Can Kelly Bundy teach us about Cybersecurity? If its Retrieval-induced forgetting, apparently so.

There was a fictional television comedy sitcom in the 1980s called *Married with Children*. In one episode, in order to get his sister Kelly Bundy to be able to compete on a Sports Trivia game show, the brother Bud Bundy kept filling his sister's head with facts about sports. Day and night, facts, facts, night and day, and still more facts. During one of these study sessions, the doorbell rang, and Kelly Bundy asked,

Bud, What's that?

That's
Retrieval-induced forgetting

Too much remembering some information tends us to forget previously remembered information. And while there is a lot of debate on what causes Retrieval-induced forgetting, the phenomenon exists.

Our mental associations, those neural networks that help us to remember things and help us to guide our behavior must be practiced.

You've heard the phrase practice makes perfect. It turns out, yes, the more we practice, the better we become.

However, there is a tradeoff. The more we practice one set of associations (they become stronger) the other associations less practiced become weaker.

Experiments have been done with students, where after giving all the students the same material, they would be separated into two groups.

If you think that may not be important, would you be comfortable going to have your appendix removed, only to find out your doctor studied using cram exams?

The result is that yes, practice's does take work, however, if you build up certain mental associations, you lose other ones.

And, research has shown it's not the actual forgetting of the material, it's the retrieval of that material.

Bud, What's that?

You do not lose the unpracticed associations, it just that they are much harder to locate and retrieve when needed.

For cybersecurity individuals, the associations that are not practiced can be a real issue when designing secured systems, we may remember to do items, A, B, C and E on some development, and completely forget item D.

For example, we can remember to do password management, log management, event correlation, access control, router ACLs, hashes values on all our binaries and passwords files, yet forget to remove default accounts (which happens more often than we can imagine)

We are familiar with Denial of Service (Dos) Attacks, but what about Sybil attacks against Blockchain – are you sure you only connect to trusted nodes? (Look up trusted attack successes)

Think about how many times the same type of attack is successful, even though we think

One group would be given practice exams covering part of the material, and the other group would be given extra time to study all the material.

The group that used the extra time to study did slightly better than the group that just used practice exams. However, over the longer term, the extra time study group did lose a lot of the material, which researchers expected.

The group that used the practice exams did slightly lower than the extra time study group, but they remembered more over the long-term,

 but only the material on the practice exams.

They lost the memory of the material that was not on the practice exams, even though the material was important and both groups were initially presented with all the same material.

One could think of those certification cram exams many have used for helping in passing a security certification. We study taking these tests on some material, but only certain areas of the material.

the same type of security mechanism is in place – we have to ask yourself – is it – are we sure.

Could this contribute to a reason why it seems the successful attacks keep happening? Is Retrieval-induced forgetting blocking other important security protections, are we overlooking them?

So, it's critical, these cram exams can help, but unfortunately, it takes a lot more work, and you need to keep refreshing other areas left of these cram exams.

You have to keep ALL associations very strong, remember cybersecurity can mean life and death in some sectors – and if you don't "Know it all," then look it up, get help, its what makes us all better.

Remember, you are called a Cybersecurity "EXPERT" for a reason

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