

 Alexandra von Preuschen
 Justus-Liebig-University Giessen

 Monika C. Schuhmacher
 Justus-Liebig-University Giessen

 Verena Zimmermann
 ETH Zurich

Alexandra von Preuschen

Beyond Fear and Frustration - Towards a Holistic Understanding of Emotions in Cybersecurity

„The human factor is the weakest link in cybersecurity“

Schneier, 2000

THEY WILL **DESTROY** YOUR DATA!

YOU ARE NOT SAFE!

YOU ARE THE TARGET!

SMALL CLICK, BIG IMPACT!

ATTACKERS CAN SEE EVERYTHING

ACT NOW OR ALL DATA IS **LOST FOREVER**

HACKERS WILL GET INTO EVERYTHING

IF YOU MAKE **MISTAKES**, YOU WILL BE FIRED



Research Questions

RQ1

Which **emotions** do employees perceive towards organizational cybersecurity?

RQ2

What **causes** emotions in the context of organizational cybersecurity?

RQ3

What are the **consequences** of emotions in organizational cybersecurity?

Data



Qualitative Survey (n = 112)



Semi-structured interviews (n = 26)

Data Analysis



Qualitative Survey

n = 112



Semi-structured interviews

n = 26

**Analysis
Methods**

Thematic Analysis

**Dependency
Analysis**

Segment-analysis of code configurations

e.g. cause + emotion: "Countless passwords. That annoys me. (I_P21)"

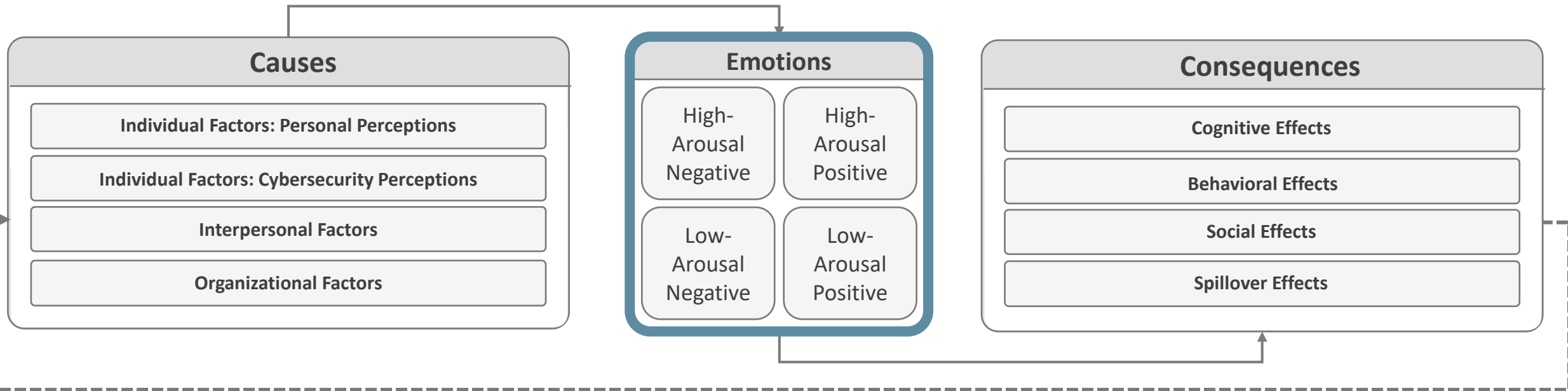
**Emotion
classification**

Circumplex Model (divides into arousal and valence)

RQ2 **Causes of emotions**

RQ1 **Emotions**

RQ3 **Consequences**



impotent

secure and
self-confident

happy

left alone

spiteful

fearful

disappointed

ashamed

empathetic

sympathetic

indifferent

astonished

threatened

threatened

averse

trustful

fascinated

dependent

powerless

helpless

frustrated

dull

action-motivated

dismissive

overwhelmed

hopeful

dependent

fatigued

interested

uncomfortable

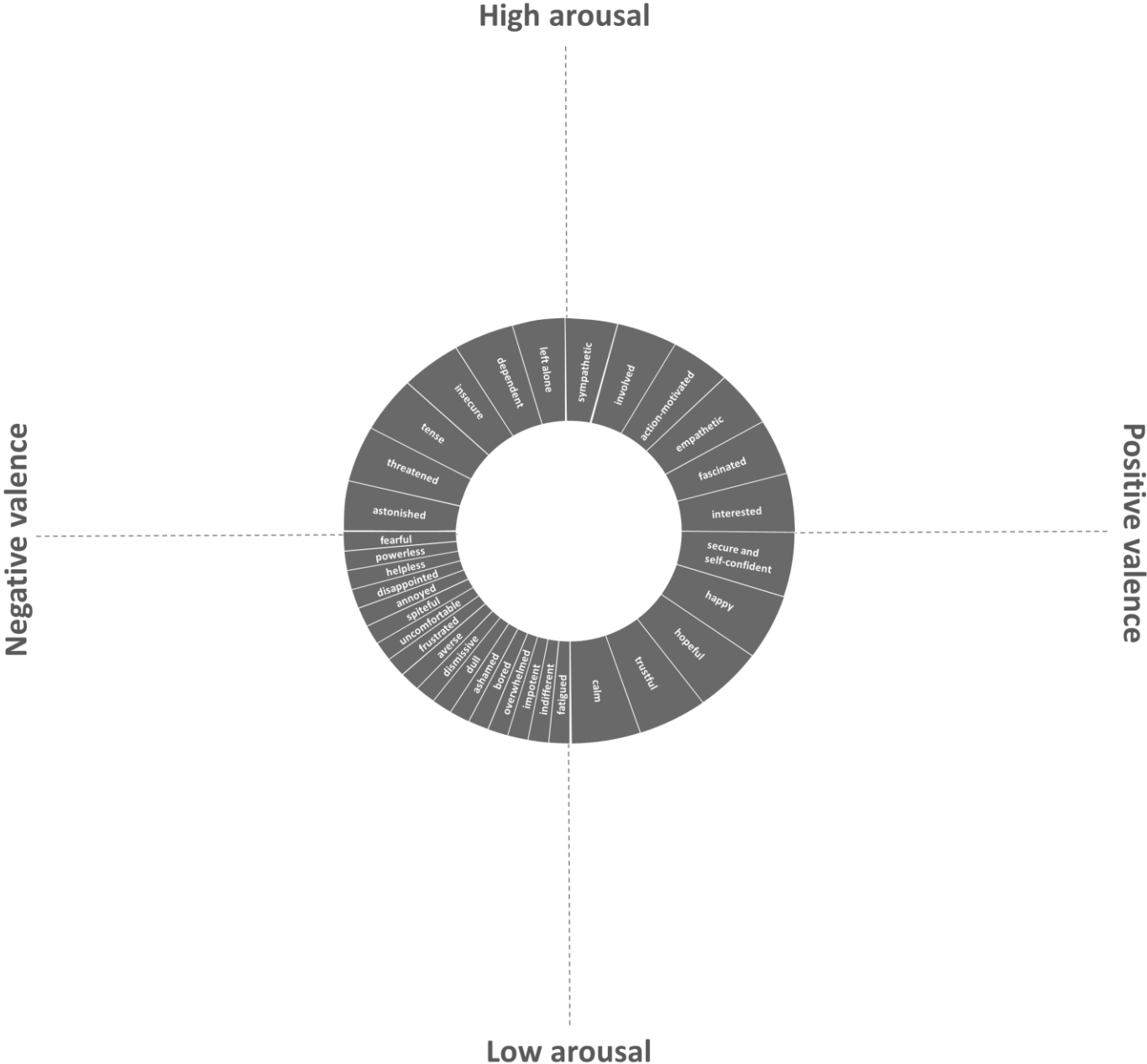
involved

bored

calm

annoyed

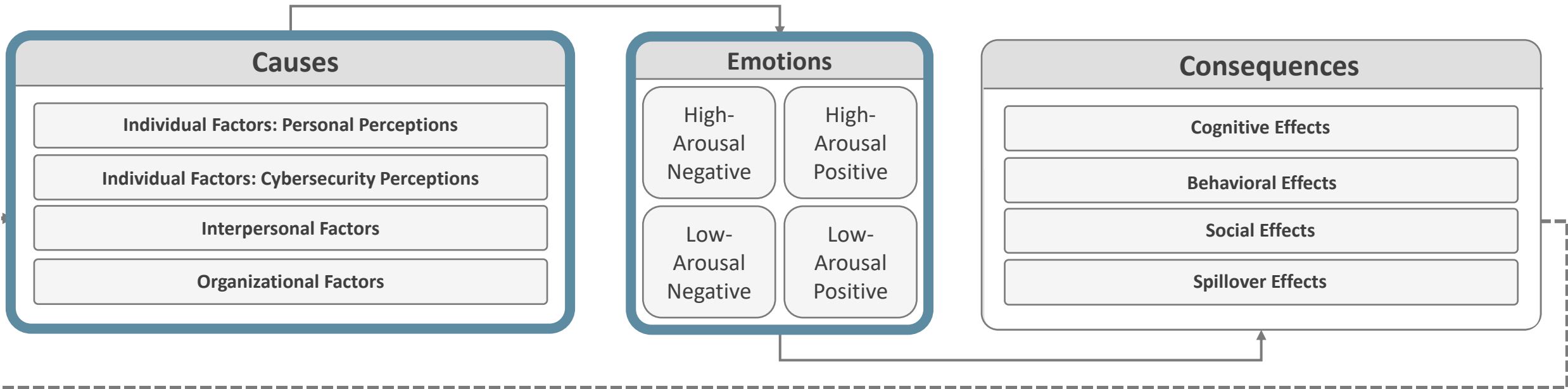
tense

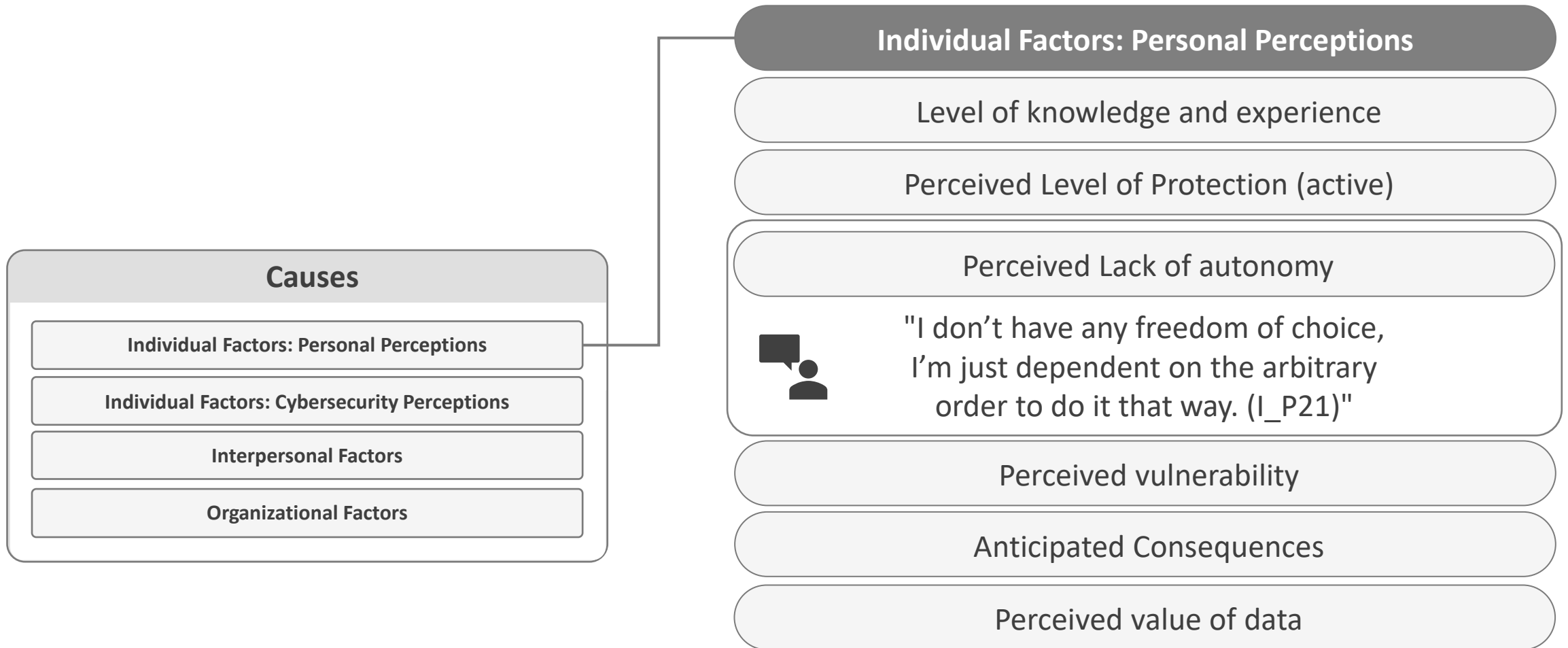


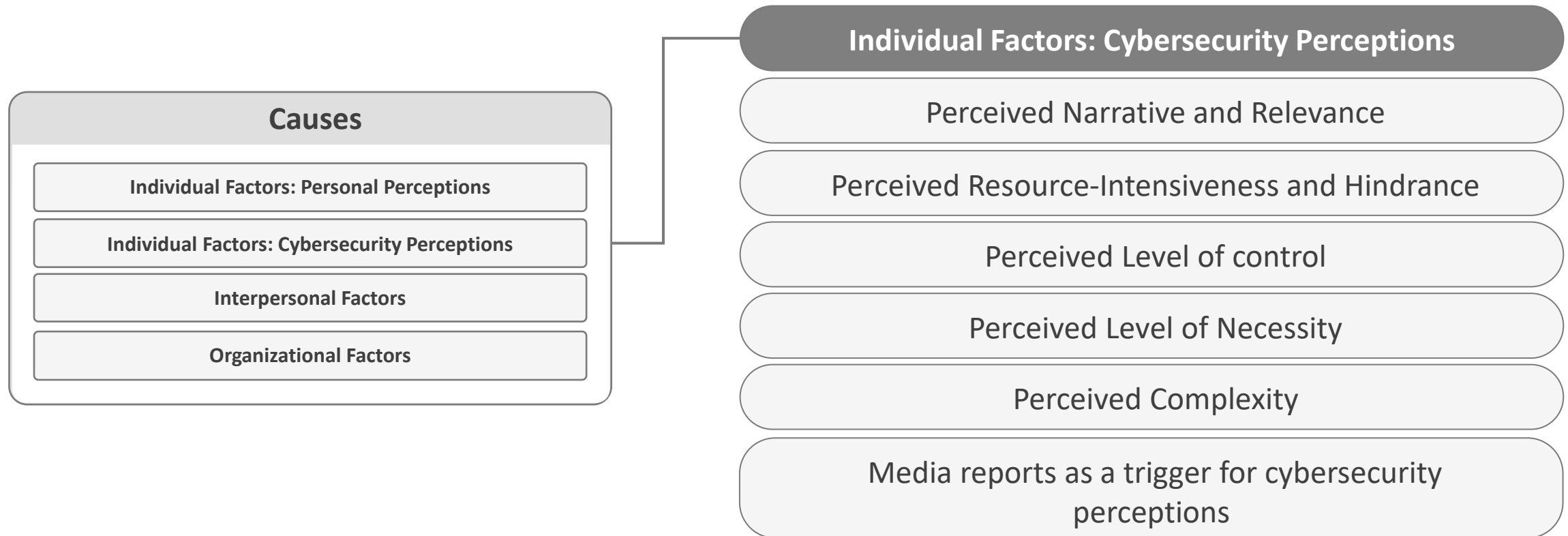
RQ2 Causes of emotions

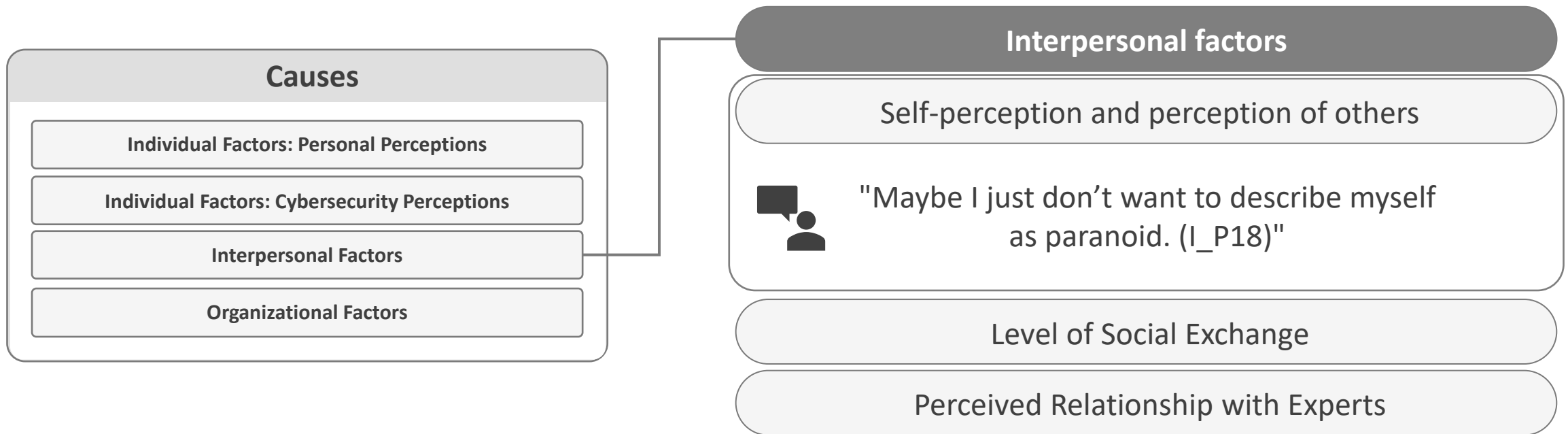
RQ1 Emotions

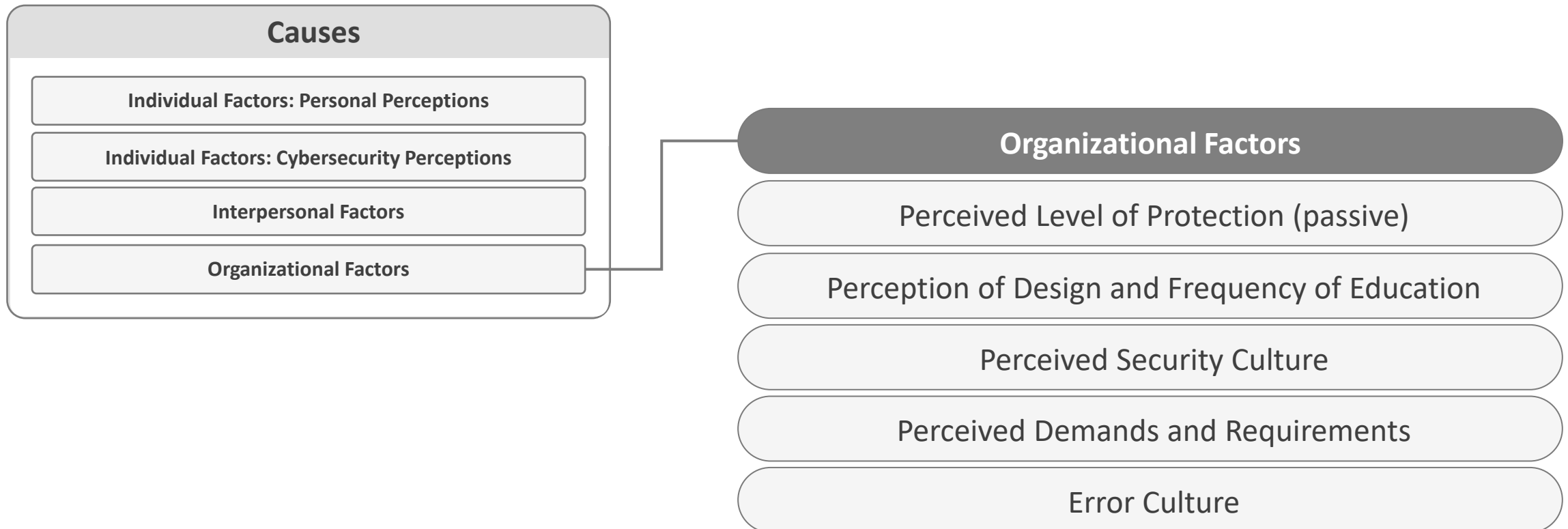
RQ3 Consequences



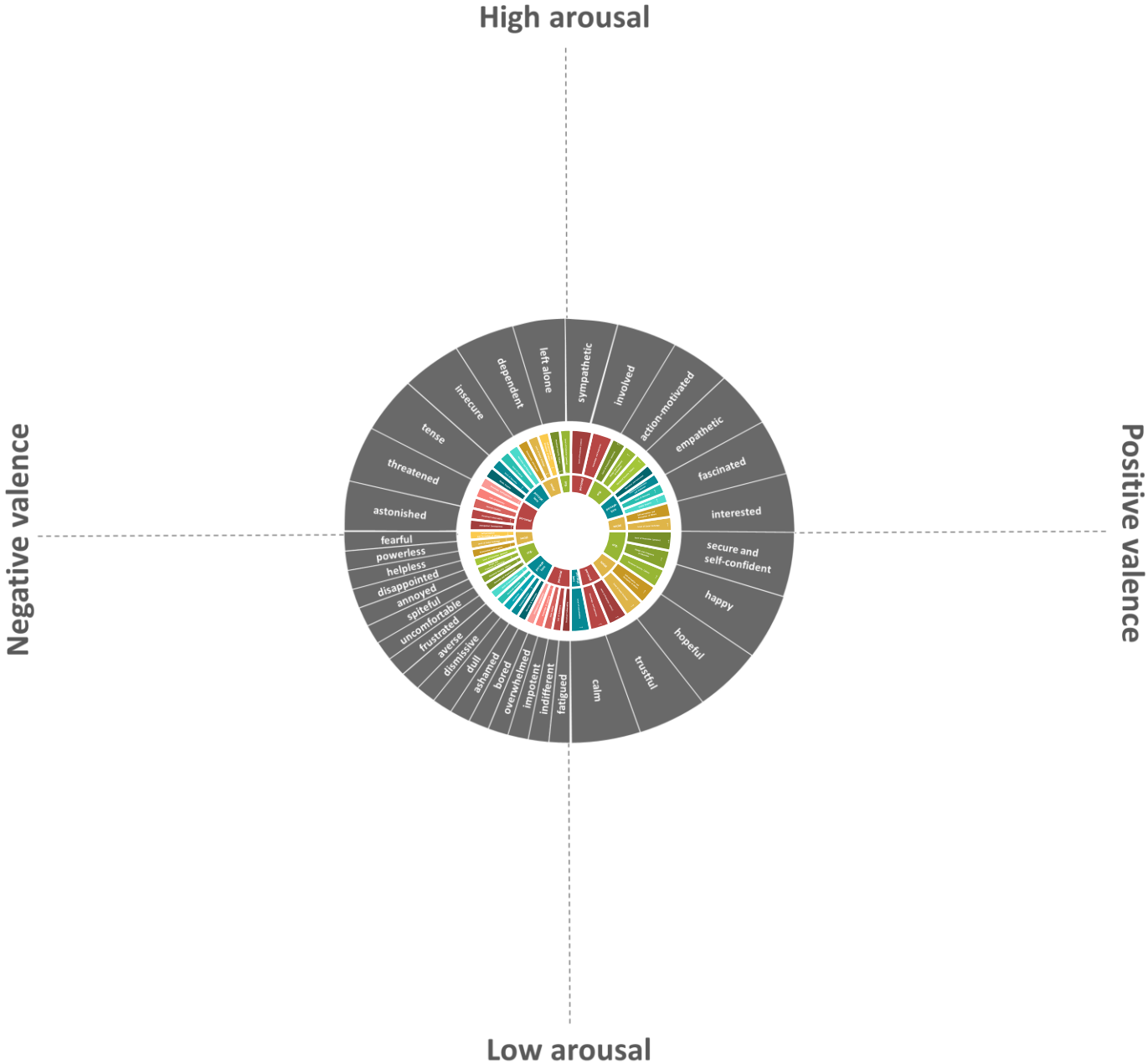


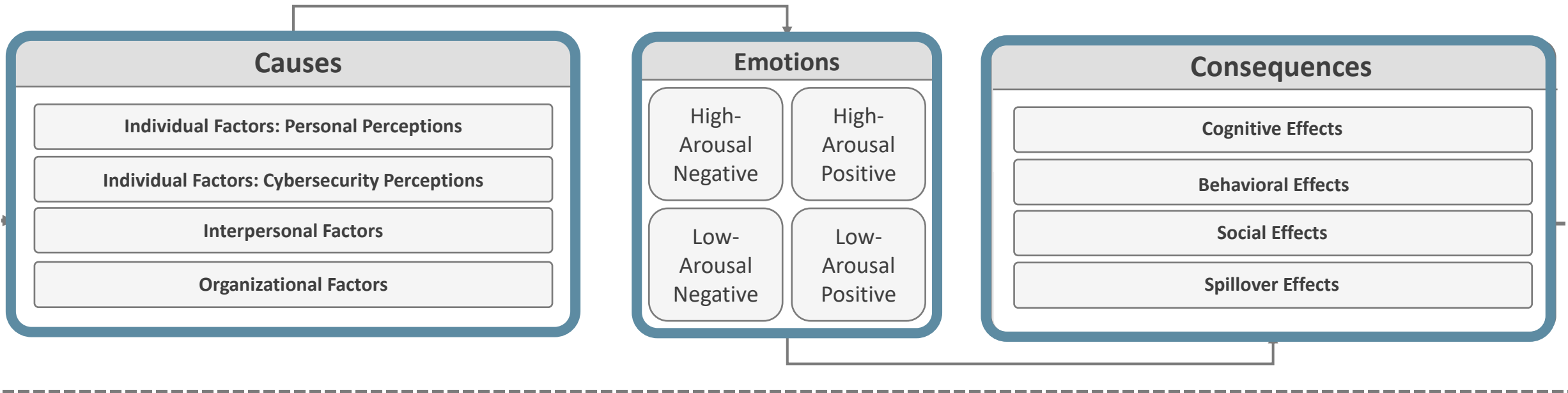
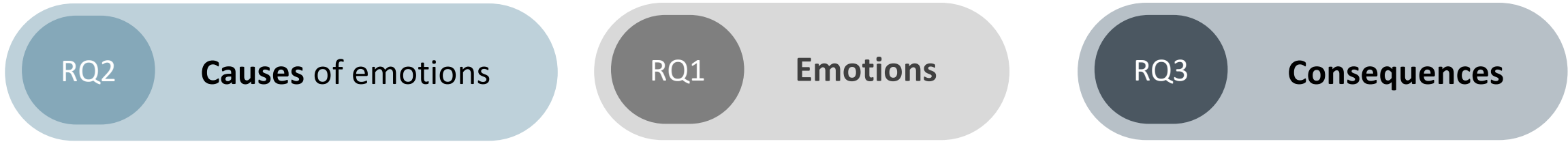


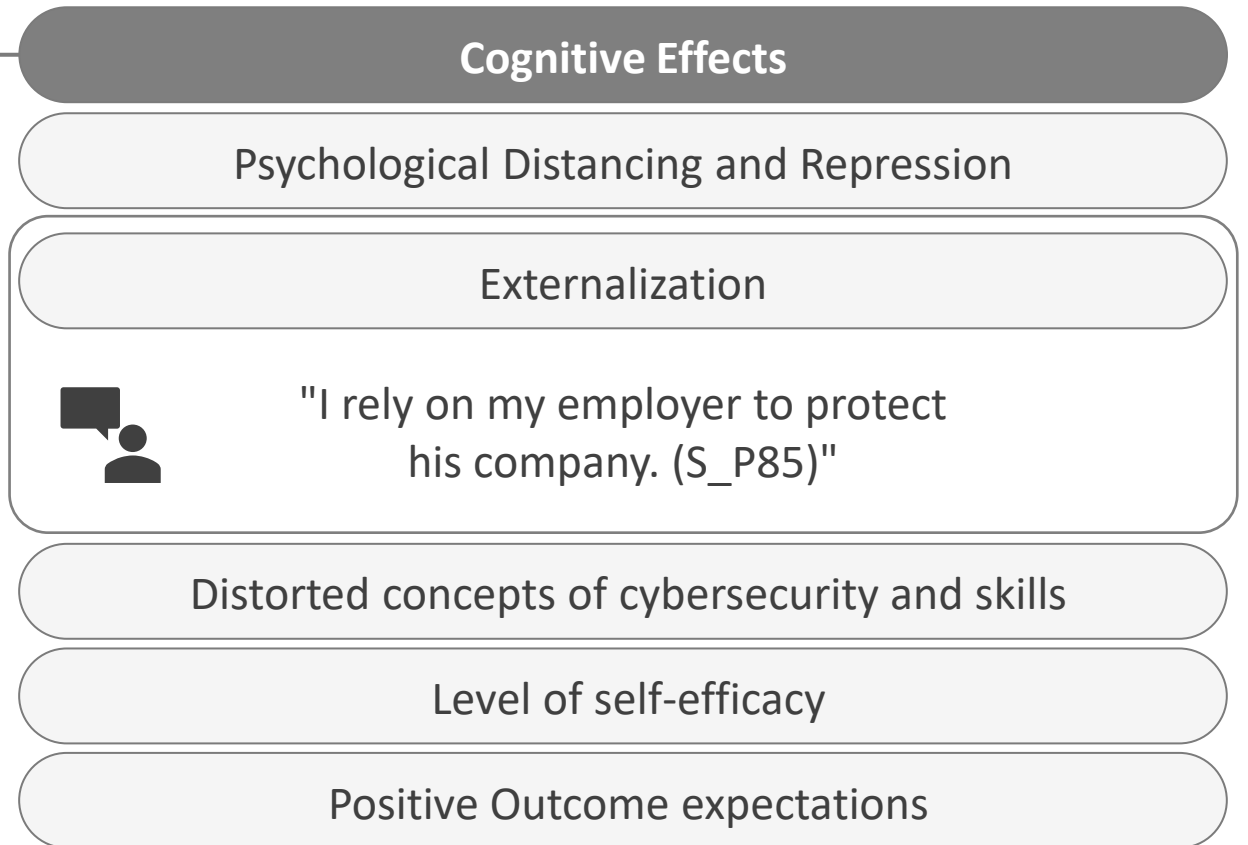
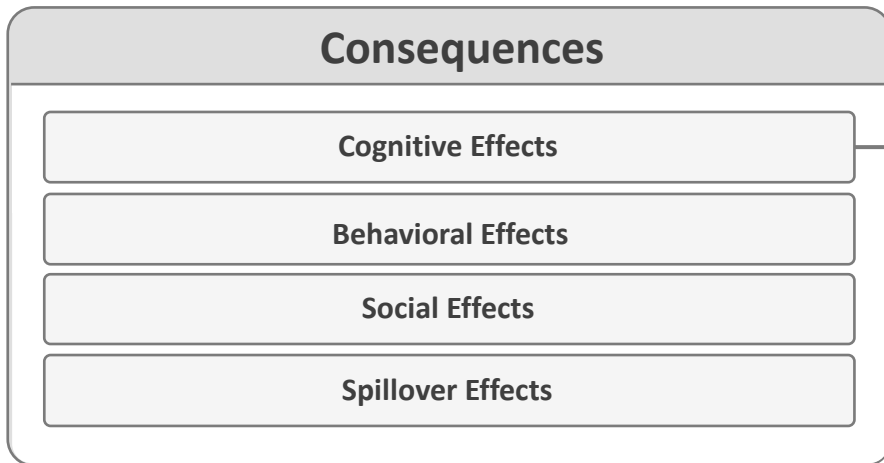


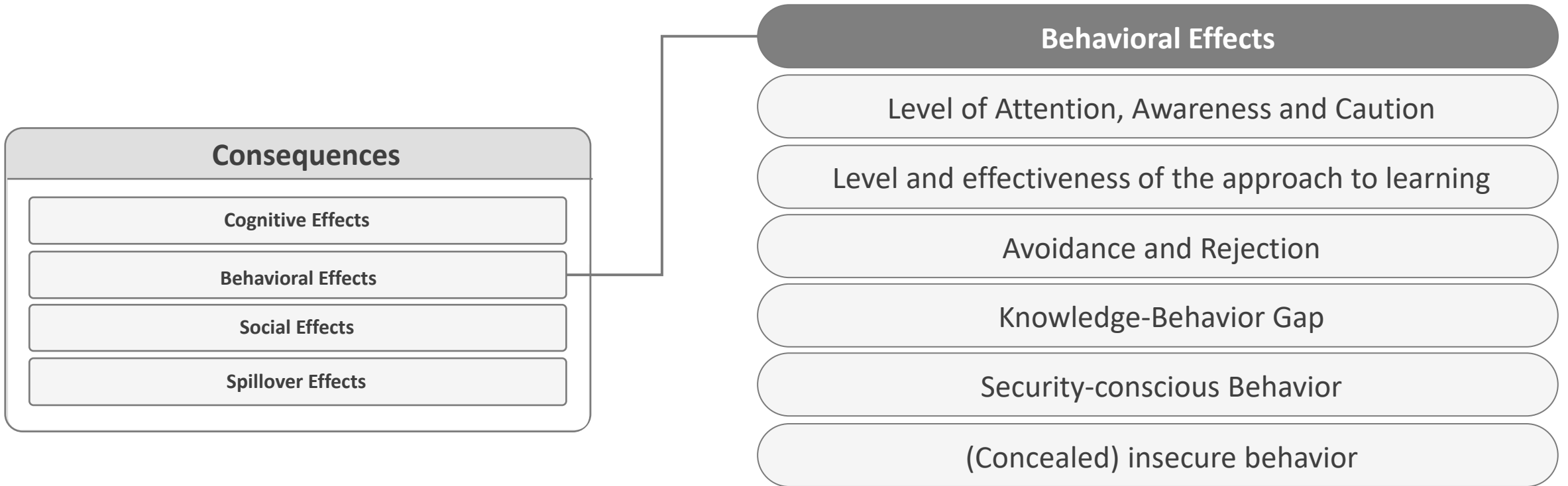




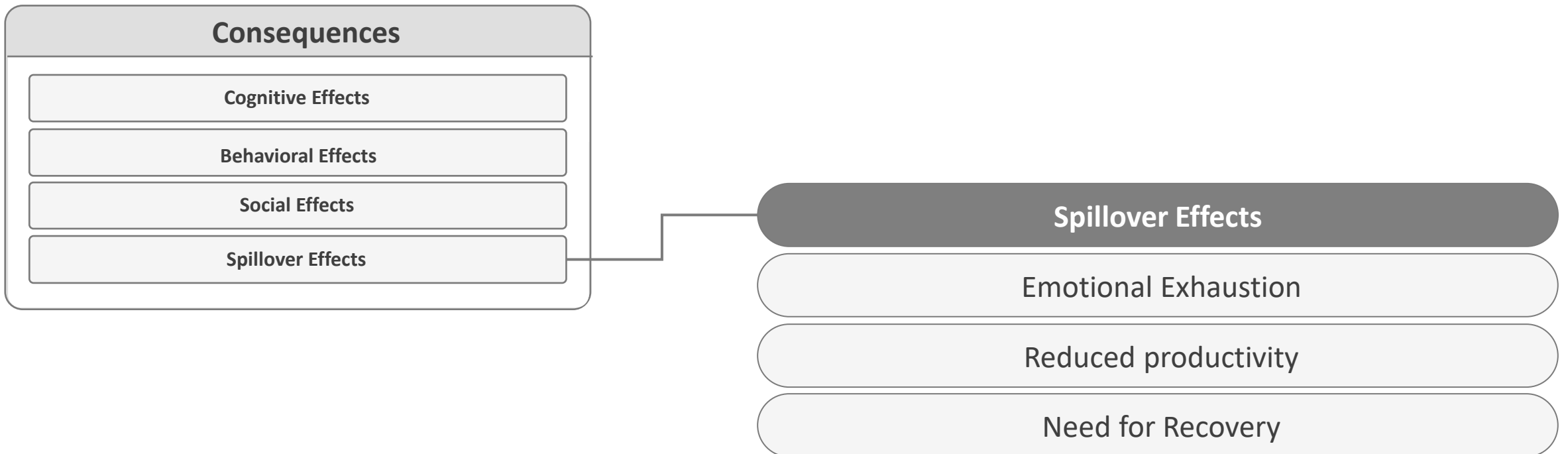












Establishment of an emotion-centered mindset

Cultivate Empathy

Set the stage

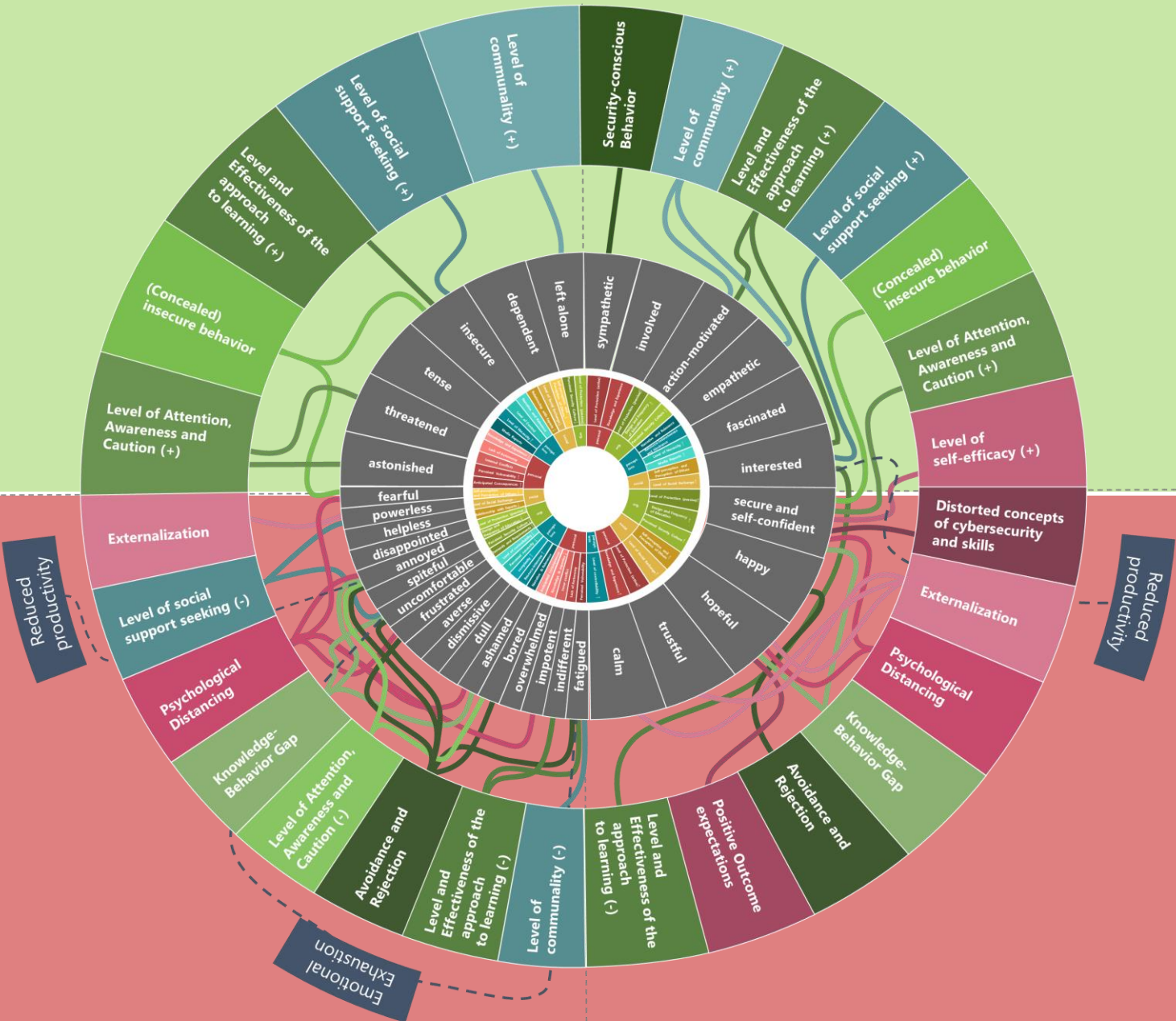
Foster emotional reflection




High arousal




Low arousal




Negative valence

Positive valence



 Alexandra von Preuschen
 Justus-Liebig-University Gießen
 Alexandra.vonPreuschen@wirtschaft.uni-giessen.de

 Verena Zimmermann
 ETH Zürich
 Verena.Zimmermann@gess.ethz.ch

 Monika C. Schuhmacher
 Justus-Liebig-University Gießen
 Monika.Schuhmacher@wirtschaft.uni-giessen.de



Scan me
to read the paper!



Reach out to us!