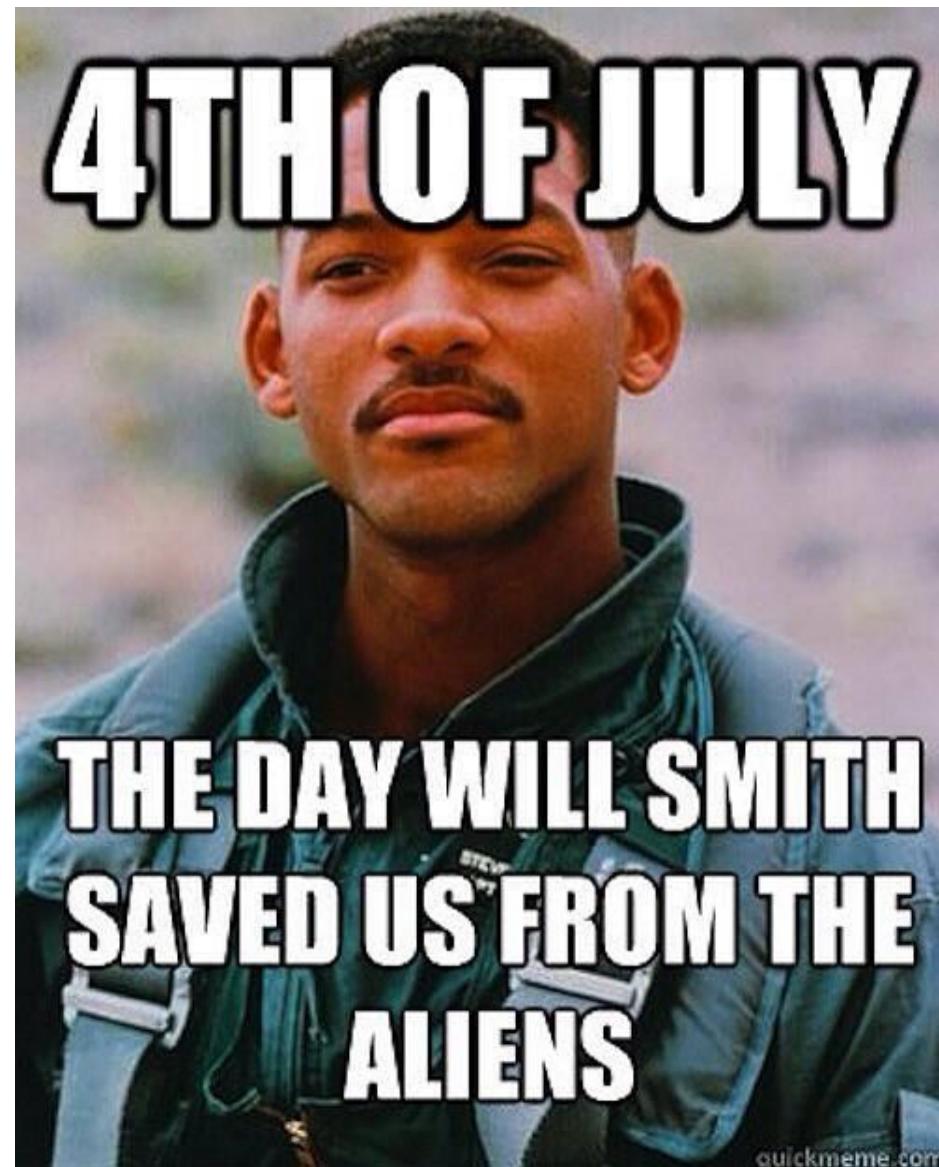


What On-Call Does to Us

Rich Burroughs
@richburroughs on Twitter

It was 1996



HERE'S YOUR PAGER



I was stoked



Fast forward to 2016

**My mental health had
deteriorated**

I'm not saying all of this
was from being on-call

We all have on-call stories

**Meanwhile... Scientists
have studied on-call**

So let's look at some studies

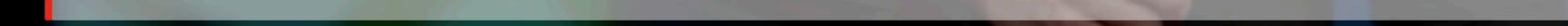
- Psychological studies are a great way to identify things that are counterintuitive, or areas we are blind to due to our biases
- Individual studies are just one data point
- I'm not a mental health professional

Sleep studies

Matt Walker | TED2019

Sleep is your superpower

MATTWALKER



19:05



Share



Add to list



Like



Recommend

Some other things he mentions that can be caused by sleep deprivation

- Heart attacks
- Car crashes
- Immune system deficiency
- Increased risk of cancer

https://www.ted.com/talks/matt_walker_sleep_is_your_superpower/footnotes

On-call studies

Things to consider when looking at on-call studies

- Many of the studies look at people in other professions
- Some are focused on people who have to be on site
- Some look at "extended work availability"

First Study: "The Relationship of On-Call Work with Fatigue, Work-Home Interference, and Perceived Performance Difficulties (2015)"

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4628979/>

Methodology

- Survey of Dutch employees
- Started with 5,347 respondents, final sample was 157
- Subjects ranged from ages 23-69 years and were 71% males
- This focused on off-site on-call

Findings

"Our results suggest that it is employees' experience of being on-call, especially the experience of stress *due to the unpredictability, rather than the amount of exposure*, that is related to fatigue, WHI, and perceived on-call performance difficulties."

W_HI = work-home interference

Findings

"This means that ***even a low amount*** of (active) on-call hours a month and ***even a low frequency*** of being called to work can be related to an increase in fatigue and work-home interference, when employees experience being on-call negatively."

Detachment

"Psychological detachment refers to *mentally disengaging* from work and not thinking about work-related issues. A lack of detachment relates to negative recovery-related outcomes such as *fatigue, work-home interference, and emotional exhaustion.*"

Second study: "Extended work availability and its relation with start-of-day mood and cortisol (2016)"

<https://content.apa.org/record/2015-35552-001>

Methodology

- 132 people from 13 organizations completed surveys
- Surveys done on 4 days on and 4 days off
- Subset of 51 people provided morning cortisol levels

Findings

"...significant effects of extended work availability on the daily start-of-day mood and cortisol awakening response."

What is the cortisol awakening response (CAR)?

CAR

"..an increase between 38% and 75% in cortisol levels peaking 30–45 minutes after awakening in the morning in some people."

— Wikipedia

CAR

The function of CAR is unknown but one hypothesis is "that the cortisol rise after awakening may accompany an activation of prospective memory representations at awakening *enabling individual's orientation about the self in time and space as well as anticipation of demands of the upcoming day.*"

— Wikipedia

Table 2
Model Fits, Coefficients, Effect Sizes for The Main Effects of Extended Work Availability

Outcome	Coeff. (SE)	t	SD	R ² (ΔR^2)	Fit indices
Valence	-.21 (.06)	-3.63**	.38	.10 (.05)	
Energetic arousal	-.33 (.08)	-4.10**	.57	.09 (.05)	χ^2 [37, $N = 859/132$] = 125.79, ** CFI = .97, TLI = .94, RMSEA = .053, SRMR _{within} = .016, SRMR _{between} = .065
Calmness	-.20 (.05)	-3.96**	.37	.13 (.07)	
CAR	1.05 (.49)	2.14*	.73	.10 (.01)	χ^2 [7, $N = 337/51$] = 8.25 n.s., CFI = .10, TLI = .99, RMSEA = .023, SRMR _{within} = .005, SRMR _{between} = .142
Detachment	-.67 (.09)	-7.80**	.69	.25 (.23)	χ^2 [72, $N = 859/131$] = 198.57, ** CFI = .97, TLI = .96, RMSEA = .045, SRMR _{within} = .030, SRMR _{between} = .057
Control	-.47 (.08)	-5.80**	.64	.14 (.13)	

Note. Fit indices refer to the model without random slopes. SD refers to the variation of effects between persons. R² refers to the explanation of within-person variance. ΔR^2 refers to the increase over the model that included only control variables.

* $p < .05$. ** $p < .01$.

Scientific American article

“Participants marked lower moods the morning after being on-call.... The possibility alone impeded recovery from work, as *the effects persisted even when no calls came.*”

<https://www.scientificamerican.com/article/the-strain-of-always-being-on-call/>

Scientific American article

“People who were able to detach from work even while on call were most likely to recoup their energies and avoid effects on mood and cortisol.”

Third Study: "Understanding the Differing Impacts of On-Call Work for Males and Females: Results from an Online Survey (2019)"

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6388272/>

Methodology

- Online survey of 228 subjects
- Looked at "sex differences" related to on-call (not gender)

Findings

"Results indicated that female respondents were more likely to be responsible for running their household..."

How much does on-call work interfere with...

The sort of things you would like to do in your leisure time (e.g. sport, activities, hobbies)

	Male	Female
Not at all/a bit	22.3%	13.3%
Somewhat	43.8%	29.6%
A lot/very much	33.8%	57.1%

How much does on-call work interfere with...

The domestic things you have to do in your time off work (e.g. domestic tasks, children)

	Male	Female
Not at all/a bit	36.9%	19.4%
Somewhat	36.2%	41.8%
A lot/very much	26.9%	38.8%

How much does on-call work interfere with...

The non-domestic things you have to do in your time off work (e.g. doctor, library, bank)

	Male	Female
Not at all/a bit	50.8%	27.6%
Somewhat	29.2%	39.8%
A lot/very much	20.0%	32.7%

I didn't know this

To summarize the studies

- The uncertainty of being on-call can be impactful, even if there are no incidents
- Mental detachment can help with recovery
- Being on-call interferes more with some people's lives than others

Improving on-call to
reduce the stress of
uncertainty

Improving incident response

- Using incident response tooling for better communication and collaboration
- Improving other tooling like Observability
- Learning from incidents

On-call training

- Training for incident response roles, like Incident Commander
- Fire drills and tabletop exercises
- Chaos Engineering

Changing how we alert

- Make alerts actionable
- Don't alert on 50% CPU
- Alert based on SLOs/Error budgets

O'REILLY®

Implementing Service Level Objectives

A Practical Guide to SLIs, SLOs & Error Budgets



Alex Hidalgo

Empathy

- Having each other's back
- Taking someone's shift if they're having a tough week

What can we do as individuals?

Coping mechanisms

- Ask for help if you need it
- Look for ways to get mental detachment
- Mindful meditation
- Therapy

when panic attacks

THE NEW, DRUG-FREE ANXIETY THERAPY
THAT CAN CHANGE YOUR LIFE



DAVID D. BURNS, M.D.

Author of the 4-million-copy bestseller
FEELING GOOD: THE NEW MOOD THERAPY

You have to be your own
advocate

Be kind to yourself

Thank you

Slides are here:

<http://bit.ly/what-oncall-does>