

Linking personality and cyber-security

Can knowing your personality type help?

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**CYBERPSYCHOLOGY SECTION
VIRTUAL CONFERENCE**

TUESDAY 6 - WEDNESDAY 7 JULY 2021, VIRTUAL CONFERENCE



1 billion

Records breached in
April 2021

itgovernance.co.uk

64%

of survey respondents
reported a cyber-attack
within the last year

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Cyber-attacks
are a major issue

(WEF, 2019)

The 'human factor'

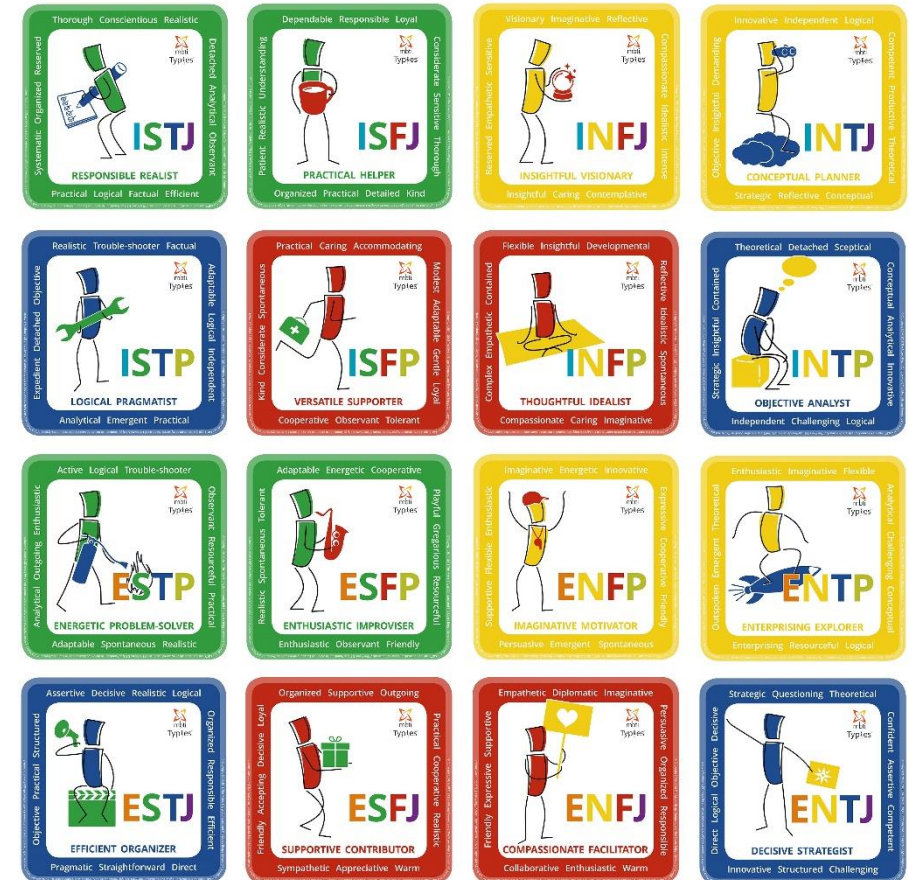
- Many cybercriminals exploit individual psychology – the 'human factor'*
- Much cybersecurity training and guidance is 'one size fits all'
- Research aim: develop personality-based cybersecurity guidelines

*Metalidou, E., Marinagi, C., Trivellas, P., Eberhagen, N., Skourlas, C., & Giannakopoulos, G. (2014). The human factor of information security: Unintentional damage perspective. *Procedia - Social and Behavioral Sciences*, 424-428.



The Myers-Briggs Type Indicator® (MBTI®) model

Where do you get your energy from?	
Extraversion (E)	Introversion (I)
Outer world of people and experiences	Inner world of reflection and thoughts
What sort of information do you prefer?	
Sensing (S)	Intuition (N)
Solid, real information from the senses	Associations, connections, possibilities
How do you prefer to make decisions?	
Thinking (T)	Feeling (F)
On the basis of objective logic	Based on values and the effect on people
How do you deal with the world around you?	
Judging (J)	Perceiving (P)
Planned, organised way, seeking closure	Spontaneous, flexible, options kept open



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Cyber-security is an issue - but people do take it seriously

64% had experienced cyber-attacks in the last year

30% in the last month

15% in the last week

82% agreed or strongly agreed that:

“A data breach would be disastrous for my organization”

Only 13% agreed or strongly agreed:

“If my organization did have a data breach, it would only be a public relations issue”

Good security behaviours endorsed

		Strongly disagree	Disagree	Neither	Agree	Strongly Agree
		1	2	3	4	5
Most endorsed items	I use a password or passcode to unlock my laptop or tablet					
	Everyone in my organization has a role to play in IT security					
	A data breach would be disastrous for my organization					
	I set my computer screen to automatically lock if I don't use it for a prolonged period					
	I always follow all the IT security rules and procedures in my organization					
	In my organization there are clear policies and rules on cyber-security					
Least endorsed items	I only use a password because my IT administrator makes me do so					
	If my organisation did have a data breach, this would only be a public relations issue					
	There are a lot of stupid rules about IT security in my organization					
	Many of the rules about IT security don't really apply to me					
	If I discover a security problem, I continue what I was doing; someone else will fix it					
	Occasionally I will write down a password and leave this note next to my computer					

Scales of cyber-security attitude and behaviour

Suggested by previous research:

- Egelman & Peer, 2015: *SeBis, the Security Behavior Intentions Scale*
- Howard, 2018: *Cybersecurity Attitudes Scale*
- Parson et al, 2014: *HAIS-Q, the Human Aspects of Information Security Questionnaire*

Conscientiously follows rules

- Follows IT security rules and processes
- Believes such rules to be generally helpful and sensible
- Reads security briefings
- Is a “good citizen” in terms of IT security; reports issues

Keeps passwords and devices secure

- Uses passwords readily and willingly
- Keeps passwords secure; does not write them down
- Locks computer when not in use
- Keeps up to date with security protocols

Knowledge-informed carefulness

- Recognises when sites are secure (or not)
- Only submits information to secure sites
- Checks links before clicking
- Verifies attachments before opening
- Does not re-use passwords

Attitude and behaviour scales

Scale	Items	Item Mean	Alpha
Conscientiously follows rules	11	3.74	0.77
Keeps passwords and devices secure	7	4.00	0.65
Knowledge-informed carefulness	7	3.44	0.76

Job role and cyber-security

Scale	Mean, IT roles	Mean, other	Cohen d
Conscientiously follows rules	3.90	3.73	0.38
Keeps passwords and devices secure	4.52	3.96	0.95
Knowledge-informed carefulness	3.99	3.41	0.79
Overall cyber-security score	6.91	5.40	0.76

All differences statistically significant (independent-samples t-test)

Personality type and cyber-security

Scale	E-I	S-N	T-F	J-P
Conscientiously follows rules		S (0.18)		J (0.29)
Keeps passwords and devices secure				J (0.29)
Knowledge-informed carefulness	I (0.18)		T (0.25)	
Overall cyber-security score			T (0.19)	J (0.22)

All differences shown are statistically significant (independent-samples t-test)
Table shows direction (e.g. "I" indicates Introverts have a significantly higher mean than Extraverts),
with Cohen's d in parentheses.

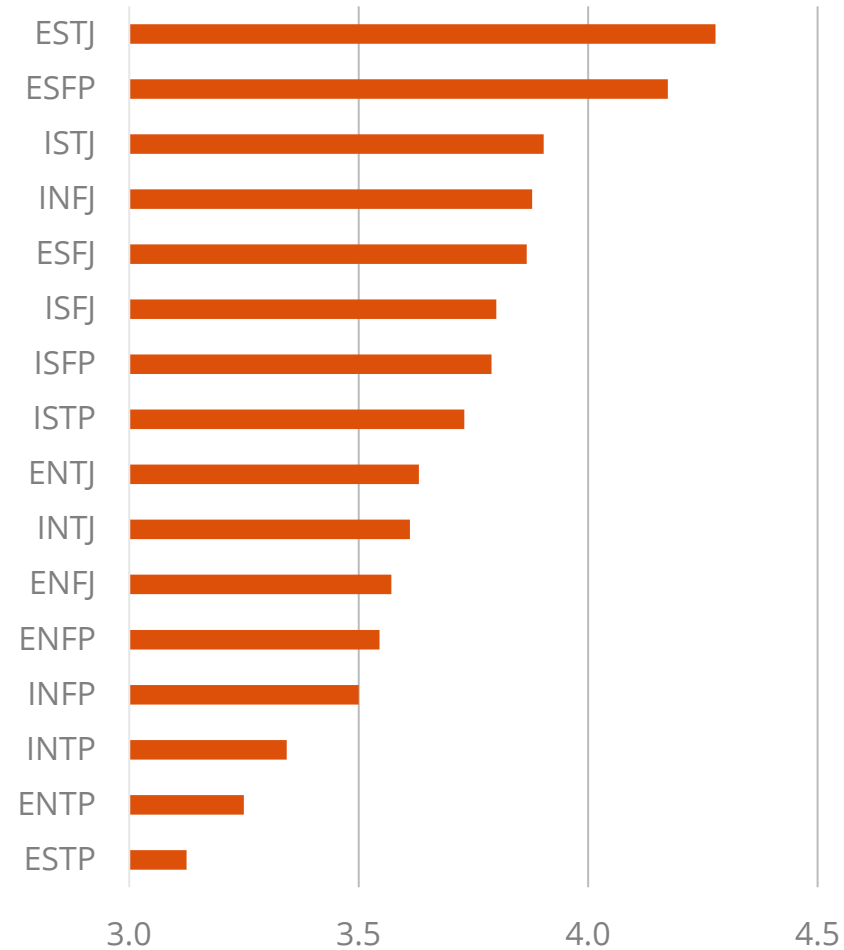
Creating guidelines

- Common mistakes
 - For example, re-using the same password where you can; submitting information to websites without first checking that it will be sent securely
- Personality-based guidelines
 - Strengths and tips for each type

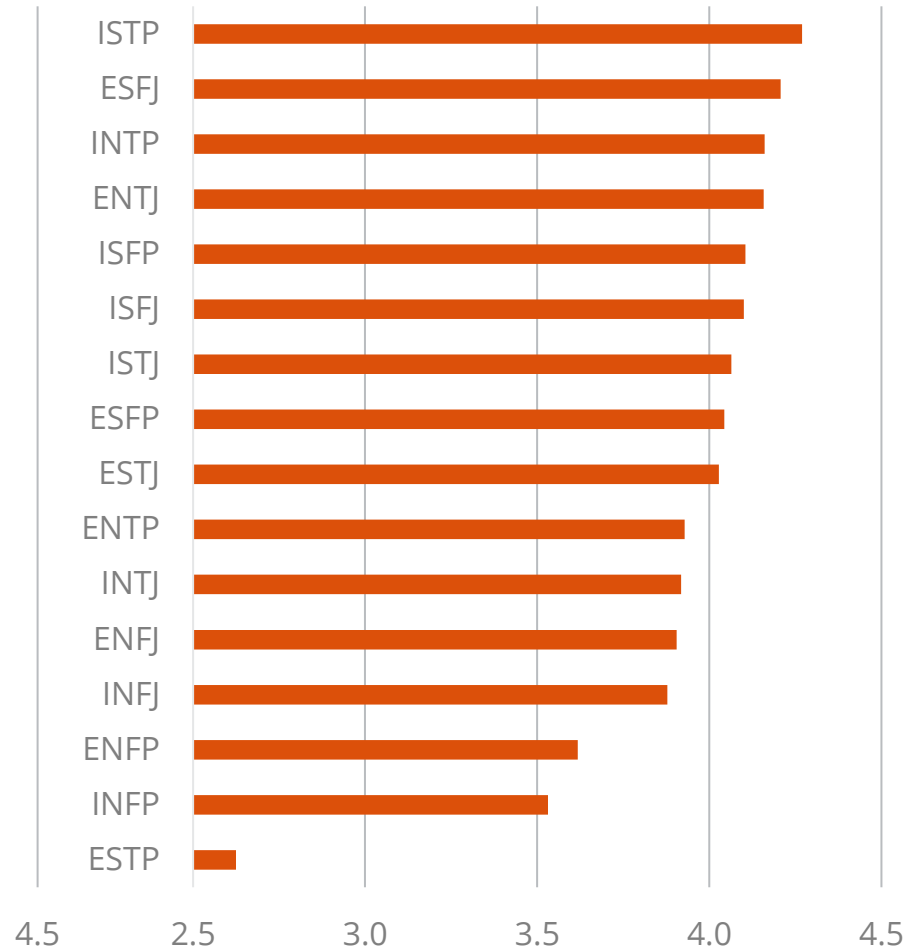


Some item-level differences

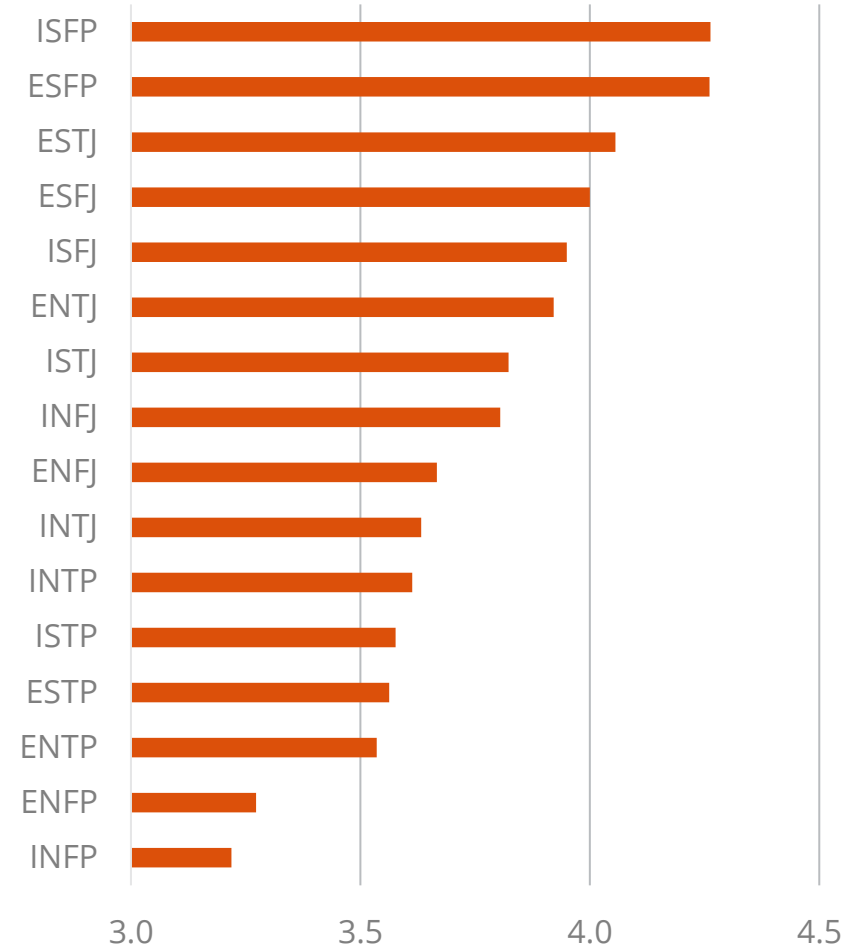
I have never ignored or contravened any of the IT security procedures of my organization



In my organization there are clear policies and rules on cyber-security



I manually lock my computer screen when I step away from it



Personality-specific guidelines

Each MBTI type will have particular cyber-security strengths and vulnerabilities

Cyber-security tips for each MBTI® type

Here are the likely cyber-security strengths, and two tips, for people with preferences for **Extraversion**.

E

ESTP

- When they are persuaded that cyber-security is important, ESTPs can quickly spot when things are not right and take immediate action

Cyber-security tips:

- IT security is important, and the rules do apply to you
- Get specific examples of what you can do differently, and act on them



ENFP

- ENFPs are one of the first to realize when a new security process is in place
- Will take IT security very seriously if it becomes one of their values

Cyber-security tips:

- Be suspicious of emails that have an emotional appeal for you
- Stop and think before you click



ESTJ

- ESTJs are likely to follow IT security rules and processes and seek to improve them
- Generally, they take cyber-security seriously

Cyber-security tips:

- Don't always do things the same way or use the same passwords
- Don't be tempted to cut corners in order to be more efficient



ESFJ

- ESFJs are aware of IT security policies and follow them conscientiously
- They form security habits and use them to follow the rules efficiently

Cyber-security tips:

- Be careful who you trust. People online may not be who they seem
- Don't always do things in the same way, or use the same passwords



ESFP

- ESFPs will take quick action when they spot that something is not right
- Generally, they follow IT security rules and policies

Cyber-security tips:

- Don't trust a public network for sensitive data even if it has a password
- Don't take things for granted – it pays to be vigilant, perhaps even untrusting



ENTP

- IT-savvy ENTPs will strive to be competent and avoid 'stupid' errors
- Keen to make things happen (though this can mean bending the rules)

Cyber-security tips:

- If you compromise security, others may see you as incompetent
- Slow down before you read emails – you might spot something



ENTJ

- ENTJs are one of the first types to realize when a new security process is in place
- Will keep up to date and ask questions to understand security issues

Cyber-security tips:

- Don't rush to change security processes – find out more first
- Avoid overruling others if they have a fuller knowledge of IT security



ENFJ

- Will follow the rules when the rules are clear
- Will take security seriously when aware of effects of breaches on people

Cyber-security tips:

- Be proactive about IT security, even at home
- Don't re-use passwords or use the same one for different apps



Cyber-security tips for each MBTI® type

Here are the likely cyber-security strengths, and two tips, for people with preferences for **Introversion**.

I

ISTJ

- ISTJs are likely to spot discrepancies and errors in phishing emails
- Generally, they follow IT security rules and policies

Cyber-security tips:

- Don't just use variations on the same password or passwords
- Stay alert. Previous experience should not be your only guide



INFJ

- INFJs can over-complicate things and search for hidden meanings. This can be an asset in IT security

Cyber-security tips:

- If something doesn't feel right then check, check and check again
- Don't forget to check details – they are important!



ISTP

- ISTPs have a healthy mistrust of systems and of other people online
- Happy to follow IT security rules when they make logical sense

Cyber-security tips:

- Make the effort to find the reasons for a rule before you bend it
- Doing things in your own way quickly in the moment can be risky



INFP

- INFPs are unlikely to make sudden, risky choices
- If aware of the effects of poor security on others, they can see the need for rules

Cyber-security tips:

- Your organization will have IT security rules. Follow them
- To avoid harming others, take personal responsibility for IT security



ISFJ

- ISFJs are likely to spot discrepancies and errors in phishing emails
- Unlikely to be caught out twice by the same cyber-attack

Cyber-security tips:

- Don't trust a public network for sensitive data even if it has a password
- Be careful who you trust. Online, people may not be who you think



INTJ

- INTJs value knowledge and strive to be capable and competent
- Generally, they follow IT security rules and policies

Cyber-security tips:

- You don't necessarily know best, even if the rules seem unnecessary
- If you want to be competent, remember to check the details of emails



INTP

- Many INTPs are knowledgeable about cyber-security issues
- INTPs are very aware that anyone can be caught out by cyber-attacks

Cyber-security tips:

- Find the IT security rules for your organization and follow them
- You don't always know best! The rules are there for a reason



ISFP

- ISFPs take IT security seriously and are careful in their online behavior
- Generally, they follow IT security rules and policies

Cyber-security tips:

- Pause before you click
- Remember that people online, even friends, may not be who or what they seem



Summary

- Cyber-attacks are an issue; most have experienced them
- People take this seriously and most have good security behaviours, good knowledge and know how to use passwords
- IT staff and those in IT focused organizations are particularly aware and knowledgeable
- There are however some common errors
- Different personality types have different strengths and vulnerabilities
- Personality type-specific tips have been produced



Thank you!



To download guidelines or a full report:
<https://eu.themyersbriggs.com/en/Cyber-security>

Or contact me: jhackston@themyersbriggs.com



Any questions?