

Moving from a “Human-as-Problem” to a “Human-as-Solution” Cybersecurity Mindset

Rationale

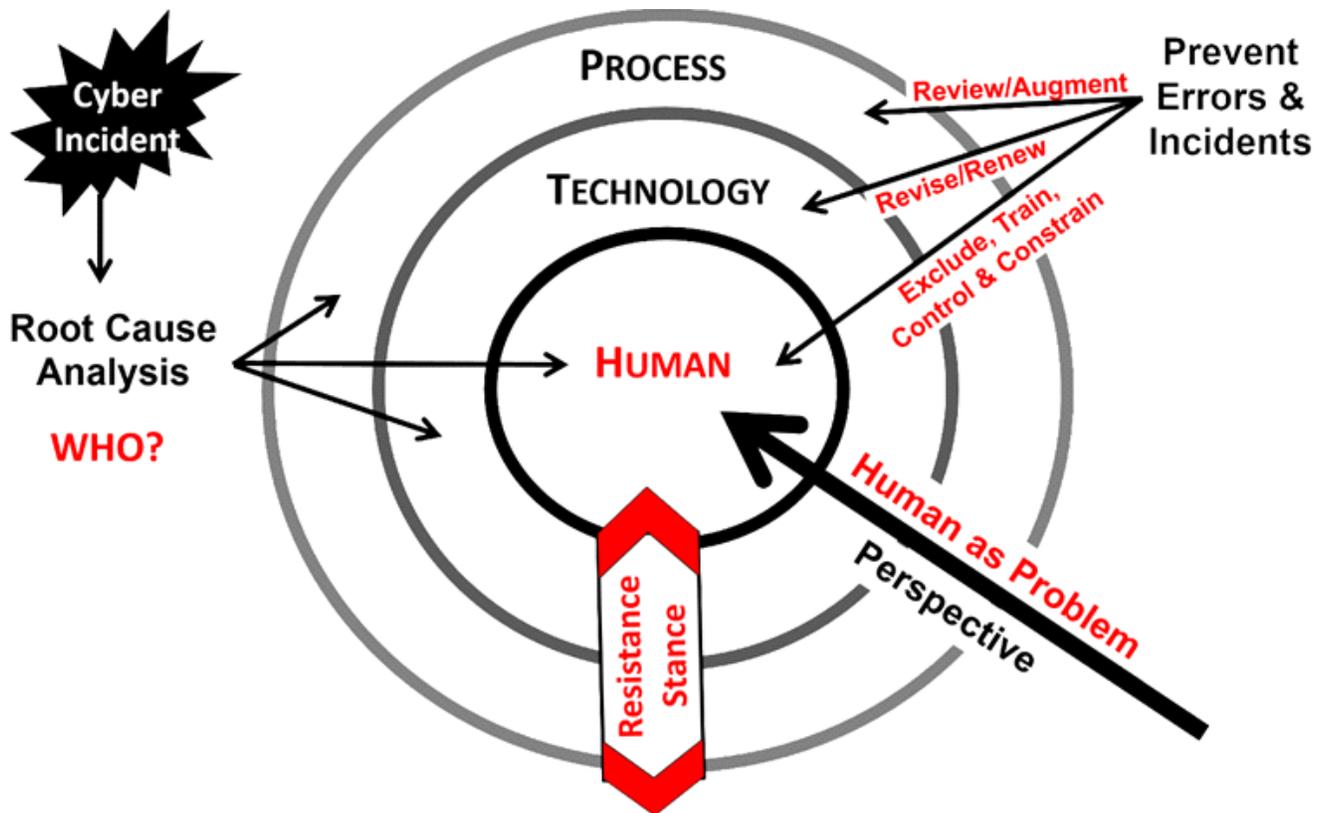
Cybersecurity has gained prominence, with a number of widely publicized security incidents, hacking attacks and data breaches reaching the news over the last few years. The escalation in the numbers of cyber incidents shows no sign of abating. It seems appropriate to take a look at the way cybersecurity is conceptualized and to consider whether there is a need for a mindset change.

Analysis

We applied a “*problematization*” approach to assess current conceptualizations of the cybersecurity problem by government, industry and hackers. The approach we used is based on the “*What’s the problem represented to be*” approach by Carol Bacchi (2009). We scrutinized Five Eyes countries’ cybersecurity strategy documents, industry reports and hacker statements. We looked for stated problems, a lack of something or a suggested measure that revealed the assumed cybersecurity problem.

Our analysis revealed that individual human actors, in a variety of roles such as employees or end users, are generally considered to be “a problem”. Deployed solutions primarily focus on preventing adverse events by building resistance: i.e. implementing new security layers and policies that control and constrain their problematical behaviors. In essence, this treats all humans in the system as if they might well be malicious actors, and the solutions are designed to prevent insecure behaviors. This viewpoint was summarized as “***Human-as-Problem***” mindset.

Dealing with “Human as Problem”



Inspired by Hart & Buiting (2012). Figure from Zimmermann & Renaud (2019)

Consequences

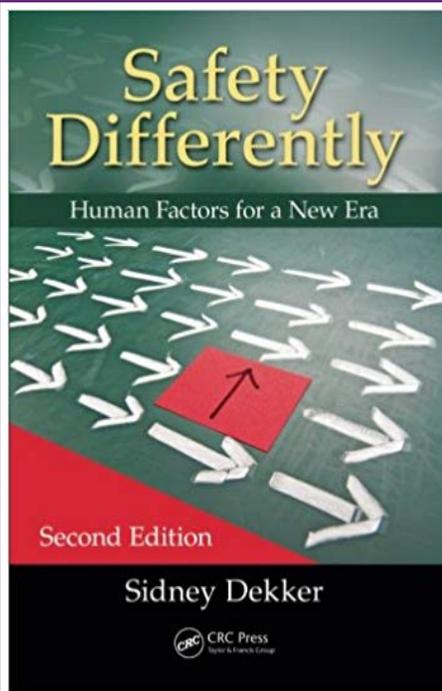
1. Employees find ways around security measures
2. Employees are seen as “The Problem”
3. No organization-wide ownership of cyber security
4. Security gets in the way of task completion
5. Employees are reduced to being rule followers

Stepping Back & Reflecting

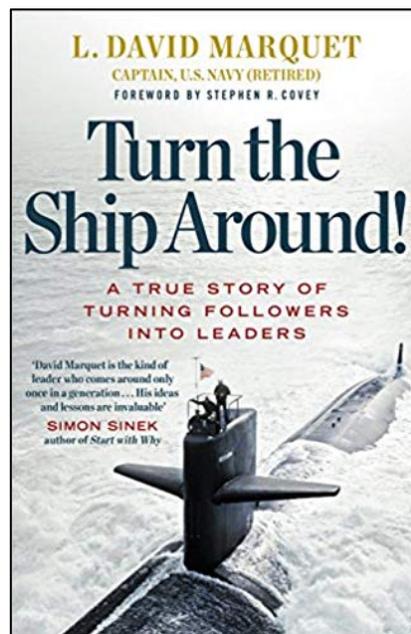
Given the continuing incidences of data breaches and successful hacks, it seems wise to rethink the status quo mindset. We propose a new cybersecurity mindset

A purely *resistance* approach is suboptimal

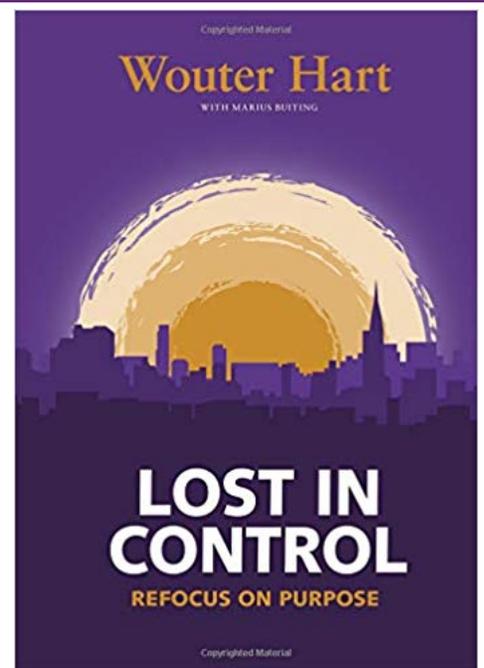
Other disciplines have found a different way: “Human as **Solution**”



Dekker, S. (2014). *Safety, Differently*. Published by: Routledge



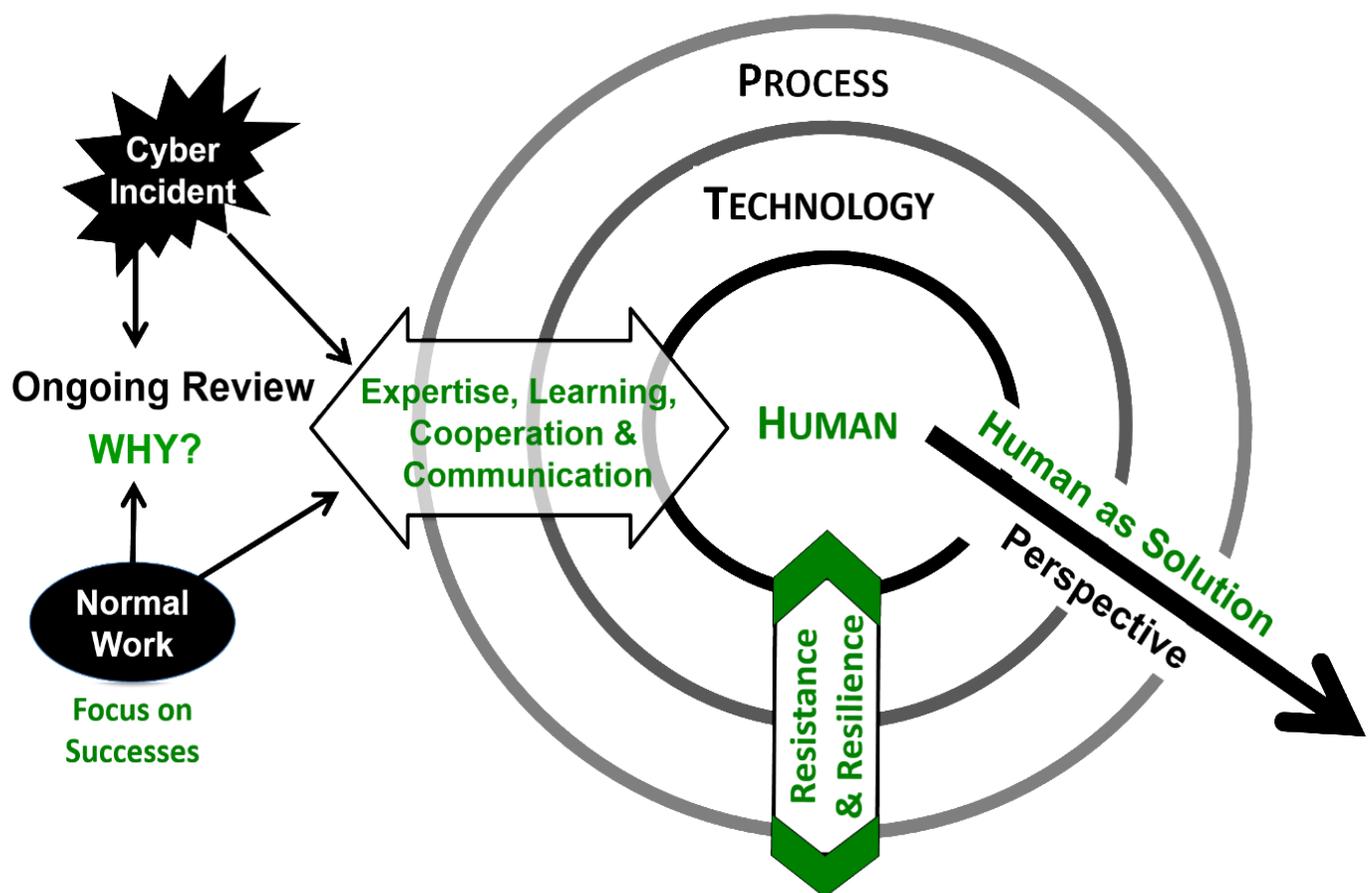
Marquet, D. (2015). *Turn the Ship Around*. Published by: Penguin



Hart, W. & Buiting, M. (2019). *Lost in control: Refocus on purpose*. Published by: Verdraaide organisaties

“Human as Solution”

Acknowledge Human as Proactive Cybersecurity Partner



Inspired by Hart & Buiting (2012). Figure from Zimmermann & Renaud (2019)

Cybersecurity, Differently

This mindset rests on recognition of the fact that the problem is actually the high complexity, interconnectedness and emergent qualities of socio-technical systems, and not a single component of the socio-technical system. The “differently” mindset acknowledges the well-intentioned human's ability to be an important contributor to organizational cybersecurity and their potential to be “part of the solution” rather than “the problem”. The focus is on enhancing factors that contribute to positive outcomes and on building resilience rather than sheer resistance.

In our paper we propose a set of key principles and explain how this mindset could enhance and improve cybersecurity across the socio-technical system, applying a “**Human-as-Solution**” mindset.

Our principles are still preliminary and further research is needed to develop and evaluate concrete measures that contribute to the shift towards the new mindset. However, we hope to have sparked interest in our research and the vision of:

“Cybersecurity, Differently”

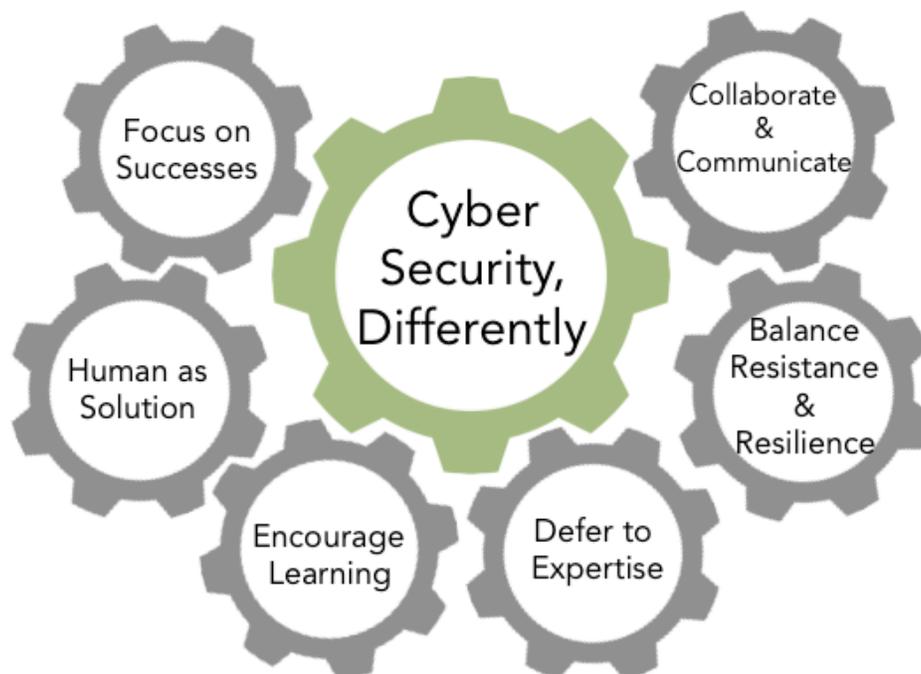


Figure from Zimmermann & Renaud (2019)

Cybersecurity, Differently

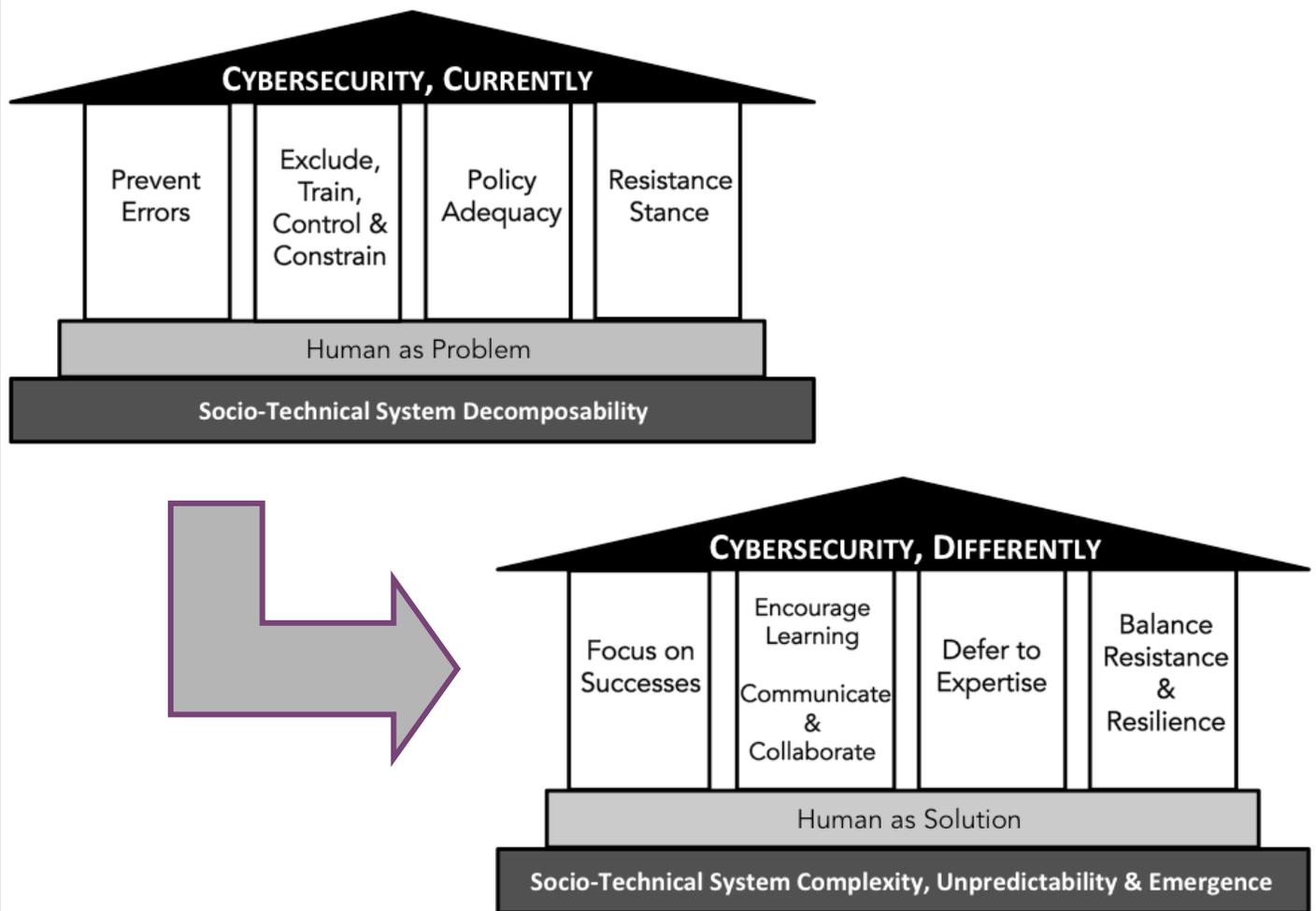


Figure from Zimmermann & Renaud (2019)

Bacchi, C. (2009) *Analysing Policy: What's the problem represented to be?* Frenchs Forest: Pearson Education

Hart, W. & Buiting, M. (2012). *Verdraaide organisaties. Terug naar de bedoeling.* Deventer: Kluwer.

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