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Last week, I learned about the pioneering research of Dr. Katherine Solomon. The head of her own privately funded lab within an unused storage pod at the Smithsonian, Solomon's work in noetic science promises to make the supernatural tangible. Through her research, we have learned that shared thoughts can attract objects, that the soul has measurable mass, and that humankind holds the ability to awaken its own primal wisdom and achieve godlike feats. Visiting her lab requires a creepy, 90-second walk through pitch darkness that no one has yet discovered how to alleviate because flashlights apparently do not exist.

Dr. Solomon, of course, is an invention of *The Da Vinci Code* author Dan Brown. She plays the role of the intelligent, driven, slightly flirtatious female companion to Harvard University symbologist Robert Langdon in the novel *The Lost Symbol*. Apparently, Brown had forgotten that Langdon already *had* an intelligent, driven, slightly flirtatious female companion in each of his two previous novels.

I'm not proud that I read this book. But I live in Washington, D.C., and *The Lost Symbol* promised to reveal all kinds of architectural and Freemasonic tidbits about my home city, so I figured I'd throw literary caution to the wind and give it a try. Whether the symbology and ancient whatnot are valid, I don't know. But wow: The science was pure bull crap.

I know this is going to happen whenever I read a popular novel or watch a popular film or TV show. I know the science will be laughably dubious. I know that this fact, for me, will overshadow any legitimate merit the piece has. I know I'll find myself screaming, "YOU MORONS! HOW CAN YOU LAND A SPACESHIP ON A SPINNING ASTEROID? HOW CAN YOU SYNTHESIZE AN ANTISERUM IN AN HOUR? WHY DOESN'T IRON MAN BANG HIS HEAD ON THE INSIDE OF THE SUIT?"

I don't blame novelists and filmmakers for not understanding what scientists actually do. After all, I don't understand what lawyers do, and if I had to make assumptions based on television, I'd assume they just yell "Objection!", tap folders on desks to straighten them into a pile, and say things like, "No further questions," but say them slyly, indicating that there really *are* further questions. Oh, snap!



Still, you'd think they'd at least show their finished work to a real scientist *once*, just to check.

ROLAND EMMERICH: If Earth experienced severe weather patterns, how long would those take to set in?

A SCIENTIST: Years, probably. At least years.

ROLAND EMMERICH: Oh, okay. But years are long. How about minutes? Yeah, let's go with minutes.

Or:

M. NIGHT SHYAMALAN: Could trees emit an airborne neurotoxin and cause everyone to commit suicide?

A SCIENTIST: Uh, I doubt it.

M. NIGHT SHYAMALAN: I appreciate your candor. Then again, I also see dead people. Tree-based airborne neurotoxin it is.

Or:

MICHAEL CRICHTON: What if mosquitoes drank dinosaur blood before being encased in amber? Would it theoretically be possible to extract that blood and clone dinosaurs from the DNA?

A SCIENTIST: No.

MICHAEL CRICHTON: So, yes?

Even worse than the major errors, though, are the frequent small ones, the little assumptions in popular culture that belie a misunderstanding of how scientists operate. For that reason, I'd like to dispel, once and for all, the following eight myths:

Scientists frequently make “breakthroughs.”

Truth: Scientific discovery is agonizingly slow. The only time I've ever run naked through the streets yelling “Eureka!” is when I forgot to refill my prescription.

Scientists work in isolation.

Truth: Scientists are even prouder of setting up collaborations than they are of actual results. Most scientific talks end with a slide listing all collaborators like little badges of honor—and the less similar the collaborator's field, the prouder the scientist. “Well, you know, I might have discovered a cure for tuberculosis,” a scientist will say, “but what I'm really excited about is this new collaboration with an Icelandic poet!”

Scientists possess useful skills.



Truth: Scientists possess useful laboratory skills. But you should never allow a physicist to wire your house.

Scientists follow the scientific method as it was taught in high school: Observation, Question, Research, Hypothesis, Experiment, Conclusion.

Truth: In reality, the way scientists work is more like: Fiddle Around, Find Something Weird, Retest It, It Doesn't Happen a Second Time, Get Distracted Trying to Make It Happen Again, Go to Chipotle, Recall the Original Purpose of Your Research, Start Over, Apply for Funding for a Better Instrument, Publish Some Interim Fluff, Learn That Someone Has Scooped You, Take Your Lab in a New Direction, Apply for Funding for the New Direction, Collaborate With an Icelandic Poet, Eat Chipotle With an Icelandic Poet, Co-Write Scientifically Accurate Ode to Walrus, Get Interested in Something Unrelated, Apply for Funding for Something Unrelated, Notice That 20 Years Have Passed.



CREDIT: Hal Mayforth

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The six-step scientific method reminds me of the Identify-Predict-Decide-Execute system they taught us in driver's ed. To spot a hazard while driving, first identify it: I see a truck! Then predict: That truck is about to hit my car! Then decide: I should prevent this outcome! Finally, execute: I'll steer away from the truck! Like the scientific method, the Identify-Predict-Decide-Execute system is what results when a bureaucrat is asked to explain driving to a Martian toddler using PowerPoint.

Are there actually people who drive using that method? There used to be, but they were all killed by trucks.

Experiments always yield data that teach or reveal



something.

Truth: Let's say you're doing an experiment with five mice. These particular mice will turn either yellow or blue. So you walk into the lab expecting to see five yellow mice, which will point to one explanation, or five blue mice, which will point to the other. Instead you would see one yellow mouse, one green mouse, one striped mouse, one plaid mouse (dead), and one mouse that has somehow sewn himself a little blue jacket, though he doesn't wear it all the time.

A personal tragedy can turn a scientist evil.

Truth: Very few scientists are legitimately evil, though the number rises if you ask graduate students to characterize their advisers. Besides, it's hard to be truly evil when you don't have any practical skills.

A scientist can be proficient in all branches of science.

Truth: Exactly what discipline did the professor from Gilligan's Island specialize in? Chemistry? Mechanical engineering? Coconut-based transistor radio construction? Any time a problem needed solving or a device needed building, the professor knew exactly how to do it. That guy could make anything. Except a boat.

People who don't understand science assume that scientists can master any subfield. That's why we're often asked for our opinions about scientific news items, and we can only reply, "Uh ... sorry ... I know I'm a molecular phylogeneticist, and this story was about molecular phylogenetics, but, well, I'm a different *kind* of molecular phylogeneticist."

Scientists are not sexy beasts.

Truth: Scientists are indeed sexy beasts. Not only do our lab coats make us look dapper and charming, those same coats look even better strewn unceremoniously over a standing lamp while we make passionate love to you.

I hope I've dispelled a few myths about scientists. Before you pick up your next thriller novel, remember that we're not exactly as we're often portrayed. Hopefully that will make the novel much less enjoyable. You're welcome.

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