

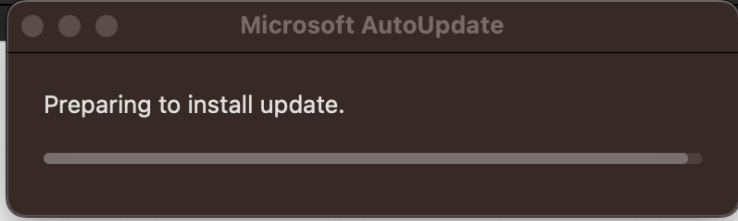
# Technostress - The dark side of technology

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RALUCA ALEXANDRA STANA, PHD

ASSISTANT PROFESSOR, INSTITUTE FOR PEOPLE AND TECHNOLOGY

SUSTAINABLE DIGITALIZATION



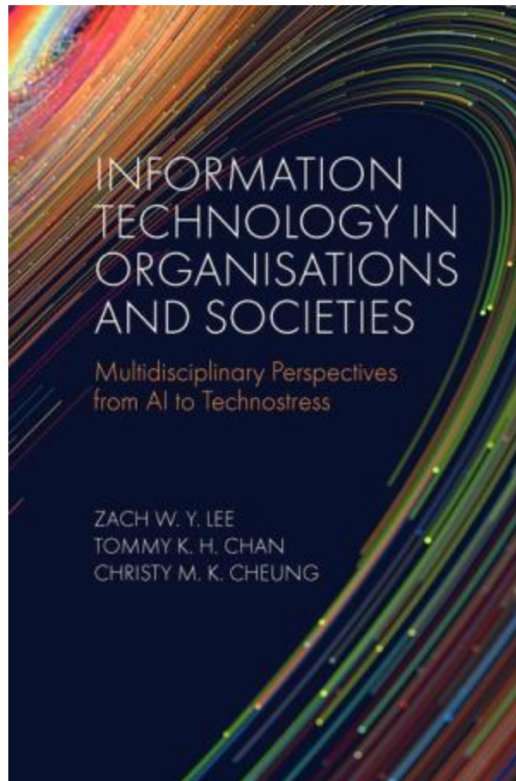
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SUSTAINABLE DIGITALIZATION

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**EPISODE** | 31. MAJ 2022 | 56 MIN. | P1

### Technostress

Hjerneboksen på P1 >

**LYT**

**OM DENNE EPISODE**

Hvad er technostress? Hvordan er det opstået? Hvem bliver ramt af technostress? Hvor udbredt er technostress? Hvad kan vi gøre ved technostress? Vi har eksperter i studiet.

Vært: Peter Lund Madsen.

**Kontakt:** [raluca@ruc.dk](mailto:raluca@ruc.dk)

**Bio:**

- PostDoc I Demokratisk Iværksætter
- PhD indenfor Technostress og Forpligtelse (Information Systems og Sociologi)
- Cand.it. i Digital Innovation and Management
- Business Transformation,
- Big Data, 3M Entrepreneur



“

” Technostress is *a stress phenomenon experienced due to living with digital technology.*”

”

WHAT IS  
TECHNOSTRESS?

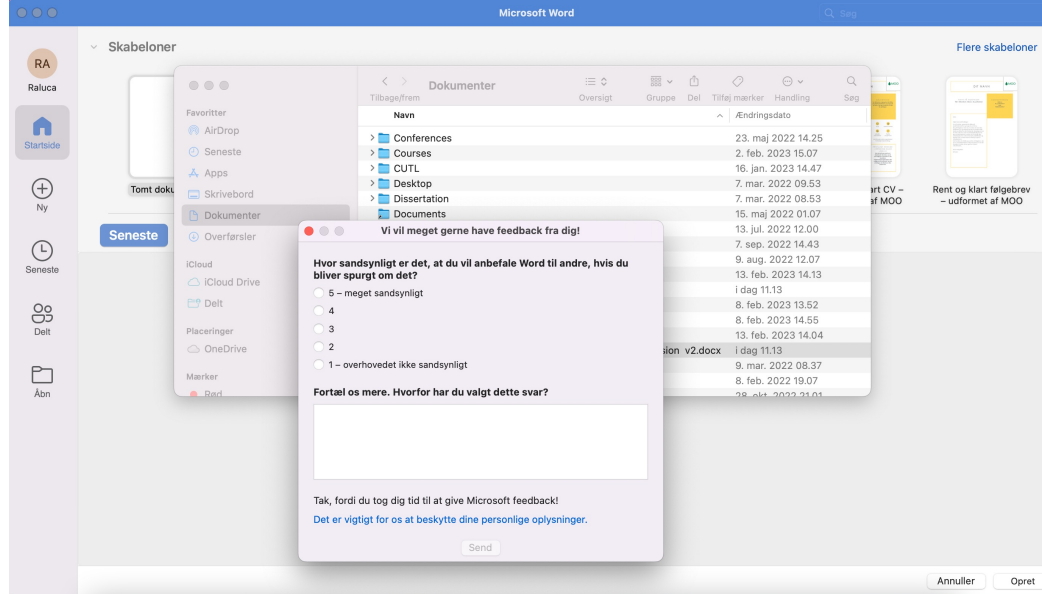


## "Microsoft Defender" vil gerne filtrere netværksindhold

Al netværksaktivitet på denne Mac kan være filtreret eller overvåget.

Tillad

Tillad ikke



*"Another thing you have to administer is like, that the notifications and how they disturb you. But, you know, on the other hand (...) people should be able to reach you if they need (you)" (Employee)*

## Beskyt din konto

Din organisation kræver, at du konfigurerer følgende metoder til at bevise, hvem du er.

### Microsoft Authenticator



Start med at hente appen

Installér Microsoft Authenticator-appen på din telefon. [Hent nu](#)

Når du har installeret Microsoft Authenticator-appen på din enhed, skal du vælge "Næste".

[Jeg vil bruge en anden godkenderapp](#)

Næste

[Jeg vil konfigurere en anden metode](#)

'You can classify it as technostress [...]It's not only that you're getting angry and might act irrationally because of it, but well, **if you're in time pressure, say you're preparing for some meeting, it's in ten minutes, and you wanted to open some presentation and also some application, and also connect to some server,** prepare everything on your screen to be ready, and something doesn't work, then, of course, it's irritating, and then you're really stressed, and pressed on time, and of course the source it's the technology that doesn't work as it is expected, [...] people on the other side are waiting, and they are writing on some other channels, "Are you there? We are waiting for you."' (Employee 1)



# Stress, 1936, Hans Selye

Teknostres –  
1982 Craig Brod,  
PhD



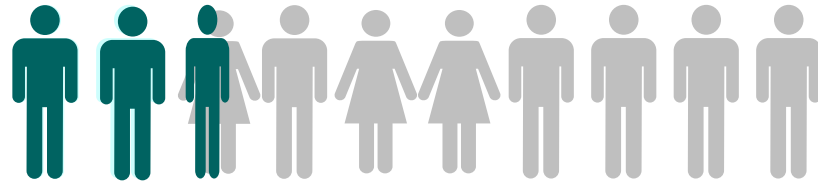
Women at work in the bookkeeping room at the Bank of America in 1970. Hulton Archive/Getty Images



# IS (TECHNO)STRESS AN ISSUE?

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25,1%



2017



25,1% have reported high stress in 2017 based on Cohen's stress scale.  
(Jensen, Davidsen, Ekholm, & Christensen, 2017).

According to Stress Forening (2020):

- 430,000 employees experience acute stress symptoms daily,
- Costing the Danish government 1.5 million workdays,
- Or 27 billion Danish crowns (over three billion US dollars).

# TECHNOSTRESS RESEARCH IMPORTANT CONCEPTUALIZATIONS

## STRESSORS

Stressful events or properties of events that individuals encounter (Cooper et al., 2001).

## STRAINS

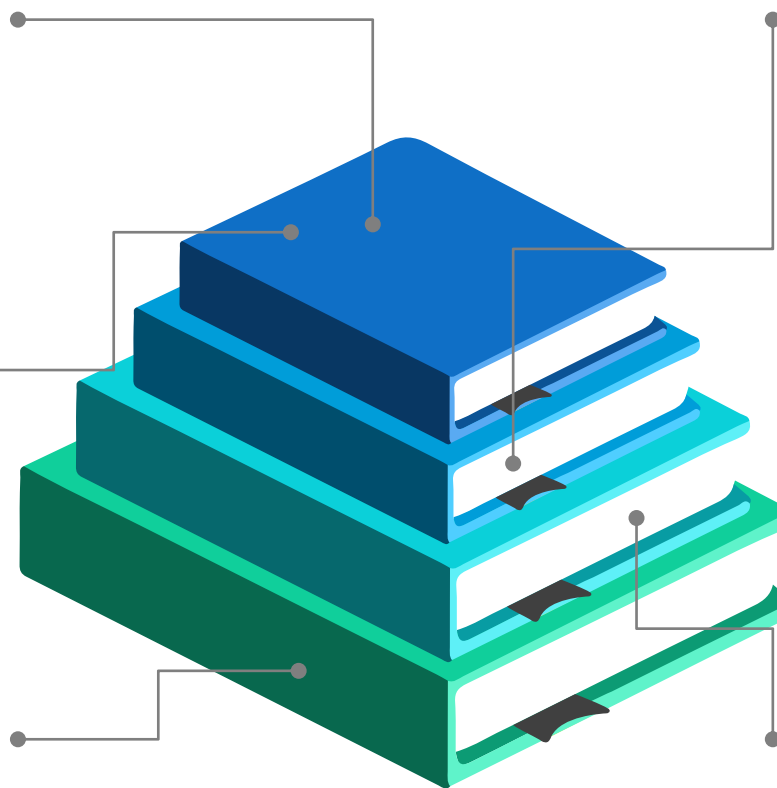
Individual's psychological, physical, and behavioural response to stressors (Cooper et al., 2001).

## COPING

“Individual's cognitive and behavioral efforts exerted to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person.” (Pirkkalainen et al., 2019).

## OUTCOMES

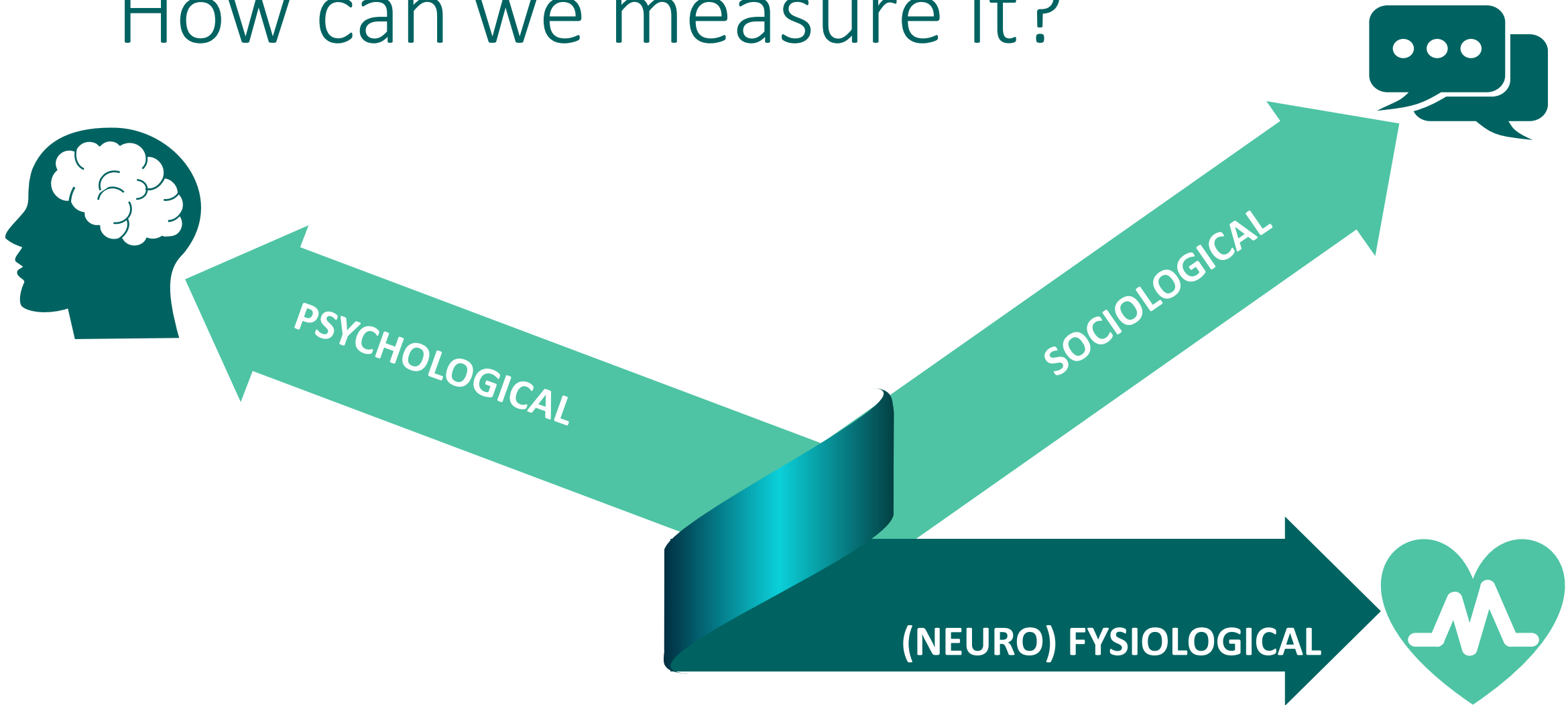
The consequences of strain at the individual and the organisational level (Cooper et al., 2001).



## INHIBITORS

Organisational mechanisms that have the potential to reduce the effects of technostress” (Ragu-Nathan et al., 2008).

# How can we measure it?

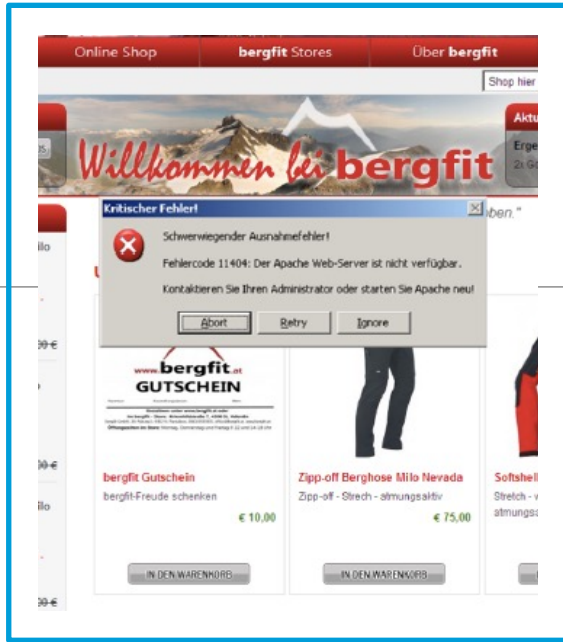


# NEUROPHYSIOLOGICAL

- EKG
- SALIVARY CORTISOL
- HEART RATE VARIABILITY
- ...
  
- Examples:
  - Riedl et al. (2012): System breakdown increases the stress hormone in computer users
  - Tams et al. (2014): NeuroIS – complementary methods to measuring technostress



# PHYSIOLOGICAL TECHNOSTRESS



20 subjects were asked to search for specific products on a website, and were told that the objective of the experiment is to study the usability of the online shop.

*"It is important to recognize that the seemingly tiny frustration that people experience everyday have a cumulative negative impact. Blood pressure rises, sleep is disrupted, and people slug down tablets" (Weil and Rosen, 1997, pp 5-6)*

Technostress from a neurobiological perspective: System breakdown increases the stress hormone cortisol in computer users – Riedl et al, 2012

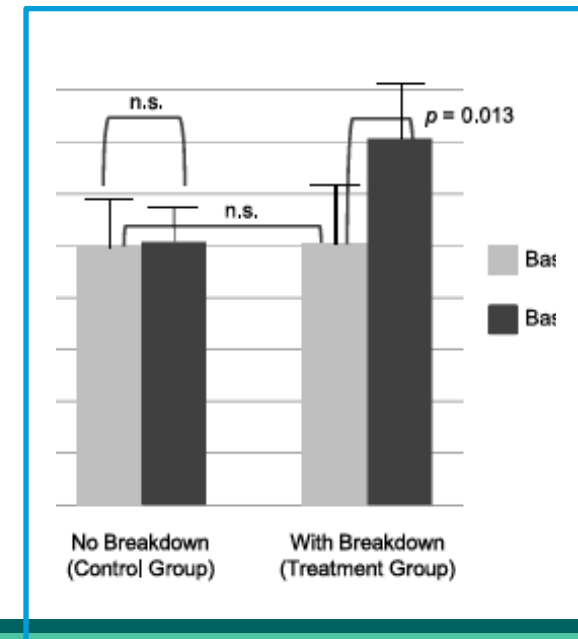
RQ: Does a system breakdown increases users' stress hormone?



Prof. René Riedl

University of Applied Sciences Upper Austria

Saliva samples were taken, and cortisol levels measured.  
System breakdown significantly increased salivary cortisol.



# Forms of psychological technostress

*Tarafdar et al. (2007)*



Prof. Monideepa Tarafdar  
Lancaster University

## **Techno-overload**

IT pushes employees to work faster.

## **Techno-invasion**

IT pervasiveness leads to blurred work-life boundaries.

## **Techno-complexity**

The complexity of IT makes the employees feel incompetent.

## **Techno-insecurity**

The job security of employees is threatened by IT.

## **Techno-uncertainty**

The constant changes, upgrades, and bug fixes in IT hardware and software impose stress on the end-user.

**IS technostress research thus far has considered the environment in which technostress arises as being the technology environment.**

Technology environment = the characteristics of ICTs and ICT-related events that can create a demand in the individual, appraised by the individual as stressful (Tarafdar et al., 2019).

**This leaves out the social environment.**

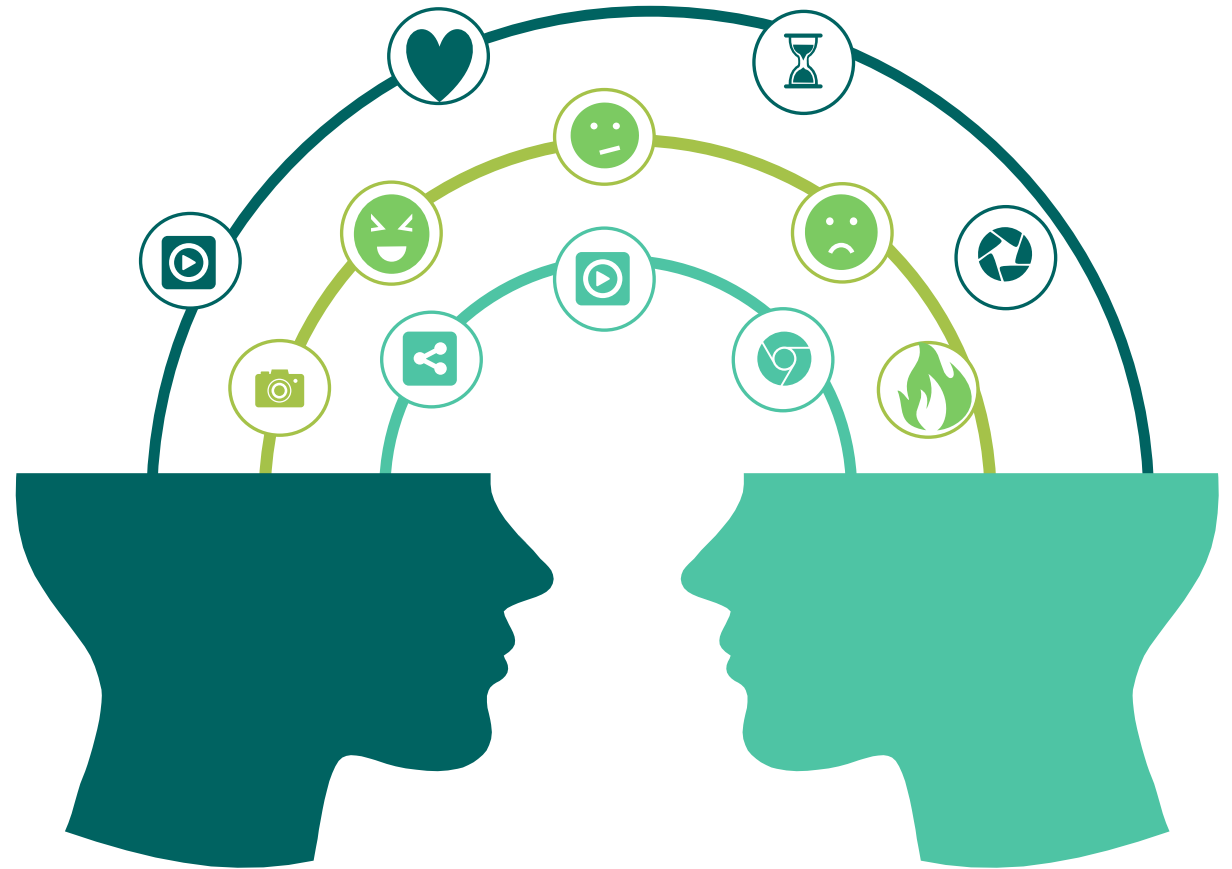
Social environment = the environment in which obligations related to ICTs that create technostress are consciously or unconsciously negotiated and adopted.

# PROBLEMATIZING TECHNOSTRESS RESEARCH



# SOCIOLOGICAL MEASUREMENTS

(TECHNO)STRESS  
is co-created.







“

*” Obligations represent an emotional blend that makes us feel that we “ought to” do, be, or give something (time, resources, certain emotions) to ourselves, others, or the organisation we work for.”*

*(Clark, 1990)*

”

WHAT ARE OBLIGATIONS?

# SOCIOLOGICAL TECHNO-STRESSORS

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## **Availability during and off work**

From the known work-life balance, to the most recent work-work balance effort.



## **Unproductive work**

Troubleshooting ICTs, Email related tasks (scanning, prioritizing, understanding emails, carefully writing emails).



## **Professionalism**

The culture of engagement, being responsive, caring for others, being a team player.



## **The illusion of the seamless ICT**

ICT errors, Usability, administration of passwords and notifications – which can lead to shame and guilt.

Societal level

Organizational level

Sociological environment  
(obligations)

Technological environment

# THE IMPORTANCE OF THE SOCIAL ENVIRONMENT IN TECHNOSTRESS RESEARCH THEORETICAL CONTRIBUTIONS

**ICT related**

- ICT Errors (P...
- Interruptic
- Role ambigu
- Continous pa
- Electronic
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et al., 2013)

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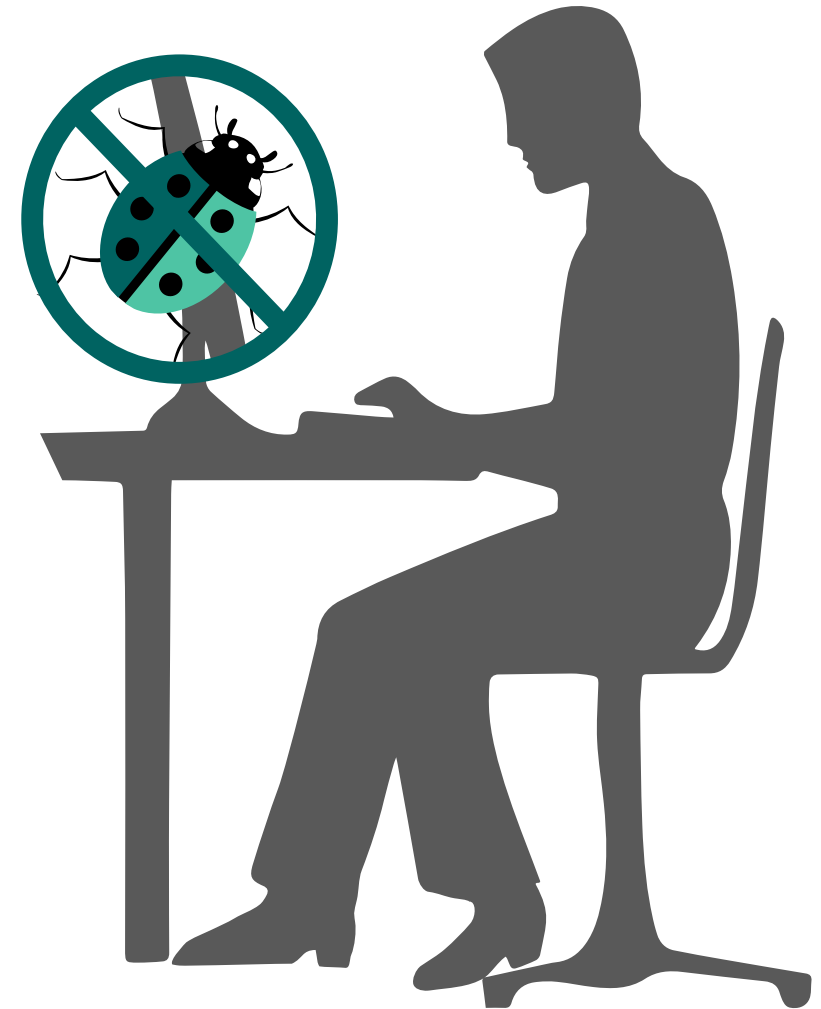
# TECHNOSTRESS AS AN INDIVIDUAL RESPONSIBILITY

## THEORETICAL CONTRIBUTIONS

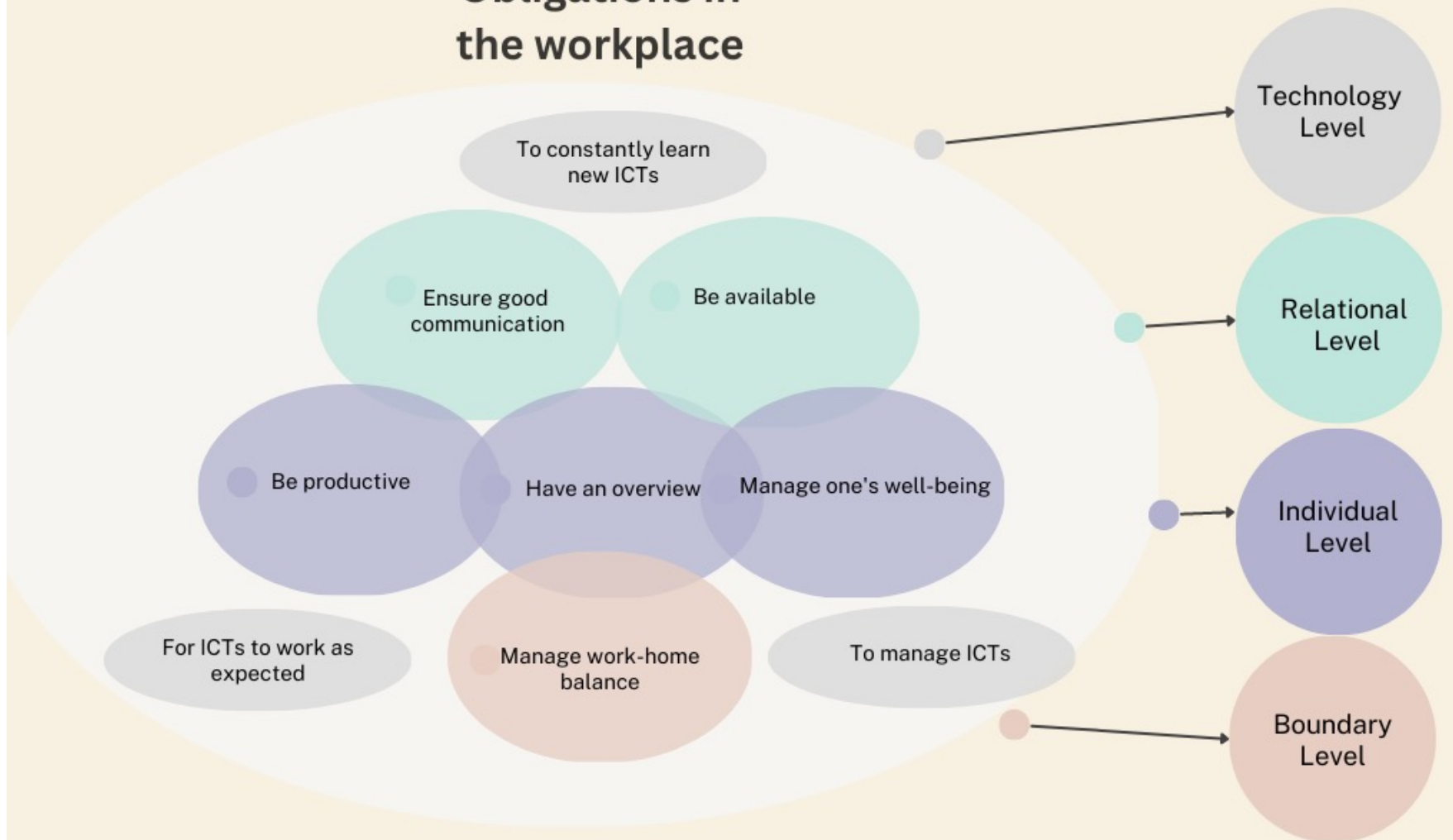
**The individuals deals with technostress by themselves, devising strategies that lead to more technostress for the collective.**

**This insight can motivate organisations to look closely at technostress from a collective perspective.**

**Research could look into how technostress can be addressed and handled at a collective level.**



## Obligations in the workplace



# Which work obligations do you experience at work?

Scan the QR code and go to Padlet to record your answers.





# THANK YOU

STAY IN TOUCH



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