

BOOK REVIEWS

Robert Bilinski

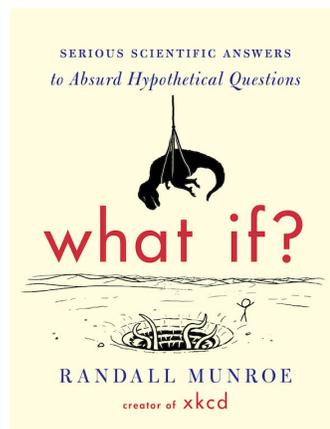
What if? Serious Scientific Answers to Absurd Hypothetical Questions by Randall Munroe

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Houghton Mifflin Harcourt

Reviewed by **Robert Bilinski**, Collège Montmorency.

Randall Munroe is a physicist who worked at NASA, then started the famous XKCD, a mathematics and physics based comic strip. As a widely read author, he has received a tremendous amount of fan mail containing the strangest questions; he then tried answering these questions in a scientifically sound way, respecting the known laws of physics, chemistry, biology and mathematics. Over the years, he maintained a blog with the answers to these questions. He compiled some of them into this book, updating older articles with comments and remarks from other specialists reading his blog and added a lot of new material. The result is an unconventional and original book for the curious, if not of the answers, then of the wide ranging selection of odd and unusual questions about our world.



To grasp this book, one has to get a feel for the type of questions addressed. Here are a few of them, randomly selected by flipping through the book:

“I read about some researchers who were trying to produce sperm from bone marrow stem cells. If a woman were to have sperm cells made from her own stem cells and impregnated herself, what would be her relationship to her daughter?”

“If you suddenly began rising steadily at 1 foot per second, how exactly would you die? Would you freeze or suffocate first? Or something else?”

“What if a rainstorm dropped all of its water in a single giant rain-drop?”

As we can see, curiosity is, by its own nature, wide ranging and without limits.

One of the immense pleasures of XKCD is its special kind of weird humour that requires the reader to have mathematical maturity to tickle their funny bone. This book is naturally full of it, which is further amplified by the unexpected hypothetical questions whose craziness seems to have no bounds. The humour transpires through the use of proofs *reductio ad absurdum* to “real life”, or the

search of an exact mathematical proof to a messed up little problem. In sum, the book is rife with sentences like the following:

“Because the moles form a literal fur coat, when frozen, they would insulate the interior of the planet and slow the loss of heat to space.”

“At those speeds, you don’t really have to worry about the heating from the air – a quick back-of-the-envelope calculation suggests that if your body were doing that much work, your core temperature would reach fatal levels in a matter of seconds.”

I will leave you with a riddle: What questions would have these sentences as part of their answers? I hope your imagination is in full gear, as the real questions will surpass your wildest imaginings.

As a bonus, Mr. Munroe also has added a long list of questions he doesn’t even attempt to answer because of their weirdness:

Question: “What if you strapped C4 to a boomerang? Could this be an effective weapon, or would it be as stupid as it sounds?”

Answer: “Aerodynamics aside, I’m curious what tactical advantage you’re expecting to gain by having the high explosive fly back at you if it misses the target.”

Through the answers, we also notice some disturbing facts, namely that the government also has to answer questions such as “Why don’t we try to destroy tropical cyclones by nuking them?” The government actually issued a response to this, to which Mr. Munroe replies “It makes me happy that an arm of the US government has, in some official capacity, issued an opinion on the subject of firing nuclear missiles at hurricanes.”

A very appealing characteristic of the answers proposed by the author is that he builds them all from scratch and the ground up, so we embark on a very hands-on and real life application tour of mathematics. After all, math is as good at proving things as it is at disproving them, something that is often overlooked in our current iteration of schooling. Another very important premise is that quick calculations can very powerfully disprove stupid ideas, even when said calculations are just rough estimations. There is definitely more than meets the eye in this book.

The virtue of works by Mr. Munroe is that they are still mathematically sound, but sometimes applied in a flippant way corresponding to the absurdity of the reasoning itself. I can’t remember a book that has made me laugh so much. Clearly, one buys a book like this for its entertainment value. We can only lament that humorous mathematically inclined entertainment is so rare, and console ourselves that this one in particular is so good.

Good reading.

