

The nature of science

[this article is dedicated to Markus Schmidmeier and Julia Micheal]

Science is not just about making hypotheses and testing them; science is much more.. I'm now a student at a local major university and *in the last few days* have performed things that we typically think 'only scientists' can do:

1. economized the axioms of set theory
2. determined the general requirements of set theory
3. determined the general requirements of any practical quantum theory
4. made explicit the axioms of a quantum realism
5. created a project description for *creating aware agents*

And I'm 'just a *student*'. What does this teach us?

I. *students can 'do' science*

How did I do this? Am I special? *Only* in how I've *trained my mind*. This shows another fact: our self-discipline is critically important to scientific endeavors.

II. *science requires self-discipline*

But it's not just about our self-discipline, we *need to think in organized ways*.. We need to *grow* our minds in ways that result in productivity..

III. *scientists should organize their minds from childhood*

What we *do* with our minds is critical, yes? We *must* ask questions. But more than this, we must ask questions that may defy conventional notions. No progress in science can be made otherwise.

IV. *scientists must ask 'the hard' questions*

And finally, *theoretical* scientists, whether they're from the 'hard sciences' or 'soft sciences', absolutely need to (at least) become familiar with axiomatization.

V. *great theoretical scientists need fluency in axiomatization*

This is perhaps the most important article I could *ever* write about science. Please pay attention and please bear with me (have patience). I *rarely* am in this mode.

..When I was a kid, I wanted to be like Spock, the fictional character of the original Star Trek. Laugh if you must but perhaps more amusing is that I also wanted to be like Kwai Chang, the fictional character of Kung Fu. Spock was logical and had a *very* sharp mind. Kwai Chang was all about *balance* and peace. I wanted to know if it was possible to be *both*; I found out by *growing up that way*. Considering the achievements above alone, this is *astonishing*: fiction has inspired reality.

But it is so much more than this.. *Good* fiction inspired *good* reality. In other words, *meaning is enhanced*. And this is the *crux of my being*: to enhance meaning in *all* our lives – not just mine.

We have arrived at *the singularity* ahead of time (before December, 2012). Please write it down on your calendar. ;) (Is this guy *serious*? Does he take *himself* seriously? Is he *joking*? Is he *crazy*? ..I assure you yes, *I'm crazy* – but in a *harmless* way.. The *only* way I achieved above was 'take a step out of my humanity'. The *only* way I could solve the *truly hard problems* in science was: *stop being human*.)

Obviously, I'm *not* speaking of being 'inhuman' (violent or offensive). I'm attempting to express something closer to *alien* or *non-human* intelligence .. If we have problems that seem *unsolvable*, we *must* look at them from *fresh perspectives*. Sometimes, we need to take a step *outside ourselves* to see from those fresh perspectives. So *the process of science requires alien perspectives*. It's 'mind boggling'

unless we actually *try it*.

Back to axiomatization.. The basic process is this:

1. you make a *plausible assumption* or two
2. you consider *all the possible logical consequences* of those assumptions
3. you decide what constitutes a *prime/core* assumption/consequence and write that down *explicitly* – that is your Axiom 0 – what all following *depend* on
4. if you have problems arriving at step 3, you may have to start again
5. attempt to find the *next* most-core notion and explicitly write that down – Axiom 1
6. continue this process until you run out of meaningful significant implications – your Axiom system is *complete*
7. *check* for logical consistency between your Axioms – any mistakes, fix them; any omissions, complete them
8. check for *correspondence to reality* – is there a one-to-one correspondence between your Axioms and reality?
9. if so, you're now free to develop the *theory* or structural framework of your *new discipline*

Congratulations! You've created a new branch of science! ..Essentially, *axiomatization is the process of scientific discipline creation*. Wow! :)

If a *student* can teach scientists science, *anything is possible*.

Now we know why Student (who invented the t-test) called himself Student. And why my good friend changed his last name to Learner. And why my mother says: “Learning is a lifelong process.” But we learned something more today:

VI. in the process of learning, significant achievements can be made

So if we look at the six statements above, *they themselves* form an axiom system! This is further evidence we are at *the singularity*!

If you doubt this, use the procedure above for anything you care about – anything you're truly interested in. You'll discover there are *always* assumptions 'underlying' *anything*. The 'trick' is to make them *explicit*. If you can 'put your finger' on something, if you can 'nail it down' conceptually, you can create an axiom system for it.. Now of course, is this *desirable*? Suppose I wanted to make the field of 'religious studies' more 'rigorous' or 'formal'. I might change the 'intent' of it: instead of simply studying all the diverse religions of the world, how they're different/similar, perhaps I could study *why* humans have religions – this is a more psychological consideration. This *new discipline* we could call 'the psychology of religions' or simply 'religious psychology'. Boom. *We've just created a new branchlet of science simply by asking a good question* .. My point is, try axiomatization yourself before you denigrate the procedure.. Look at the five achievements I did *in a matter of days* with this 'newfound skill'.

Of course, I had a *tremendous* amount of good information at my 'fingertips': my almost eidetic memory.. Sure, I forget *lots* of things.. But if we live each day as if we're a blank slate for life to write upon, we can learn a hellava *lot*. If we *continually* try to *integrate* new accurate information into our minds, we *continually build* our 'databases' of mental information. Under proper conditions and with proper attitudes, we can *be* fountains of inspiration and discovery.

Sorry.. I used the wrong word.. *Be* is the correct word.

Be.