DIGITIZATION & TECHNOSTRESS:
A CONFIGURATIONAL APPROACH TO EXPLAIN JOB BURNOUT AND JOB PERFORMANCE

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DIGITIZATION & TECHNOSTRESS: A CONFIGURATIONAL APPROACH TO EXPLAIN JOB BURNOUT AND JOB PERFORMANCE

With Katharina Pflügner, Christian Maier, Jens Mattke, and Tim Weitzel
University of Bamberg

Technostress pervades modern organizations

Technostress is killing productivity. Culture is the cure.

Pay attention to the technology malady of our time. It's making your employees miserable — and unproductive.

By Mike Elgan

Contributing Columnist, Computerworld | FEB 10, 2018 2:00 AM PST
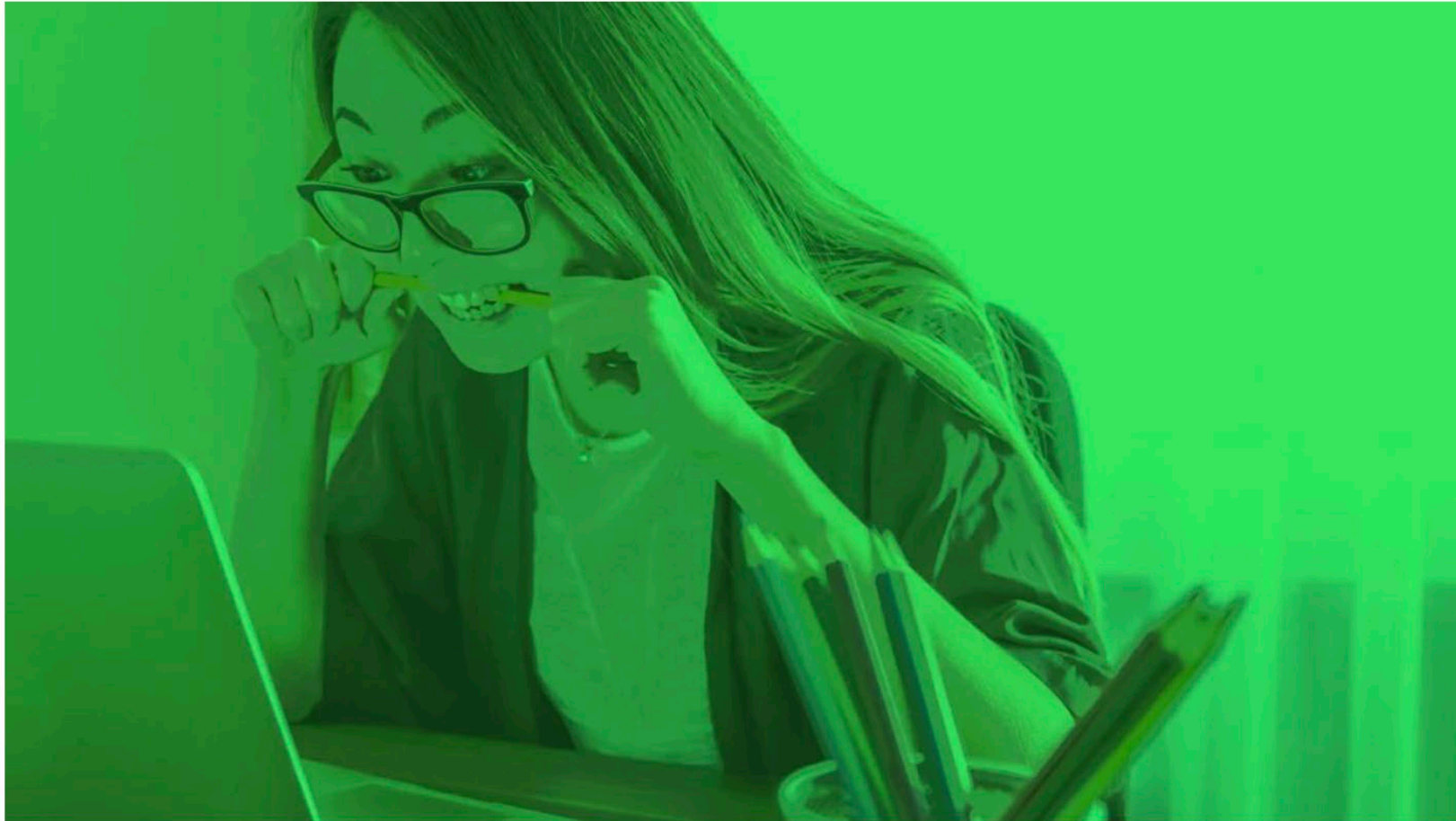
Technostress attributed to digitization

That new productivity tool is stressing out your team

New technology isn't always going to be the answer to your productivity issues at work.

[Photo: JESHOOTS.COM/Unsplash]

Technostress thought to be manageable

How Your Company Can Combat The Effects of Technostress

Andres Richter Forbes Councils Member
Forbes Technology Council COUNCIL POST | Membership (Fee-Based)
Innovation

POST WRITTEN BY
Andres Richter

CEO of **Priority Software**, a leading ERP solutions vendor headquartered in Israel with offices in US, UK and sales in 40 countries worldwide.

The very first Labor Day in the United States was a strike protesting long workweeks and horrific working conditions for blue-collar workers. In 1882, the average American laborer worked 12-hours a day, seven days a week, and children as young as five or six worked in mills, factories and mines nationwide.

COVID19 changed everything

Suddenly technology became a lifeline

People became more "techno- stressed out"

People became more "techno- stressed out" because of the technology & digitization of process
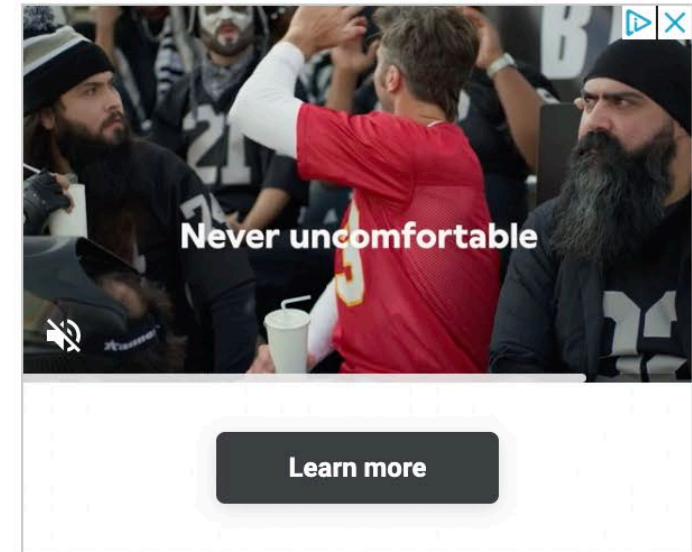
Anxious that you may have left your microphone on? Afraid your Zoom blunder will go viral? You are suffering from Technostress

Having to deal with new technologies in the context of our homes has brought a whole new level of stress into our lives. But what can we do about it?

People have to juggle many responsibilities when working from home

People became more "techno- stressed out" because of the context

Technostress on the rise with WFH responsibilities

RECOMMENDED

CAREER & WORKPLACE

Here are the Boston Business Journal's 2021 Power 50: The Movement Makers

With an increase in screen time, individuals might be feeling more depressed, unhappy, lonely, be less satisfied with life, or hyper-vigilant to avoid the fear of missing out.

TECHNOLOGY

People became more
"techno- stressed out"
because of how others treat us

How technology threatens mental health – especially if you're inauthentic

When the personality you show the world doesn't match your true self, it can sap the energy you would otherwise need to deal with technostress

BY PAWEL KORZYNSKI, CAROLINE ROOK, ELIZABETH FLORENT TREACY, MANFRED F. R. KETS DE VRIES

5 min read

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So what about those solutions?

Reality check

Before and during the pandemic ...

Before and during the pandemic … Most technostress solutions didn't work

Consider email

Insufficient email stressed people out

Communication Measures to Reduce Techno-Invasion and Techno-Overload: A Qualitative Study Uncovering Positive and Adverse Effects

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Reducing one stressor increased another

Why?

If we have been aware of technostress since the 1980s

If we have studied technostress since the 1990s

Why can't we solve the problem?

Three explanations

Explanation One

We can't keep up with digitization

That new productivity tool is stressing out your team

New technology isn't always going to be the answer to your productivity issues at work.
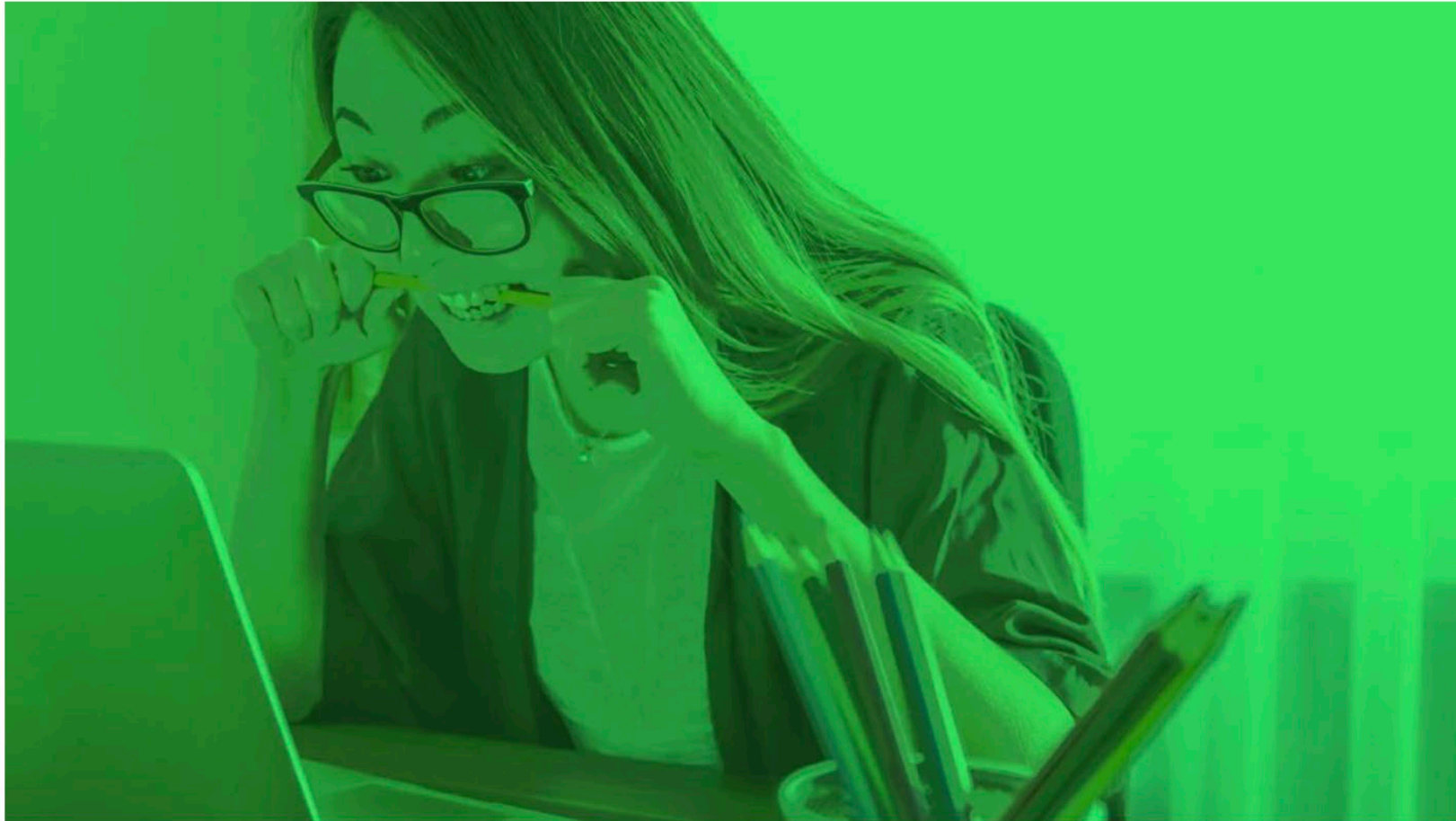
[Photo: JESHOOTS.COM/Unsplash]

It is changing so fast, we can't manage

Concentration, Competence, Confidence, and Capture: An Experimental Study of Age, Interruption-based Technostress, and Task Performance

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Stefan Tams, *HEC Montreal*

Jason B. Thatcher, *University of Alabama*

Varun Grover, *University of Arkansas*

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Explanation Two

We have not measured technostress properly

Distress = technostress

TECHNOSTRESS: TECHNOLOGICAL ANTECEDENTS AND IMPLICATIONS[1]

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Eustress = technostress

THE BRIGHT AND DARK SIDES OF TECHNOSTRESS: A MIXED-METHODS STUDY INVOLVING HEALTHCARE IT[1]

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Leading to persistent questions about how to conceptualize technostress

The technostress trifecta - techno eustress, techno distress and design: Theoretical directions and an agenda for research

Monideepa Tarafdar ✉, Cary L. Cooper, Jean-François Stich,

[Correction added on 20 March 2019, after first publication: This article was incorrectly classified as a "Research Opinion", but has been correctly reclassified as a "Research Article". The online version has been corrected.]

Explanation Three

We have it all wrong

General systems theory suggests that human responses result from sets of conditions

Stress research argues that strain results from the interplay of multiple stressors

Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign

Robert A. Karasek, Jr.

A stress-management model of job strain is developed and tested with recent national survey data from Sweden and the United States. This model predicts that mental strain results from the interaction of job demands and job decision latitude. The model appears to clarify earlier contradictory findings based on separated effects of job demands and job decision latitude. The consistent finding is that it is the combination of low decision latitude and heavy job demands which is associated with mental strain. This same combination is also associated with job dissatisfaction. In addition, the analysis of dissatisfaction reveals a complex interaction of decision latitude and job demand effects that could be easily overlooked in conventional linear, unidimensional analyses. The major implication of this study is that redesigning work processes to allow increases in decision latitude for a broad range of workers could reduce mental strain, and do so without affecting the job demands that may plausibly be associated with organizational output levels.•

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to allow increases in decision latitude for a broad range of workers could reduce mental strain, and do so without affecting the job demands that may plausibly be associated with organizational output levels. •

If so?

Why are we focused on single … stressors? Or technologies?

The dark side of smartphone usage: Psychological traits, compulsive behavior and technostress

Yu-Kang Lee, Chun-Tuan Chang ✉, You Lin, Zhao-Hong Cheng

Why are we looking at additive models of technostressors?

The Impact of Technostress on Role Stress and Productivity

Monideepa Tarafdar , Qiang Tu , Bhanu S. Ragu-Nathan & T. S. Ragu-Nathan

Why aren't we looking at configurations? Or sets of stressors?

A configuration is a combination of multiple technostressors, with each technostressor potentially being perceived as a high- or low-level technostressor.

If we are living in complex, digitized sociotechnical systems, it makes sense we should move beyond linear and additive thinking about technostress.

Empirical Illustration

Empirical Illustration
(finally)

In digitized organizations, what configurations of high- and low-level technostressors lead to high job burnout or low job performance?

General systems theory suggests the interplay of high and low conditions leads to outcomes

We derive four propositions

P1. One technostressor may increase, decrease, or completely offset the effect of other technostressors on the development of technostrain.

P2. One technostressor may make the level of other technostressors irrelevant in terms of the development of technostrain.

P3. One technostressor may be a precursor for another technostressor in fostering the development of technostrain.

P4. One technostressor may change the intensity (i.e., from high to low or vice versa) of the effect of another technostressor on the development of technostrain.

Technostressors	Interdependencies among the effects of technostressors	Technostrain

Different intensities of:

Techno-overload

Techno-uncertainty

Techno-invasion

Techno-insecurity

Techno-complexity

Complementarity
Contingency
Substitution

Combined → Lead to → High job burnout

Combined → Lead to → Low job performance
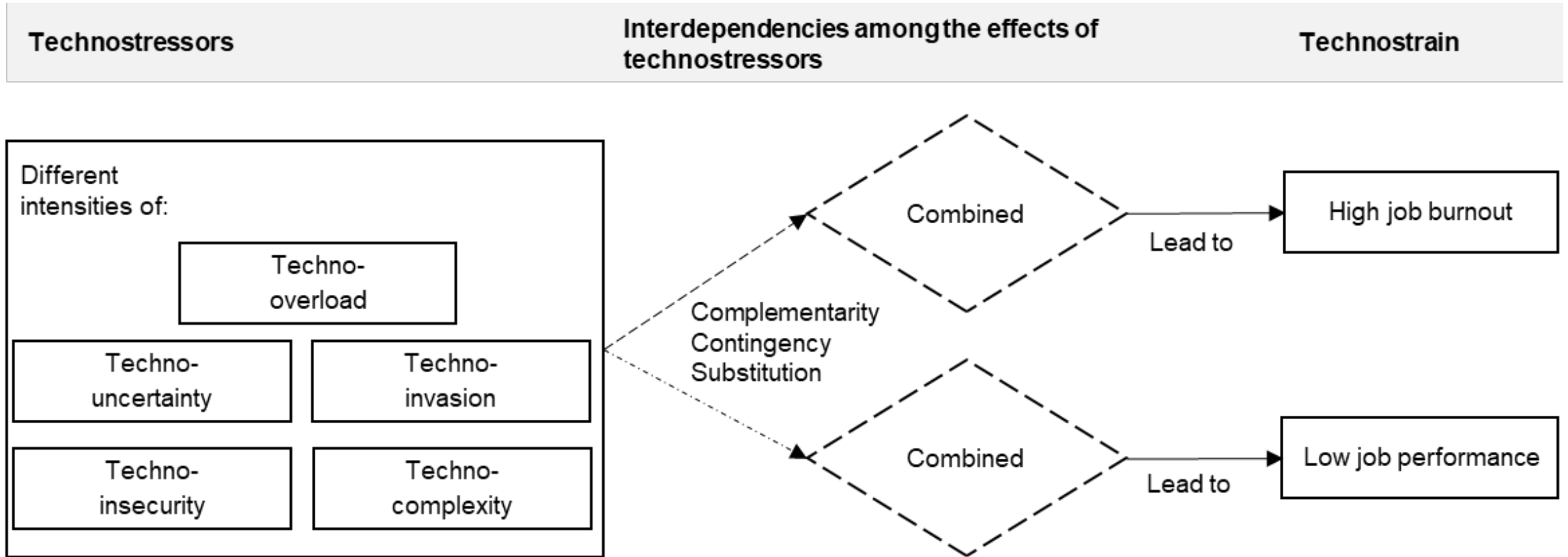
The study

200 randomly selected employees from 4,000 whose employer had digitized work processes.

Wave One: Technostressors
Wave Two: Strain
166 responded to both time periods

Descriptive Statistics, Bivariate Correlations, and Discriminant Validity

Construct	Mean	SD	Cronbach's α	CR	AVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Techno-overload	3.87	1.55	0.91	0.94	0.79	**0.89**						
(2) Techno-invasion	3.64	1.62	0.85	0.90	0.68	0.60	**0.83**					
(3) Techno-complexity	3.11	1.44	0.87	0.91	0.71	0.55	0.45	**0.84**				
(4) Techno-insecurity	3.00	1.47	0.84	0.89	0.67	0.51	0.49	0.74	**0.82**			
(5) Techno-uncertainty	4.47	1.61	0.85	0.91	0.77	0.45	0.28	0.23	0.36	**0.88**		
(6) Job burnout	3.82	1.71	0.95	0.96	0.73	0.44	0.43	0.41	0.41	0.21	**0.85**	
(7) Job performance	4.41	1.83	0.97	0.97	0.86	-0.01	0.10	0.30	0.18	-0.31	0.01	**0.93**

Note: the square root of AVE is listed on the diagonal of bivariate correlations; SD = standard deviation; CR = composite reliability; AVE = average variance extracted

fsQCA 3.0 to calibrate data and do the analysis

Configurations Leading to High Job Burnout and Low Job Performance[1,2]

Configuration / Condition	High job burnout				Low job performance
	C1	C2	C3	C4	C5
Techno-overload	●	●	●	●	●
Techno-invasion	●	●	●	○	●
Techno-complexity	●	●	○	●	●
Techno-insecurity	●	●	●	●	●
Techno-uncertainty	●	○	●	●	●
Raw/unique/solution coverage	0.33	0.18	0.24	0.23	0.34
Consistency/solution consistency	0.91	0.94	0.92	0.94	0.88
Solution coverage (minimized solution)	0.44				0.34
Solution consistency (minimized solution)	0.88				0.88

Notes: ● = high condition, ○ = low condition, C = configuration

Configurations Leading to High Job Burnout and Low Job Performance[1,2]

Configuration Condition	High job burnout				Low job performance
	C1	C2	C3	C4	C5
Techno-overload	●	●	●	●	●
Techno-invasion	●	●	●	○	●
Techno-complexity	●	●	○	●	●
Techno-insecurity	●	●	●	●	●
Techno-uncertainty	●	○	●	●	●
Raw/unique/solution coverage	0.33	0.18	0.24	0.23	0.34
Consistency/solution consistency	0.91	0.94	0.92	0.94	0.88
Solution coverage (minimized solution)	0.44				0.34
Solution consistency (minimized solution)	0.88				0.88

Notes: ● = high condition, ○ = low condition, C = configuration

First analysis suggests a dominant configurations leads to burnout; yet only one configuration leads to low performance

Configuration	Low job burnout	High job performance				
Condition	C1_low	C2_low	C3_low	C4_low	C5_low	C6_low
Techno-overload	○	○	●	○	●	●
Techno-invasion	○	○	○	●	○	●
Techno-complexity	○	○	○	○	●	○
Techno-insecurity	○	○	○	○	●	●
Techno-uncertainty	○	●	●	●	●	●
Raw/unique/solution coverage	0.40	0.36	0.26	0.22	0.18	0.18
Consistency/solution consistency	0.85	0.86	0.88	0.90	0.92	0.91
Solution coverage (minimized solution)	0.40	0.68				
Solution consistency (minimized solution)	0.85	0.86				

Notes: ● = high intensity, ○ = low intensity, C = configuration

Second analysis suggests one configurations leads to low burnout; yet five configuration leads to high performance

Confirms our intuition that our conceptualization of stressors as independent may be problematic

But is there more to it than simple configurations?

Two step QCA to probe interplay among stressors and strain

Configurations of the Two-Step fsQCA

Condition	Configuration	Low job performance (two-step QCA)	
		C1_med	C2_med
Outcome-enabling conditions			
Techno-overload		●	●
Techno-invasion		●	●
Techno-complexity		●	●
Techno-insecurity		●	●
Techno-uncertainty		●	●
Mediating condition			
Job burnout		●	○
Raw/unique/solution coverage		0.81	0.28
Consistency/solution consistency		0.96	1.00
Solution coverage (minimized solution)		0.92	
Solution consistency (minimized solution)		0.96	

Notes: ● = high condition, ○ = low condition, C = configuration

High and low job burnout mediate the configurations of technostressors that lead to low job performance

What does this mean?

Our configurational analysis helps to explain the what, how, and why of how technostressors relate to technostrain

What:

Interdependencies among technostressors form configurations that lead to technostrain & that these can include high- and low-level technostressors

How:

Demonstrate that varying levels of intensity of technostressors have meaningful implications for technostrain.

Why:

Show why certain configurations of technostressors lead to low job performance via the interplay among high job burnout and low job performance

If we are to move technostress research from red water to blue water ...

We must ...

We must investigate asymmetry in the technostressors that lead to technostrain.

We must investigate interdependencies among technostressors that lead to technostrain.

We must leverage our insight on equifinality of pathways from technostressors to technostrain to inform the study of interventions in organizations.

We must probe the boundary conditions on when configurations are more and less relevant in different digitized contexts.

Perhaps, most important

We need to upend the apple cart & change how we think about digitization & technostress

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We need to upend the apple cart & heed the words of Sarker ...

THE SOCIOTECHNICAL AXIS OF COHESION FOR THE IS DISCIPLINE: ITS HISTORICAL LEGACY AND ITS CONTINUED RELEVANCE

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To address technostress, we must think about configurations of stressors and technology within digitized sociotechnical systems

Thank you!

Questions?