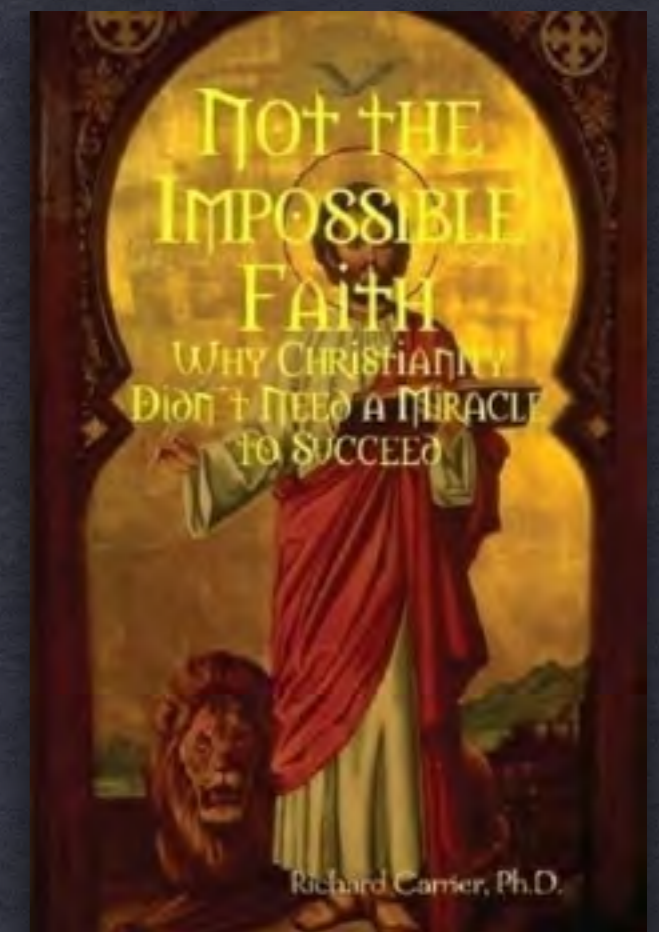


Practical Logic

Richard Carrier, Ph.D.

www.richardcarrier.info



RESOURCES

- * **@ www.RichardCarrier.info/**
- * **[CriticalThinking.html](#)**
- * **[LogicForOrgs.html](#)**

AND DON'T FORGET

- ✿ **After dinner, Kenzi Amodei will cover some details on the how!**
- ✿ **I'll be summarizing some things you can apply her skills *to*.**

TO BE A CRITICAL THINKER...

- ❖ CT means **questioning information** rather than merely receiving it (trust but verify).
- ❖ CT is a **constant skill** applied to all domains of knowledge and belief (not to be compartmentalized).
- ❖ CT is not an exercise but a tool for belief testing and filtering (it is your **defense against false beliefs**).
- ❖ CT must be **applied to yourself** as well as others (always self-question, self-test, self-critique).
- ❖ CT is not radical skepticism (work out **when information is enough to settle a conclusion**).

STAGES OF CRITICAL THOUGHT

- ❖ **Step 1:** Check the facts (check multiple sources / original sources and evaluate their reliability).
- ❖ **Step 2:** Check for biases and fallacies (your own and those of others).
- ❖ **Step 3:** Consider alternative explanations of the evidence and give them a fair test, too.

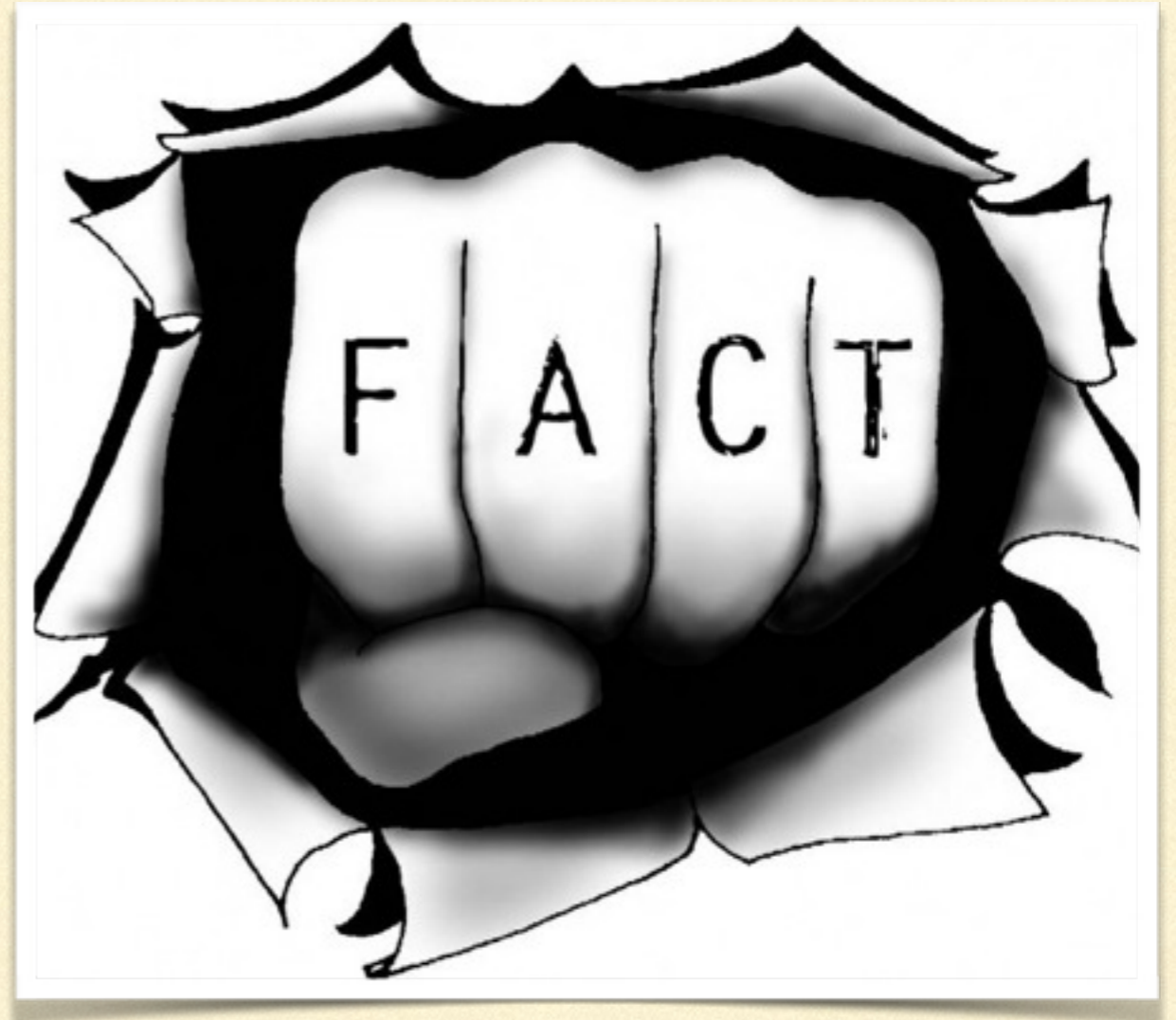
WHAT IT'S ALL ABOUT

- ✿ Find best defenses of both sides **and** compare them.
- ✿ Consider your existing background knowledge **and** endeavor to acquire more of it.
- ✿ Rely on facts and evidence, **not** assumptions.
- ✿ **Update** your beliefs when evidence goes against them.
- ✿ Restate your beliefs as (rough) **probabilities**; then justify those probabilities (or change them if you can't).

GETTING WITH COGNITIVE SCIENCE

- ✿ **It's the 21st Century:** We now know how badly built our brains are for the purpose of reasoning.
- ✿ Natural inborn tools of thought and cognition are clunky, ad hoc, prone to well-documented errors.
- ✿ You are as much subject to them as anyone else.
- ✿ www.RichardCarrier.info / **LogicForOrgs.html**

**YES, LOGIC
REQUIRES FACTS**



LOGIC > PREMISES > FACTS

- * **Logic w/o Facts is illogical**
- * **Rely on available experience base (*SSA / Con*)**
 - * *running and organizing a group*
 - * *practical principles for maintaining civil discussion*
 - * *developing interfaith diplomacy*
 - * *etc.*

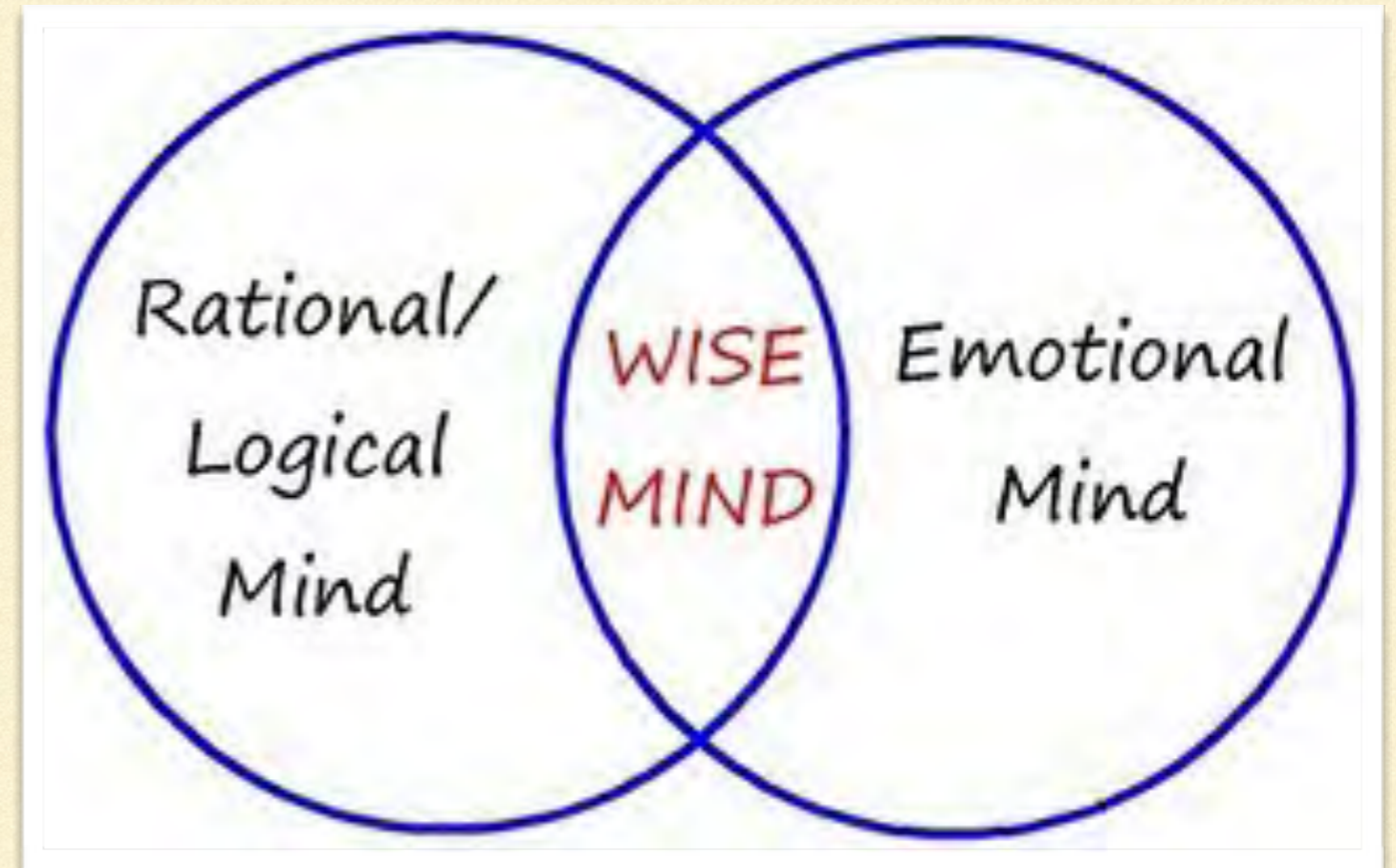
LOGIC > PREMISES > FACTS

- * **Lots of data, from diverse sources**
- * **vs. armchair thinking** (*assumptions, imagination*)
- * **Reasoning w. missing / biased data = fallacious**
- * **Data from [*source / test*] *A* will be same as from *B*
= false generalization**

LOGIC + PREMISES CAN TELL YOU...

- ❖ **How to prioritize goals & allocate resources**
- ❖ **Importance of institutional memory**
- ❖ **Delegating labor & role of incentives**
 - ❖ *members who are averse or lax, need rewards to look forward to (not just recognition and appreciation)*
 - ❖ *members have limited resources (time, stress tolerance, etc.)*
- ❖ **Being logical means taking into account the facts of the world, like how people think and feel, and what motivates them, and what weighs in allocating their own resources.**

KNOW THE LOGIC OF EMOTIONS



LOGIC SERVES EMOTION

- ❖ **Logic is not an excuse to ignore emotions**
- ❖ **Emotions motivate reason → emotional states are the goals of reasoning**
- ❖ **Emotions = evaluating facts in respect to values** (*emotions thus obey a logic*)
- ❖ **Emotions thus represent what people feeling those emotions do or don't want**

LOGIC SERVES EMOTION

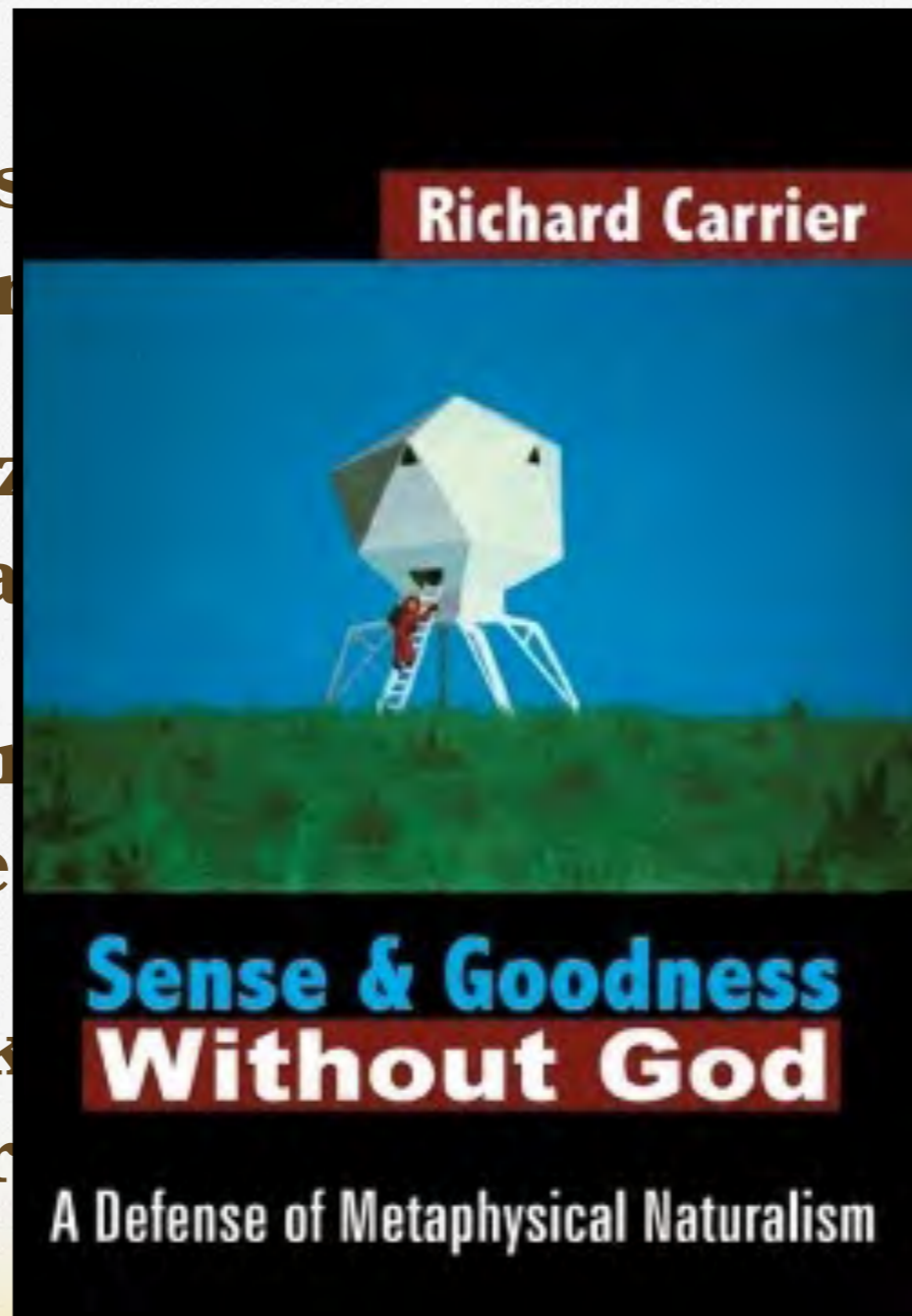
- ❖ **Emotions therefore often have to be factored into your logic as facts and premises.**
- ❖ **They are in and of themselves reasons for doing things.**
- ❖ **Logic can then be used to determine how best to do those things.**

BUT HERE'S THE THING...

- ❖ **As emotions compute conclusions from premises, emotions can be fallacious.**
- ❖ **But recognizing a faulty emotion often doesn't make it go away.**
- ❖ **You therefore have to take that into account as a fact of the world.**
- ❖ **And *also* take into account when an emotion is excessive or misplaced, as a fact of the world.**

BUT HERE'S THE THING...

- ✱ As emotions are not derived from premises, emotions are not rational.
- ✱ But recognizing this does not mean that emotions often doesn't have any value.
- ✱ You therefore cannot dismiss emotions to account as a fact of the world.
- ✱ And *also* taking emotions as a fact of the world is an emotion is excessive or irrational.



EXAMPLE: MOTIVATED REASONING

- ✱ **Emotions that *replace* facts...**
- ✱ **Like denialism: an emotional dislike of a thing**
(gays, feminists, vaccines, environmental responsibility)
becomes a motivating reason to deny facts and replace them with myths.
- ✱ **Must call attention to *this*, and compel them**
(even if that's you) to confront it & analyze it.

EXAMPLE: MOTIVATED REASONING

- ✱ **More tips in online document.**
- ✱ **Example: status quo bias in sexual harassment debate over the last five years.**
- ✱ **You are not immune to that bias** (*it may be affecting you in other subjects, e.g. race*).
- ✱ **Knowing that, and how to spot it in yourself, makes you less subject to it.**
- ✱ **Many more cognitive biases.**

EXAMPLE: MOTIVATED REASONING

✱ More tips in online document.

✱ Exam assessment
deba

✱ You *affecting*
you in

✱ Know *self,*
mak

✱ Many more cognitive biases.

**Every Cognitive Bias
Corresponds to a
Fallacy of Logic**

EXAMPLE: MOTIVATED REASONING

- ✱ **Example: Motivated Reasoning correlates to violating the Rule of Total Evidence** (*cherry picking, false weighting*).
- ✱ **Maintaining an uncomfortable environment and still expecting membership to grow is not how the world works.**

UNDERSTAND PERSONALITY'S EFFECT ON REASONING



EXAMPLE: AMBIGUITY INTOLERANCE

- ❖ **Strongly correlated with being conservative, libertarian, or liberal authoritarian.**
- ❖ **Ambiguity makes you feel uncomfortable = *strong impulse to avoid or eliminate it cognitively.***
- ❖ **Produces a fallacy in categorical reasoning called violating the Law of Excluded Middle.**

EXAMPLE: AMBIGUITY INTOLERANCE

- ❖ **Black and White Fallacy ...**
- ❖ **Everything is either true or false (*in fact, a continuum of probability and uncertainty*).**
- ❖ **Everything is either one thing or another (*in fact, often a continuum of intermixed options*).**
- ❖ **We must do this thing or that thing (*in fact, there may be other options, or options can be combined or pursued simultaneously*).**

EXAMPLE: AMBIGUITY INTOLERANCE

- ❖ So when interacting with conservatives, for example, you should keep this in mind and always **look for when it is happening, point it out, and compel them to confront it** in themselves.
- ❖ And if **you** have conservative (or libertarian or liberal authoritarian) tendencies, you should always look for when it is happening in you and confront it **in yourself**.
- ❖ Because if you don't, your categorical reasoning will be intrinsically fallacious, and thus **not logical**.

THE “OVERT 5D” OF PERSONALITY

- ✿ **Openness to Experience** [*curiosity / exploration*]
- ✿ **Conscientiousness** [*discipline / carefulness*]
- ✿ **Extraversion / Introversion**
- ✿ **Agreeableness** [*compassion / cooperativeness*]
- ✿ **Neuroticism** [*emotionally reactive*]

- **Respect the Types**
- **Optimize Delegation Accordingly**
- **Optimize Comfort When Possible**
- **Be Aware of Effect on Reason**

✱ **Openness to Experience** [*curiosity / exploration*]

✱ **Conscientiousness** [*discipline / carefulness*]

✱ **Extraversion / Introversion**

✱ **Agreeableness** [*compassion / cooperativeness*]

✱ **Neuroticism** [*emotionally reactive*]

REASON FROM THE CONCRETE TO THE ABSTRACT



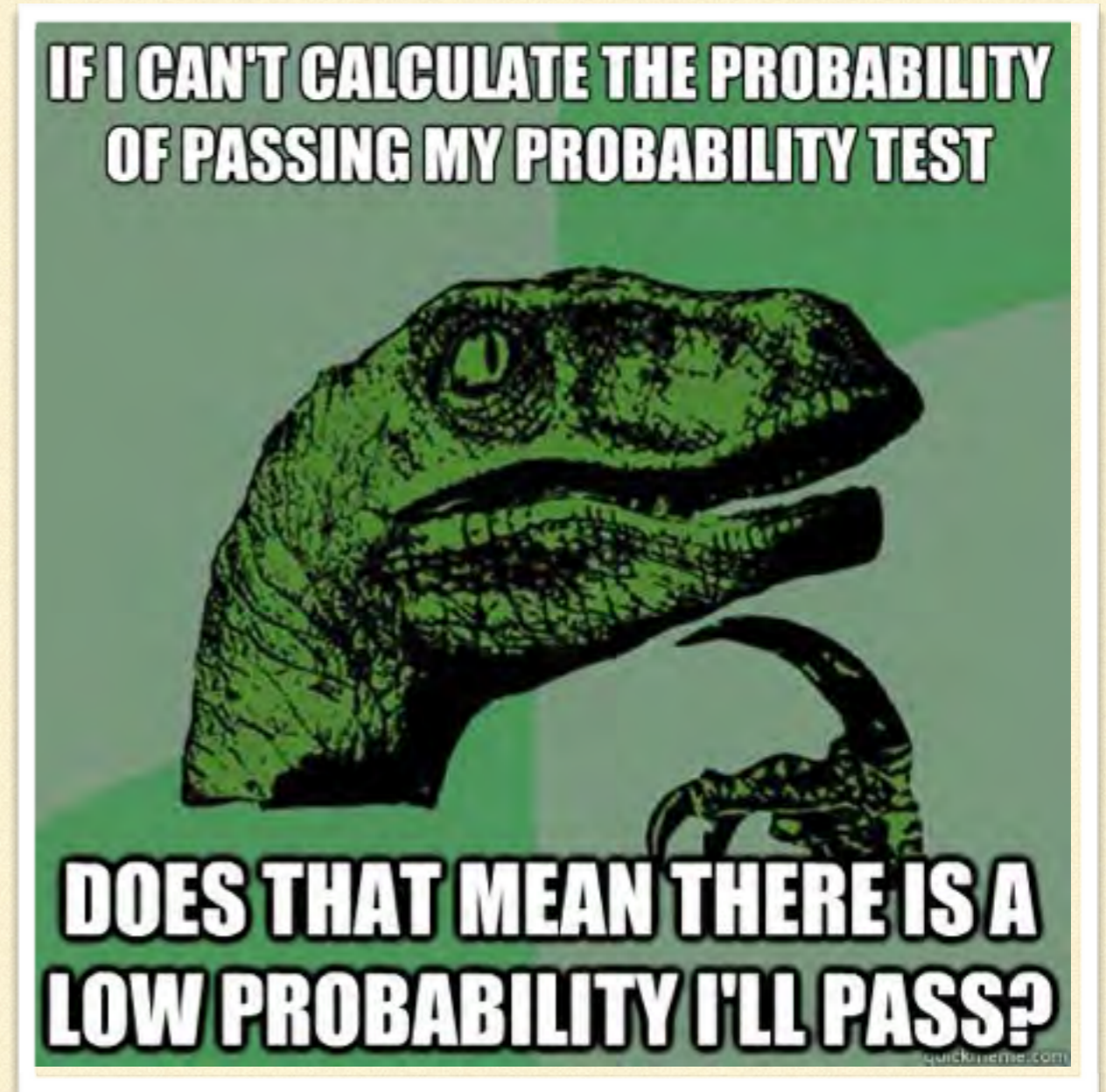
ABSTRACTION AND GENERALIZATION

- ❖ All abstract arguments must begin from a familiarity with the particular examples you are abstracting from.
- ❖ Arguing at the level of abstraction or generalization without reference to the concrete particulars you are talking about generates confusion and error.
- ❖ Produces fallacies of false analogy, in both your reasoning *and* your communication.
- ❖ Examples from Seth Andrews, Ron Lindsay, and Peter Boghossian.

ABSTRACTION AND GENERALIZATION

- ❖ Real world examples tie you to evidence, and to the way the world really works.
- ❖ So you can test models of reality *against reality*, rather than what you only imagine in your head.
- ❖ If you need real world examples (*because you aren't already personally or sufficiently familiar with any*), **admit this is a state of ignorance you have to responsibly rectify.**
- ❖ You need many examples for a generalization; and those examples have to be true, and accurate.
- ❖ Even hypotheticals must be concretized, in order to check your reasoning from the particular to the general.

**ALWAYS THINK
IN PROBABILITIES**



REPLACE TRUE / FALSE WITH PROBABLE / IMPROBABLE

- ✱ **Everything is possible. So how *probable* is it?**
- ✱ **More humility, open mindedness, and honesty about how certain you are of things and why.**
- ✱ **Allows more agreeability to work with others, by reducing your fanaticism or radicalism.**

REPLACE TRUE / FALSE WITH PROBABLE / IMPROBABLE

- ❖ **Leads to sounder reasoning in all domains**
(standard deductive logic doesn't validly commute probabilities).
- ❖ **Opens opportunities to criticize bad ideas.**
- ❖ **Forcing someone to pin a probability to their claim allows you to start debating where they get that probability from and how.**
- ❖ **Which gets right to the heart of what logic they are actually using, and what facts.**

**AND THINK LIKE
A BAYESIAN . . .**



THESE ARE THE PROBABILITIES OF OUR LIVES

- ❖ **Must compare alternative claims / explanations.**
(can't verify them in isolation)
- ❖ **What *are* the most likely alternatives?**
- ❖ **How probable is *all* the evidence on *each*?** *(the difference is the comparative likelihood)*
- ❖ **Justify your priors.** *(what has usually been the case before?)*

THESE ARE THE PROBABILITIES OF OUR LIVES

- ✱ **This requires taking alternative explanations seriously.**
- ✱ **Otherwise, fallacy of confirmation bias: looking for evidence that is expected on one explanation (*the one you prefer, or the first you test*), and concluding if you find it, then that explanation is true.**
- ✱ **That's false. Because that same evidence might be just as likely on *some other explanation*—in which case, both explanations are likely (*if they started out equally likely before that*).**
- ✱ **And if you only look for corroboratory evidence, you will overlook evidence that is *unexpected*, and therefore *improbable*, on that hypothesis.**



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