Levels of Rational Certainty for Decision Making and Discussion

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Bio: Terry received his master's in education in 2003, and is a Certified Quality Engineer and Lean Agile Project Manager. Terry is an experienced teacher and parent. For more than twenty years he has brought his passion for continuous improvement into his professional and personal lives. As a Certified Quality Engineer, he has experience improving quality in both industrial and software development environments as well as in the educational venue. He has studied improvement theory and practice for over 35 years. Terry brings a coherent mix of change theory, classroom skills, and relationship development to his classroom, and inevitably to the lives of those around him.

Abstract

René Descartes once wrote about the chaotic irrationality inherent in the academies of science, arguing, with rhetoric, to establish what the truth was. He commented that any problem of moderate difficulty is likely to be understood by fewer, rather than greater numbers of people. Voting on the truth was nonsense, and there must be a better way. Levels of Rational Certainty provides a way to observe discussion, establish ground rules, and move toward either a better understanding, or an agreement to not discuss something at the current time.

Introduction to Reason

Especially within social media, we find ourselves discussing an incredible array of different subjects with complete strangers, often with those who do not share our views. This kind of discussion has occurred for thousands of years and in every venue. Using the information provided here, a person can rationally approach such a conversation and decide in advance whether their time spent will be fruitless, or if they will partake in an exercise of discussion to either teach or learn something new, sometimes both. Levels of Rational Certainty provides the framework for assessing our own beliefs and those of others, and to gauge how certain we feel about our views, and if we disagree, how to move forward in discussing our ideas. These guidelines for discussion present a model for taking discussions very seriously so as to reduce our own angst or frustration in the face of perceived closed-mindedness.

Introducing the Levels

When we discuss things informally with people, such as in a blog post response or in social media, we are often entering a conversation with people who have a variety of different levels of training in reason. It's like having a discussion about mathematics, but not knowing who in the room has only

an 8th-grade education in math, or high school algebra, or college statistics, or even a math degree. How we act in the discussion about math requires us to quickly assess the levels of others, and decide how we want to speak in such a varied group. If a high-level math professor wished to engage the minds of those without high school algebra, they would have to adjust their tone, their language, and perhaps even their goals.

Reasoning is no different. There are telltale signs of bad reasoning, and they can be seen all over social media. And yet, people at all levels of reasoning are capable of making arguments and believing things just like those with higher levels of logic or statistical backgrounds. How do we facilitate our conversations between disparate levels of preparation?

A Description of Likelihood – The Levels of Rational Certainty

Nonsense
- A stranger had a dream
- A friend had a hallucination
- A stranger heard someone say

Folly
- A friend had a dream
- Auditory or visual hallucination
- I had a dream
- A stranger had an idea

Plausible
- A friend heard someone say
- A friend had an idea
- I heard someone say

Possible
- A friend had an idea in their field
- I had an idea
- I had an idea in my field
- A friend read an article
- A friend heard about a study
- A friend read a study

Likely
- I read an article
- I heard about a study
- I read a study
- A friend did a study

Nearly Certain
- I wrote the article
- I did the study

Nonsense

This level of reasoning is so lacking in validity that it literally cannot be taken seriously. A child saying “my mom said…” or a story in a tabloid may be entertaining, but there’s no reason to take what they say as fact. At this level there’s not much difference between a stranger and a friend except most of us assume our friend is not out to hurt us or fool us.

Folly

At this level an idea has taken shape. Ideas are important and create opportunities to synthesize concepts and end up with something interesting. But these ideas typically have no other connection to reality. An inspiration or ‘realization’ may feel coherent or certain, but feelings do not provide us with a rational sense of certainty. Rather, they give us a feeling of righteousness or courage in pursuing better reasons to believe. ‘I’ve got a bad feeling about this…’ is not a reason to make a decision, but it is a reason to explore things that might be giving us a bad feeling.

Plausible

A friend had an idea that may or may not feel plausible. But many times we ‘know’ who we are talking to, and we may be able to internally evaluate that our friend may be on to something, or that they may be daydreaming all based on our previous experience with them. Since people don’t really need to have specific expertise in order to connect new ideas, this level of discussion provides fertile ground for deeper discussion motivating us to find better evidence or experts, or research from which we can better evaluate the subject matter.

Possible

When we, ourselves, or friends in a field of expertise, have an original idea, we attain a level of confidence in considering the idea seriously. I equate this with hearing about a scientific study ‘secondhand’. I often describe studies to others, and I often mention ‘I may have these numbers wrong’ as we cannot typically recite the content of a research article with accurate details. But as long as we get the summary about right, we have a basis for forming a foundation of belief that we don’t have at the lower stages. At the very least we have enough content with which to move forward in seeking more verification.
Likely

Here we differentiate the nature of an article from that of a study. An article could be written by an expert, or it could be written by a ‘mere’ journalist who may lack special knowledge of the subject. Brand new scientific discoveries often receive outlandish headlines as the scientific implications are excitedly blown out of reasonable proportions in order to sell copy. But I read an article, and I read a study, are both in this section together because ‘I’ did the reading. No matter what level of reasoning I’m accustomed to, ‘I’ can evaluate for myself, for my own uses, and at my own level, whether or not I think an article is likely to be true or not. And this exact same process is how I will read the scientific study, so they are treated as similar if not identical here.

Nearly Certain

What is meant by ‘I did the study’? It means a few things:

- I know how to do a study or write an article.
- I understand enough statistics and probability to validate the nature of the experiments I am performing.
- It is work in a field of which I am a member.
- I have a background of knowledge based on experiments done before mine.
- I have colleagues with whom to discuss the experiment, its findings, and the implications to follow which may lead to new experiments.

There are studies that lay people can do, but most lay people do not have any of the requisite skills to do an experiment of any scientific complexity or validity. Even many scientists do not have sufficient background in probability or statistics to design valid experiments or fully evaluate their own findings.

Even within a science classroom, it’s rare to do an experiment more than once, which might prove it was valid, duplicable, constant or variable. Then why mention it here? Because the conclusions made here are the source for the studies needed in the ‘possible’ and ‘likely’ stages. And at this level, we make a leap of faith that the scientists involved know what they are doing, (or have expert advisors guiding them), and their word can be accepted as fact, (especially if other scientists have duplicated their findings in peer-reviewed journals. Peers are other scientists in their field). Why do we make this leap of faith? Because average people cannot hope to learn enough science and grasp it at a high enough level, to perform each study ourselves. We take scientific, professionally performed studies as fact because we have no other better choice. No other method gives us a higher level of rational certainty.

Luckily, the vast majority of our decisions do not require us to be ‘nearly certain’ in order to be useful. A measure of ‘likelihood’ is what we need daily in order to wear a seatbelt, avoid food poisoning and flu, and to decide whether or not to get more gas now or later. And even our casual discussion about facts and ideas can be resolved nicely at this stage, or even at the level of ‘possibility’.

Stepping Away from Subjectivity

Those familiar with Kohlberg’s levels of moral development may already see some similarities to this model. In Kohlberg’s model, he presents six levels of moral judgment, paired off into 3 sections of general levels. Pre-conventional, conventional, and post-conventional. The rational certainty model can be similarly divided into three basic groups:

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Irrational

Irrational thinking is described as unfounded, or even illogical or invalid thinking. A discussion with someone at this level really should not be taken seriously for decision-making as there is no way to support or substantiate what's being said as true or false.

Near Rational

When people are nearly rational the truth value may be in question, but it may seem plausible enough not to dismiss out of hand. The idea is not utterly fantastic or bizarre and sounds like it might have some merit, so further discussion may be warranted.

Rational

Rational statements here indicate the presence of formal analysis or study. That does not imply that it is true, or beyond criticism. But it does mean the critique must be supported by ideas that are also at this level. The scientist who does an experiment is completely convinced of their findings. Most of us cannot do the experiment, so we must accept their published word as fact, giving it the same level of trust as if we had done the study ourselves.

It's important to realize that a highly certain source cannot be validly questioned using ideas from a lower level. For instance, a discussion about which burn treatment is best, discussed by medical professionals, cannot be rationally resolved by the statement "My mother told me this was the better way to do it!"

Compared to Kohlberg

How does this compare to Kohlberg? As part of Kohlberg, we learn about the Heinz Dilemma. Heinz had to make a difficult decision involving his wife's health. With Heinz's Dilemma, we see that Heinz can make his decision one way or the other, at EVERY level of moral development. In other words, his level of moral development is not about making better or different decisions, but rather about using different justifications for those decisions.

Rational Certainty moves beyond the subjective. It may not always be correct, but its mechanism is to release superstitious ideas and replace them with ideas that are more substantial, realistic, or even provable. Said another way:

The further up the rational scale you go, the more likely it is that your belief is true. An idea at the folly level is more likely to be false, while an idea gleaned from doing a sound scientific study

is more probably correct. And a corollary, one cannot argue (productively) against a scientific fact by using an unsupported argument.

Moving Toward Discussion

Once one establishes the level of certainty held by each party, how does one proceed? There are various steps to discern whether discussion has potential. The difficult position is to be in a discussion where your certainty is two to three levels above that of the other party. It poses a certain difficulty and possibly frustration. Someone that has faith in their FOLLY may not even understand what makes an idea possible or likely, let alone certain. So, what can be done?

It's best to attempt to reformulate your claim in language that is at, or is only one level above that of the other's argument. So if someone presents you with FOLLY, counter by trying to merely make another idea PLAUSIBLE. They may not meet you there, but at least you'll be speaking a language they might understand. In this way you may help someone increase their rationality.

But what if you are presenting something plausible, and the other party is presenting something likely, (quoted a study perhaps)? In this case you should welcome the opportunity to learn, one level above the level you're on, (or the level of the information you have). Don't ask them to prove their point, ask merely for that which would make their position POSSIBLE for you to believe. You can communicate what you think makes their position seem IMPOSSIBLE, and ask for reasoned approaches to convince you to up your level of understanding without asking you to become a scientist.

The goal here is not agreement or instruction. The goal is conversation leading to higher rational certainty. Preferably, POLITE conversation. This is important. Why? If the amygdala gets activated, then reason becomes literally impossible, (cognition cannot happen during fight or flight), (Hendrix, 2008).

Steps for moving toward certainty (process):

1. Define the topic, and decide what level of evidence is needed in order to change belief.
2. Agree to use only relevant information.
3. Has the claimant examined the history of evidence contradicting their claim?
4. Is there an expert we would both believe on the subject?
5. Agree to use only valid reasoning, (no bias or fallacies).
6. Assess a common standard of reasoning. (Regress into discussing reason as needed).

In Detail

1. Prior to the discussion itself:
    a. Define the topic, and the claim being made. Define it precisely if possible. Write it down so that later there can be no doubt about what was claimed.
    b. Establish what level of evidence or analysis will be sufficient for a change in belief, (by each party).
    c. Establish whatever references are available to support the claim. (Any level of Rational Certainty will do, because a rise of one step on the certainty ladder is a move toward certainty, including when an idea, or argument, is proven false.)

2. Agree to bring in information only of a direct causal nature. Corroboration is insufficient to include in a discussion toward certainty, (Taleb, 2007).
3. Whoever is bringing up the claim, have they searched for or examined contradictory information that might debunk their claim?
    a. If not, stop. The person bringing up the claim will be more convinced by information they find themselves, than from another person directly. (Plausible vs. Possible.)
    b. Have they examined the 'history' of the claimants or sources? This step could be done together to provide a basis for further discussion.
4. Who is the highest level of person known to have an opinion on the subject? Can we both agree on their expertise? If so, find their opinion and adopt it as our own in lieu of discussion.
5. Formally agree to use only reasoning in the examination, and agree that such reasoning is sufficient for changing one's own mind. This must include:
    a. No dependence on bias, conscious or unconscious.
    b. No dependence on logical fallacies.
    c. Openness to changing one's mind when confronted with new information.
6. There is an assumption of a common standard of reason. If there is not, then the discussion must first regress, whenever needed, to discussing the nature of reason itself until a common standard is met. If no common standard of reason can be met, there is no reason to discuss a topic formally. If either party is immune to change of mind, no discussion is needed.

Moving Away from Discussion

Steps for moving away from discussion

1. Define the topic, check whether either or both parties know in advance they will not change their belief. If so, consider not discussing.
2. Determine if there is agreement as to the relevance of information.
3. Upon learning of new information, one or both parties may wish to take time to review the information on their own prior to further discussion.
4. Determine whether a mutually acceptable expert is known or can be found. If not, this may indicate a fruitless discussion.
5. If either or both parties are not familiar with either biases or fallacies or even statistics, (depending on the nature of the problem), consider tabling the discussion until parties can review the basics of these to avoid a discussion happening at disparate levels, (and not reaching mutual agreement or understanding).
6. Assess whether both parties are appropriately prepared to understand the information at hand. If either or both cannot digest the information needed for discussion, then no discussion can be productive for moving toward certainty.

If no agreement can be made for discussing a topic, then don't discuss the topic. Leave it for another day, or perhaps never. And remember, if the amygdala is activated no further discussion is likely to be of any positive value.

Thinking About Beliefs

As we begin to adapt our conversational approach to different levels of reasoning we promote better understanding. We can shift toward avoiding useless arguments and engaging others with ideas that help us empathize with a point of view, avoid negativity, and communicate our own views in ways that are not negative. Understanding each level of reasoning can guide us to higher level thinking for ourselves, and suggest ways of talking to others to help raise their cognitive skills and reduce the reactionary effects so common in modern discourse.

As a teacher, supervisor, or boss, this approach can lead to change and improvement more effectively than an authoritarian 'do this' approach. The following are some ideas for improving our thinking and discussion skills.

Tips for Better Reasoning

1. Consider taking a course in logic or philosophy. Such a course is likely to have content about logical fallacies. Remember, learning about fallacies will not help you think really well, rather, it will help you to stop thinking badly. Learning about fallacies also assists us in discerning when someone's argument is at a very low level of certainty and can give us an important clue about what level of evidence to present.
2. Learn about cognitive biases. Daniel Kahneman's book Thinking Fast and Slow is a treasure of content about how we might be manipulated by people or media by simple triggers of our own unconscious 'cognitive' biases. There's more to learn, but this book is a great start.
3. A first or second course in statistics may be too challenging for some, but for many it helps us take our thinking to a higher level.
4. Study science. Any science will do. The potential topics are endless. Astronomy, cosmology, the brain, physics, geology, evolution, space, anything to grow your understanding of the natural world, and how to think about it.

Tips for Better Discussing

1. Harville Hendrix, Keeping the Love You Find, or Getting the Love You Want, or his audio, Finding and Keeping Love. Anything by him will likely present you with a fair and calmer way of discussing even difficult subjects, (Hendrix, 2008). Harville's method is the most empathetic and deep level of understanding each other and can lead to a dramatic increase in closeness between the parties.

2. Active Listening – This comes in various forms, with advanced levels of practice or technique. It is an outgrowth of the listening methods inherent in psychotherapy. The difference is, that both parties do it for each other. It is not a simultaneous discussion or sharing of ideas. Rather, one person shares their concerns, and the other mirrors back until the person feels fully understood. Then, the roles are switched, and the second person shares their views. It's important to realize that part 2 two is not optional. Both parties must express their own views, and feel understood.

3. Stephen Covey – 7 Habits of Highly effective People, Habit 5 – Seek first to understand, then to be understood. This method is similar to active listening and pushes us to proactively take

action in volunteering to be the first to listen, completely, and then to seek to share our own views, (Covey, 1998).

4. John Gottman has studied the finer points of personal interactions in marriage and the effects of negative views and abrasive communication. His studies have resulted in four especially bad behaviors in communication described as The Four Horsemen of Divorce. The four are Criticism, Defensiveness, Contempt, and Stonewalling. Contempt stands out as the worst of the four when it comes to predicting divorce. The supposition here is that if one learns to not communicate this way, their probability of staying married goes up, (Gladwell, 2006) The same method is effective in casual conversation.

5. Gary Chapman wrote about the 5 Love Languages, (later he wrote also about the Five Languages of Apology-Also excellent). The Five languages describe different ways that people wish to be loved. There are two general lessons to be gleaned, one obvious, one more subtle. The obvious realization for any reader will be that we tend to give love the way we desire it, pretending we are all the same, and that if I treat others as I want to be treated, I'll receive that treatment back. But this is rarely so, so we tend to disconnect in our efforts to show affection. This is critical to unraveling the motivations of whoever we are speaking to, and meeting their needs. It also helps us prioritize speaking our own needs more clearly if they are pertinent to the situation at hand. (Chapman, 2017).

The more subtle lesson here has to do with languages of 'anti' love. Chapman does not discuss the languages this way, yet the reality is somewhat obvious. If our partner desires words of affirmation, we should regularly provide them with words of affirmation. What he does not expressly state is that we must permanently CEASE giving them words of 'defamation'. And there is no 'love' account where if you put in 10 words of affirmation, then one word of defamation won't cause a problem. This is one weakness of Covey's emotional bank account. Remember, just ONE negative event can end a relationship of any kind. A marriage, a job, a friendship, even with a stranger, just one negative statement may trigger a permanent end to communication.

Cautionary Statement

It's worth noting that these ideas are not designed to make a person listen to you. We all want to be understood, but few of us want to commit to understanding someone else. And the content we are examining, 'reasoning', is, perhaps, the most difficult to convince someone else to learn about. My favorite quote illustrates this perfectly:

> "Good sense is, of all things among men, the **most equally distributed**; for everyone thinks himself so abundantly provided with it, that those even who are the most difficult to satisfy in everything else, do not usually desire a larger measure of this quality than they already possess."
> -Descartes

In my opinion, Descartes was using this statement as a kind of satire, implicating not only common people, but also scientists at the highest level. People resist learning about reasoning moreso than almost any other subject, including mathematics. So it is with some tempering that I caution

people to resist the urge to push a discussion that is most likely to be fruitless, as no positive value can come from it.

In The Four Agreements, Ruiz provides a plethora of wisdom on self-managing our engagements with others. Don't take things personally. Do your best. Be truthful. Don't make assumptions, (Ruiz, 1997). But he also instills a sense of agency into each person. I have the right to NOT discuss a topic. I don't need a reason to disengage. Toxic conversations cause damage, so it might be 'reasonable' to avoid those. But no one needs a reason to not talk to you, or respond.

Non-engagement may cause some ire in those accustomed to bullying others. That's okay. You can withdraw your 'agreement' to engage in damaging conversations. And you should do so, in the spirit of 'doing your best'. And if someone berates you for being something you're not? Don't take it personally. You see things differently. And that may not change. Ever. Empower yourself to choose NOT to discuss a topic, or perhaps even not to be present while others discuss it.

But then, how do we do our best?

Many people view certain acts as immoral or sinful. Murdering someone is a great example. We should not murder people. Yet many of those same people would view 'allowing someone to die, when I could have prevented it', as NOT a sin, NOT immoral. This seems quite complex as a moral discussion. But I use it here to highlight the meaning of doing our best.

Our human brains are monstrously powerful LEARNING MACHINES. They are literally designed to learn. However, they are also designed to learn as little as possible, to get by. So, in doing our BEST, are we not obligated to continue learning? And as such, ought we not to be obligated to continue learning TO REASON better? What about learning more math? Are we obligated to learn more math? Where does this obligation end for you?

I believe we should all be obligated to improve over time, and learn HOW to improve. And then to learn how to improve 'how we improve'. This includes learning to reason. It does not include forcing someone else to learn to reason.

I hope that this provides interest in learning more about reasoning. I also hope it gives you the will to discuss, or not discuss, with grace and understanding. Lastly, I hope it provides a fertile ground for a discussion of levels of reasoning used to come to a conclusion or belief on a topic. And when you discover that your own belief was at a lower level, that this material assists you in finding a better way to assess your own beliefs, and perhaps improve them.

Peace, Love, and Light
Terry Rosen

Cont.

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