

Neurodiversity in CSA

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About me

- Assistant professor in Computer science
 - Jönköping University since 2023
 - University of Skövde since 2014
- Part of our Cybersecurity and Privacy Research Group
 - Ju.se/cpr
 - Focus on socio-technical privacy and cybersecurity
- My main topics are user behavior and awareness
- Member of ENISA ad-hoc group for awareness raising





Neurodiversity

- Differences in how people's brain works
- Focus here on cognitive diversity
 - Differences in our cognitive abilities
- Cognitive abilities include
 - Learning ability
 - Memory
 - Reasoning
 - Problem solving
 - ...



Relevance for cybersecurity?

- Phishing
 - Detect cues and reason about email legitimacy
- Account setup
 - Interpretation of password rules
 - Creation and memorization of passwords
- CAPCHAS
 - Problem-solving
- Email writing
 - Spelling and style important to be seen as legitimate

Some impact

- We can see cognitive energy as a finite resource
 - Cognitive tasks consume cognitive energy
 - Once we are low on energy, we get tired
 - Once we run out....well...we can't do anything

- In our studies, we found a few key takeaways
 - Neurodivergent users have less energy than others to start with
 - Yet, cybersecurity tasks are more costly than for others
 - And some tasks are completely incapacitating
 - As a consequence, they adopt a lower security posture than they would like

Why bother?

- This is an inclusion issue
 - The digital world is for everyone
 - Neurodivergent users are sometimes more in need of public systems than others

- It is both a corporate and personal security issue
 - Many people are neurodivergent (up to 15%)
 - Autism
 - ADHD
 - Dyslexia
 - Brain injury
 - Age
 - ...

- Neurodivergent users are part of the workforce and use the digital just like anyone else

Why bother?

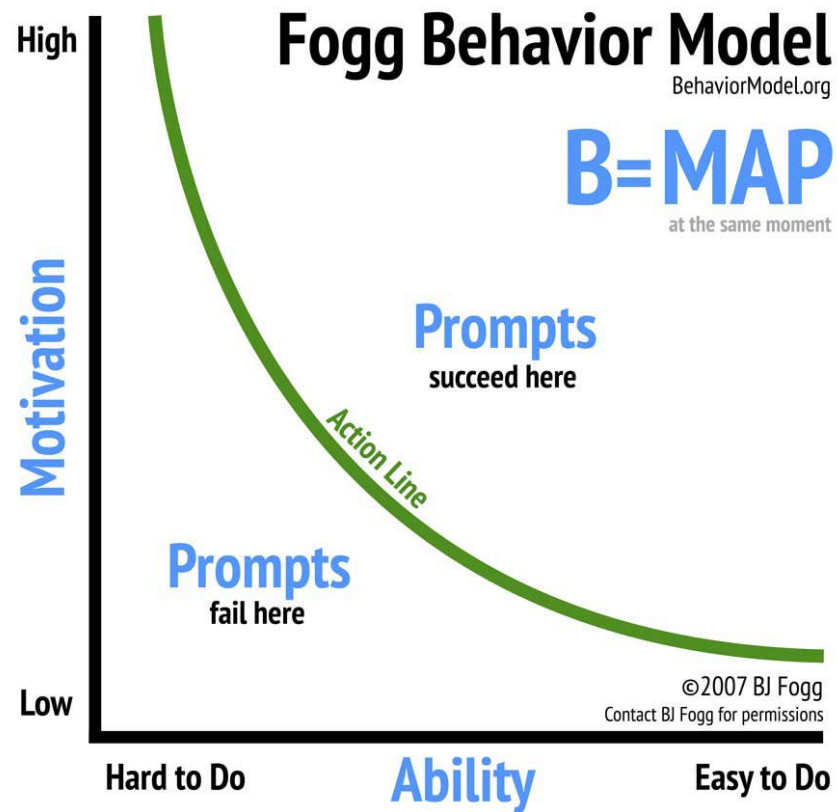
- On top of that, the cognitive ability of anyone is not a solid state
- Our cognitive ability changes with
 - Age
 - Energy
 - State of mind
 -
- To be secure, systems must be secure even when the user's cognitive ability is permanently or temporarily lowered

A secure system is one that is easy for anyone to use

- Research clearly shows that users are more likely to adopt suggestions that they can easily follow
- Very important for all users and crucial for neurodivergent users
- Awareness is not only about how we communicate, but also about what we communicate



Fogg behavior model



What can we do?

- Ensure a message that is easy to understand
- Support users when they need to be supported
- Provide users with the support they need
- Include accessibility functions
- **Reconsider rules and tools**

Thank you for listening!

Feel free to get in touch!

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LinkedIn – Happy to connect!



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