it amounts to heightening your bias. There is, however, something true about every bias. Plunge in and see what you can learn about yourself from stories woven from random events. The lines on your hand, the Tarot cards that happen to come up, your zodiac sign -- explore what meaning can be made out of such coincidences. Pay a visit to a palm reader, or Tarot psychic, or astrologer, and let them tell you the detailed story they make up. You actually will learn something about yourself. Even if it isn't any more true of you than it would be for anyone else, it's still got some truth for you. Suppose you were born the first third of winter. Astrology says you're a Capricorn, so reflect on your goatishness. Maybe *everyone* is a bit goatish, but it's still a helpful exercise to look at how *you* are. It brings attention to an aspect of yourself. You can then better notice when that aspect is asserting itself. When you notice, you can then decide whether that's really the aspect that you want at the fore just then. The metaphors, images, or stories that most insidiously influence us are the ones that operate largely unconsciously. Fleshing out the details helps us be more conscious of them.

Being human is great -- and, anyway, what else are you going to be? The gifts come with shadows, though. If we know them for what they are, they can be kinda fun.

Aside from these four suggestions, it is also possible to go further to cultivate a rational outlook. For many of us, this will be difficult and demanding.

If You Really Want to Get Serious about Rationality

We come now to the hard part. Of course, we tend to think of ourselves as people who follow reason. (It's those *other* people who are unable to reason properly!) OK, so here's a test. This example is drawn from Steven Pinker's 2021 book, *Rationality: What It Is, Why It Seems Scarce, Why It Matters*.

Suppose that:

- The prevalence of a certain type of cancer – call it cancer X -- is 1% of the adult population.
- The sensitivity of a test for cancer X is 90% (that is, 90% of adults who have cancer X, and take the test, get a positive result).
- The false-positive rate is 9 percent (that is, 9% of people who do NOT have cancer X, and take the test, get a positive result).

Audrey takes the test, and it comes back positive. What's the chance she has that cancer X? Perhaps you want to say there's a 90% chance Audrey has cancer – after all, the test was positive, and the test was 90% accurate.

But let's break it down. Suppose we administer the test to a randomly selected 10,000 people.

We can figure that 100 people have cancer X (1% of 10,000). Of these, 90 people get a true-positive result (because 90% of those who have the disease get a positive test result), and the remaining 10 people with cancer X get a false negative result.

The other 9,900 people do not have cancer X (99% of 10,000). Of these, 891 of them will get a false positive result (because there's a 9 percent false-positive rate, and 9% of 9,900 equals 891). The remaining 9,009 people get a true negative result.

Thus, for 10,000 people taking the test, we will get:

True positives:	90
True negatives:	9,009
False positives:	891
False negatives:	10

Out of all the positive test results, 90 of them are true, and 891 are false: i.e., 9.2% of the positive results are true positive, and the remaining 90.8% of positive results are false positive. So Audrey's positive test result means that she has a 9.2% chance of having Cancer X.

Where did our intuition go wrong? We tend to forget about the base rate: that's the 1% of the population that has the cancer.

But, of course, the base rate matters a lot, because 9% of the 99% of people who don't have the cancer will get a false positive – and that'll be a lot more than 90% of the 1% who get a

true positive. That's good news for Audrey, but maybe not such good news for our human rational capacity.

Bayesian Reasoning

The basic idea of Bayesian reasoning (developed by mathematician and minister Thomas Bayes, 1702-1761), is simple. When new information comes in, you don't want it to replace old information wholesale. Instead, you want it to modify what you already know to an appropriate degree. The degree of modification depends both on your confidence in your preexisting knowledge and on the value of the new data. Bayesian reasoners begin with what they call the "prior" probability of something being true, and then find out if they need to adjust it.

When actual doctors are given the case of Audrey and Cancer X, as Steven Pinker reports:

> "The most popular answer from a sample of doctors given these numbers ranged from 80 to 90 percent That's right, the professionals whom we entrust with our lives flub the basic task of interpreting a medical test, and not by a little bit. They think there's almost a 90 percent chance she has cancer, whereas in reality there's a 90 percent chance she doesn't."

The doctors have the answer wrong because they are putting too much weight on the new information (the test results) and not enough on the "priors" they knew before the results came in—the fact that Cancer X is a fairly infrequent occurrence.

Living by Bayes means that there are no certainties, only probabilities. The steps are:

1. Define the problem: Identify the question or hypothesis to be tested.
(EX: Audrey has Cancer X)

2. Prior probability (A): Before considering any new data, formulate your best estimate of the probability that the hypothesis is true.
(EX: The rate of Cancer X in the adult population is 1%, so that is our "prior." A = .01.)

3. Probability of data, given hypothesis (B): Formulate your best estimate of the probability of the new data being observed *if the hypothesis is true*.
(EX: The new data is the positive test result, which, if the hypothesis is true, has a 90% probability, so, B = .9.)

4. Total Probability of Data (C): Formulate your best estimate of the total probability that this data would be observed (the chance it would be observed if the hypothesis is true, plus the chance it would observed if the hypothesis is false).
(EX: There are, in this case, out of 10,000 tests, a total of 981 positive results [90 true positives plus 891 false positives]. That's a total probability of a positive test result of .0981.)

5. Posterior probability (D): You can now update your estimation of the probability that the hypothesis is true using Bayes' Theorem:

$$D = (AB)/C$$

*(EX: A * B comes out to .009, and C is .0981. Then: .009/.0981 = .091743 – or, in percentages, about 9.2%)*

With practice, a person can internalize this formula and use it to continuously refine probabilities as new data emerges for anything that affects them or that they may happen to care about. A number of people – committed members of the "Rationality Movement" -- do live this way (I am not among them).

How important is it to you to live as rationally as possible?

Joshua Rothman on Bayesian Reasoning[1]

Bayesian reasoning is an approach to statistics, but you can use it to interpret all sorts of new information. In the early hours of September 26, 1983, the Soviet Union's early-warning system detected the launch of intercontinental ballistic missiles from the United States. Stanislav Petrov, a forty-four-year-old duty officer, saw the warning. He was charged with reporting it to his superiors, who probably would have launched a nuclear counterattack. But Petrov, who in all likelihood had never heard of Bayes, nevertheless employed Bayesian reasoning. He didn't let the new information determine his reaction all on its own. He reasoned that the probability of an attack on any given night was low—comparable, perhaps, to the probability of an equipment malfunction. Simultaneously, in judging the quality of the alert, he noticed that it was in some ways unconvincing. (Only five missiles had been detected—surely a first strike would be all-out?) He decided not to report the alert, and saved the world.

Bayesian reasoning implies a few "best practices." Start with the big picture, fixing it firmly in your mind. Be cautious as you integrate new information, and don't jump to conclusions. Notice when new data points do and do not alter your baseline assumptions (most of the time, they won't alter them), but keep track of how often those assumptions seem contradicted by what's new. Beware the power of alarming news, and proceed by putting it in a broader, real-world context.

In a sense, the core principle is *mise en place*. Keep the cooked information over here and the raw information over there; remember that raw ingredients often reduce over heat. But the real power of the Bayesian approach isn't procedural; it's that it replaces the facts in our minds with probabilities. Where others might be completely convinced that G.M.O.s are bad, or that Jack is trustworthy, or that the enemy is Eurasia, a Bayesian assigns probabilities to these propositions. She doesn't build an immovable world view; instead, by continually updating her probabilities, she inches closer to a more useful account of reality. The cooking is never done.

Julia Galef: The "Scout Mindset"

Julia Galef is co-founder of the Center for Applied Rationality and hosts a podcast called "Rationally Speaking." Her book, *The Scout Mindset: Why Some People See Things Clearly and*

[1] Excerpted and adapted from "Why Is It So Hard to Be Rational?" *New Yorker*, 2021 Aug 16.

Others Don't distinguishes "scouts" from "soldiers." The "scout mindset" is seeking out one's blind spots, testing one's assumptions, and changing course – in contrast to the "soldier mindset," of defending one's positions at any cost. The "scout" is open-minded, curious, and receptive to new information. The "soldier" is defensive, biased, and entrenched in existing beliefs.

Most of what passes for reasoning is "motivated reasoning" – which sometimes has all the appearance of the reasoning a "scout" would use, but if it comes from a priority on defending their beliefs over seeking truth, then it's "motivated." The novelist Upton Sinclair put it this way: "It is difficult to get a man to understand something when his salary depends on his not understanding it."

Our brains, even when we have no discernible "motivation" – or self-interest – dictating our conclusion, are intrinsically prone to biases and cognitive shortcuts that can lead to systematic errors.

The "scout" mindset embraces uncertainty, humbly recognizes the limits of one's knowledge, considers diverse perspectives and works to disregard what she may want to be true when evaluating evidence. The "scout" thus develops not only better decision-making, but also has better mental health and better relationships.

Looking Out for the Many Cognitive Biases

Just as the medieval Christian monastics perceived sinfulness as ever-present even amidst their commitment to a learned and holy life, so the *rationalistas* understand that delusion is ever-present even amidst commitment to reason. Ambrose Bierce's "Devil's Dictionary" defined "rational" as: "Devoid of all delusions save those of observation, experience and reflection." Which, of course, still leaves a lot of scope for delusion -- and highly rational people know this.

Rationality is one of humanity's super-powers. And so is confirmation bias. Ninety-nine-point-three percent of the time homo sapiens have been on the planet went by before we hit upon the scientific method – but we did get there. Eventually.

We are bedeviled by cognitive biases, of which confirmation bias is a biggie, but by no mean the only one. We will fall prey to the sunk cost fallacy – which is a tendency to follow through on an endeavor if we have already invested time, effort, or money into it, whether or not the current costs outweigh the benefits. When we should be cutting our losses, we instead keep at an unsuccessful effort in the hope that the costs we've already sunk into a project not go to waste. The U.S. withdrawal from Afghanistan – the way it happened – left much to be desired, but the regret that centered on not wanting the billions of dollars and the thousands of lives to have "all been for nothing" illustrates the sunk-cost fallacy. Better to cut our losses than keep throwing more lives and resources into a fruitless endeavor.

There's the framing effect – the framing of a decision as protection against loss or a possibility of gain. We are built to be more oriented to protect what we have than to gain something more. And that's not itself an irrational thing – but becomes so in cases where the avoided loss and the accrued gain are just matters of phrasing. For instance, to

encourage students to register early, a college tried assessing a penalty fee for late registration. And then they tried offering a discount for earlier registration. Now, the amount of the discount and the amount of the penalty avoided were exactly the same – the bottom-line costs for registering later and for registering earlier were the same. But when it was called a discount 67% of students registered earlier, and when it was called avoiding a penalty 93% of students registered earlier. That's the framing effect.

Then there's the overconfidence effect. For certain types of questions, answers that people rate as "99% certain" turn out to be wrong 40% of the time. A variation on that is the "illusory superiority" effect – which we see when nearly 90% of drivers rate themselves above average.

We are bedeviled by cognitive biases. On the plus side, we are also beings capable of learning to recognize them. We can train our brains to notice when they are being sucked in to a fallacy. There are trainings available for calibrating how certain we *feel* that a statement is true with our actual probability of being wrong about it.

We are capable of learning, remembering, and applying the Bayes rule that posterior probability is equal to prior probability times the likelihood of the data, divided by the commonness of the data. For some us, that's not hard. For many of us, living by Bayes just isn't going to happen. How far toward living rationally do you really want to go? Here's Joshua Rothman's conclusion:

"We want to be more rational as individuals, but not to overdo it. We need to know when to think and when to stop thinking, when to doubt and when to trust. We want NOT to be duped by our own cognitive biases, but we also want NOT to turn ourselves into cogs in the machine. The realities of rationality are humbling. Know things; want things; use what you know to get what you want. It sounds like a simple formula. But, in truth, it maps out a series of escalating challenges. In search of facts, we must make do with probabilities. Unable to know it all for ourselves, we must rely on others who care enough to know. We must act while we are still uncertain, and we must act in time—sometimes individually, but often together. For all this to happen, rationality is necessary, but not sufficient. Thinking straight is just part of the work."

Reason

Sarah Lauer

I go foraging sometimes,
for miracles,
on the mornings when
my soul feels like lead
with the uncertainty
of here and of now
and of what comes next,
Seeking answers

I pluck morsels of knowledge
from the pages of history,
let their truths nourish me
and temper my fears with logic,
sustaining me through the
ongoing waltz of spirit and reason

Spiritual Pracitce

Try living just a little bit more rationally – for one week!

Draft a plan – it helps to write it down, so you might use your journal for this. What small step will you attempt to live a little more rationally. Just a baby step! What parts of your life will bring a little more rationality to – and how will you do it?

Try it for one week. It will help to journal at the end of each day about how your rationality plan went for you that day.

Faithyna's Family Page

Faithyna Leonard

Have you ever wondered why things happen or asked big questions like, "How does that work?" or "Why do we believe that?" That's reason in action! It's when we use our brains to think, question, and understand the world around us.

In our Unitarian Universalist church, we love questions! We believe it's important to use reason—to think carefully, ask questions, and explore what's true. Reason also helps us make big decisions. Whether it's choosing how to be kind, deciding how to take care of the planet, or figuring out how to treat our friends, reason helps us make good choices.

But reason doesn't just mean using your brain—it also means working together with your heart. It's how we figure out how to understand other people's feelings and make decisions that are good for everyone.

This month, we'll be talking about how we can use reason in our lives—whether we're solving puzzles, making decisions with friends, or learning about the world. We'll explore how thinking clearly and asking questions can help us grow and make the world a better place.

Stories this month:

Drew DeWalt, *The Wrong Book*.
Alicia Ortego, *Choices Are My Superpower*
Raven Harp, *Choices, Choices, Choices*
Michael Gordon, *The Choices I Make*

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Check Out. What overall message stands out for you?

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Chalice Extinguishing. Words of Albert Einstein: "The important thing is not to stop questioning. Curiosity has its own reason for existing."

Connecting is produced by the First Unitarian Church of Des Moines for use in small groups. Each month (ten months a year) explores a different theological or spiritual theme. Next issue: 2024 Dec: Awe & Wonder