Hacking — Why Jonnie Can't Hack

BY PETE HERZOG

(http://darkmatters.norsecorp.com/author/pherzog/)

http://isecom.org (http://isecom.org)

Hacking is the closest thing the general public knows to be an unknown, unexplained power that some people possess — like magic.

Therefore *Hacker* is a powerful word for the general public. It means a mysterious and forbidden knowledge to many, and brings feelings of curiosity and nervousness to the rest.

So of course there will be witch hunts and a fear of hackers, because that's human nature.

Because It's Witchcraft

However, much of what we consider science today was witchcraft at one point in history. Chemistry was once the devil's alchemy. Astrophysics was blasphemy. Biology and ecology were heresy. Medicine, up until just 25 generations ago, was about releasing evil spirits, balancing humors, and bloodletting.

Unlike those which became actual sciences, hacking is not the artifact of computer science. Hacking can't become computer science or information science any more than reading can become a book. Because hacking is a form of learning.

We can prove this because hacking isn't solely restricted to computers. It's about deeply understanding how things work. It's trying and failing and learning from that failure. It's an informal scientific method. Which is important because it's natural and deeply rooted in how humans learn.

Because It's Boring

Let's face it, the scientific method is the most important thing for understanding how things work. For those who were half asleep in grade school, the short version is that the scientific method is a series of techniques that starts with a hypothesis, tests ideas, observes them, gathers facts, measures stuff, and ends with a conclusion. Still here? I fell asleep just writing that. Which points out a bigger problem with how schools teach science.

When I was little, the scientific method was taught to me in school by shooting a spout of stinky foam out of a jar. And it was exactly the opposite to how exciting that sounds. That "*experiment"* could not have been made more dull if you hung a monochrome sepia toned picture of it on a white wall, and walked backward really slowly until you couldn't see it anymore.

In school the scientific method was handled like a theory of how to do a process. And it was boring. It could have been exciting but the teacher basically threw spoilers of what was going to happen next throughout the whole experiment from start to finish. Only one kid, Casey, had his hand up the whole time (but she never called on him). We didn't touch anything. We didn't investigate anything. We didn't try anything. We didn't even see her make mistakes that we could learn from. We just observed a perfect, canned *"experiment"*. The teacher couldn't have made it less about science and still call it science. And it wasn't a one-time thing. It was every *experiment*. She even took us to a petting zoo and didn't let us touch the animals. She didn't want us to get hurt.

The truth is that the scientific method isn't linear. It's messy. It jumps around a lot. It's hands on and therefore CAN be dangerous for school kids. Or at least it used to be. Somewhere along the line it got domesticated to fit into textbooks.

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Hacking is what science used to be — before they even took the Acetylsalicylic Acid out of chemistry kits for kids. It shows how messy and fun the scientific method really is. The only thing that's actually different between real scientific study and hacking, is that in

hacking— the tests include things outside the scope of the experiment and the conclusion is either it works the way you want it to, or you try it again a different way.

Because It's Dangerous

Hacking is not about *easy*, it's about *possible*. There is a constant trying and testing and failing component inherent in hacking that just happens. While popular culture likes to call shortcuts and cheats as "hacks"— the process of hacking is often harder and more complicated than just doing something the regular way. But you do it anyway to know if it can be done. There is a hell of a life lesson in that alone.

So if the scientific method is about determining the level of dryness a watermelon seed must be to pick it up off a kitchen floor, then hacking is about cracking open the first aid kit and pouring Isopropyl alcohol on the seed to see if it makes it easier to pick up.

Nowadays, many people disagree with hacking in principle, and by principle I mean what they believe they think they know about hacking. For the most part, they think that even if it's not always criminal, which it is to them, it's dangerous.

But so is science— to anyone who's ever heard of Marie Curie (https://en.wikipedia.org/wiki/Marie_Curie). Or Elizabeth Ascheim (http://www.uh.edu/engines/epi923.htm). Or Harry K. Daghlian Jr. (https://en.wikipedia.org/wiki/Harry_K._Daghlian,_Jr.) and Louis Slotin (https://en.wikipedia.org/wiki/Louis_Slotin). Or more recently, David A. Johnston (https://en.wikipedia.org/wiki/David_A._Johnston) and Richard Din (http://www.mercurynews.com/news/ci_20544356/lab-worker-killed-by-rare-bacteria-was-uc). Science kills. And boring, narrated, anticlimactic science kills more. So that can't be a reason to keep kids from hacking.

I agree that it's important that kids aren't exposed to a level of danger greater than the level of responsibility they can hold themselves to. But it's also equally important that kids are able to keep testing their own limits of what's possible. And hacking is ideal for that.

Hacking teaches problem-solving and resourcefulness. It teaches thinking really big and really small. it teaches you how to recover from failure. It teaches how to properly research what you don't know, be critical of what you read, and what people say, and to shut up and pay attention— because the quieter you are the more you can hear.

Because It's Illegal

Why can't kids hack? Because it's illegal. Because hackers are still seen as anti-social kids who cause great havoc from dark basements. Or, so many of the schools and parents think. And It clearly hurts.

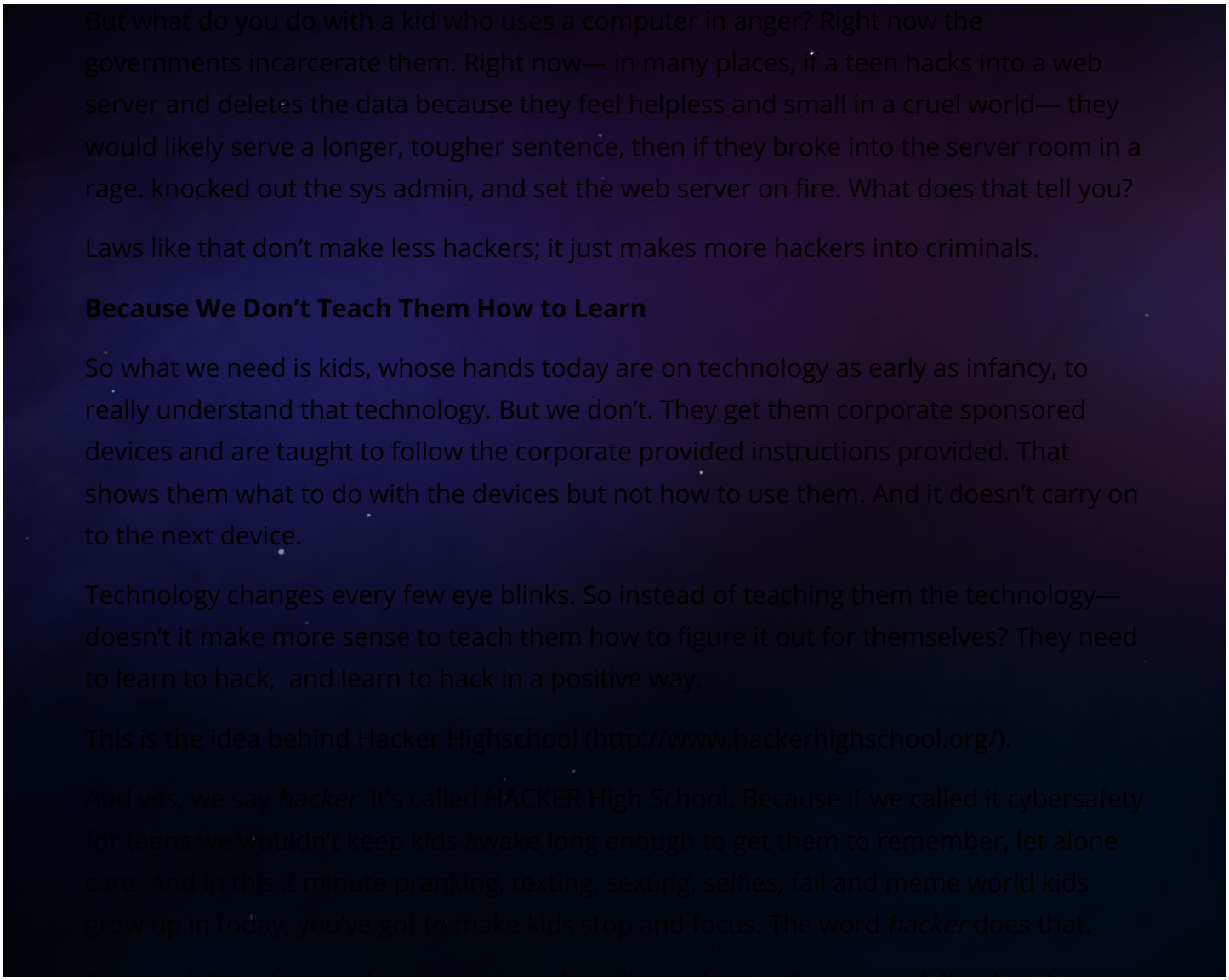
We need hackers to help us understand and control the technology around us. We need hackers because we can't be sure that the commercial company who made the device is being honest with us.

And we need people who can hack in order to defend networks. If we keep scaring the crap out of them so they don't ever try, or throw them in jail when they do— then who's going to defend us? You wouldn't want a policeman who's never thrown a punch or a fireman who's never set a fire either. So why would you want a security professional who's never hacked?

The real difference between a high school hacker and a criminal hacker is intent. Not ironically, it's the same difference between a store shop butcher and a criminal butcher.

Long-term criminal hackers do it for a living. But most teens who commit illegal criminal acts do it as part of a power struggle, something all teens go through. They lash out. Some teens punch, some scream, some have sex, and some shoplift. And society sees it for what it is, teenage angst and get them help— unless they hack, and then they're tried as criminals and go to jail.

We need to stop punishing teens for hacking because they got angry at someone, and instead harness that energy like gyms that turn a street kid into a boxer.



But what do you do with a kid who uses a computer in anger? Right now the governments incarcerate them. Right now— in many places, if a teen hacks into a web server and deletes the data because they feel helpless and small in a cruel world— they would likely serve a longer, tougher sentence, then if they broke into the server room in a rage. knocked out the sys admin, and set the web server on fire. What does that tell you?

Laws like that don't make less hackers; it just makes more hackers into criminals.

Because We Don't Teach Them How to Learn

So what we need is kids, whose hands today are on technology as early as infancy, to really understand that technology. But we don't. They get them corporate sponsored devices and are taught to follow the corporate provided instructions provided. That shows them what to do with the devices but not how to use them. And it doesn't carry on to the next device.

Technology changes every few eye blinks. So instead of teaching them the technology— doesn't it make more sense to teach them how to figure it out for themselves? They need to learn to hack, and learn to hack in a positive way.

This is the idea behind Hacker Highschool (http://www.hackerhighschool.org/).

And yes, we say *hacker*. It's called HACKER High School. Because if we called it cybersafety for teens we wouldn't keep kids awake long enough to get them to remember, let alone care. And in this 2 minute pranking, texting, sexting, selfies, fail and meme world kids grow up in today, you've got to make kids stop and focus. The word *hacker* does that.

The laws only change when society does. The people we call leaders only look like they lead. They watch the opinion polls and see how society is shifting then sneak in front of it like a 5th grader in a lunch line. So I'm appealing to society here. Stop stopping hacking as a means of learning.

While the movies like to focus on the neurotic, mentally disturbed genius as the image of the hacker, that's not true. The hackers I know or am Facebooked with, are the most peaceful, non-judgmental, engaging, caring geniuses you could ever meet. And few of them call themselves hackers publicly, because they worry about what you may think of them. There is nothing psychotic or anti-social about caring what other people think.

As the Einstein meme once said, "Hack the change you seek."

Pete Herzog
(http://darkmatters.norsecorp.com/author/pherzog/)
Pete (
(http://darkmatters.norsecorp.com/author/pherzog/)@peteherzog
(https://twitter.com/peteherzog)) knows how to solve very complex security problems and then teaches and enables others to do the same. His daily job is as the Managing Director and co-founder of the Institute for Security and Open Methodologies (ISECOM). He specializes in securing the things that nobody has secured before- prototypes, new businesses, processes, and even people. He researches new security paradigms for the Open Source Security Testing Methodology Manual (www.osstmm.org (http://www.osstmm.org/)) and Hacker Highschool Security Awareness specifically for Teens (www.hackerhighschool.org (http://www.hackerhighschool.org/)). He co-created the OPST, OPSA, OWSE, and OPSE security certifications to assure professionals have accurate and efficient security skills and know-how. Get more info on consulting, presenting, training, and certification at www.isecom.org (http://www.isecom.org/). His full profile can be found here: www.linkedin.com/in/isecom/ (http://www.linkedin.com/in/isecom/).

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