



**POLYTECHNIQUE
MONTREAL**

TECHNOLOGICAL
UNIVERSITY

INF[67]900E Lecture 8 – Productivity (Long-term)

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Deliverables

Student Presentations (starting Oct 31st)

- Six minute presentation
- PDFs due on day of your presentation
- Will be evaluated during presentation by professor

Group evaluation

- After each group presents, other groups send an email to professor
- Two things about the mini-conference that was good (slides, presentations, timing)
- Two things that could be improved
- Mark out of 10

Last Lecture

1. Productivity (short-term)

This Lecture

1. Productivity (long-term)
 - a. Rhythm
 - b. Avoiding burnout
 - c. Setting goals



Productivity and Rhythm

Definition of Productivity

Productivity = Output / Input (economics)

Input

- Spend time/effort effectively

Output

- Work on meaningful contributions

- Want to improve
 - **Quality** of time and effort spent
 - **Quantity** of time and effort (minimize wasted time and effort)

On/off is unnatural

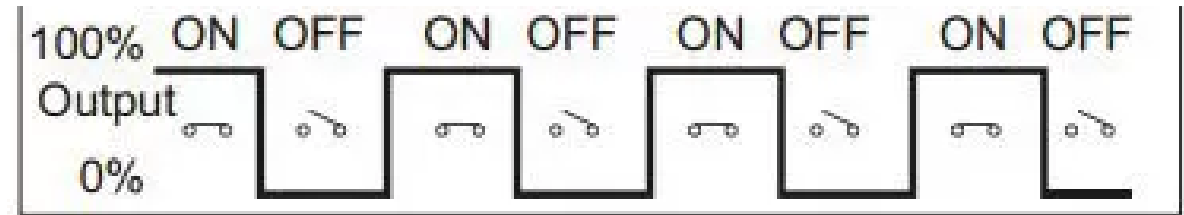
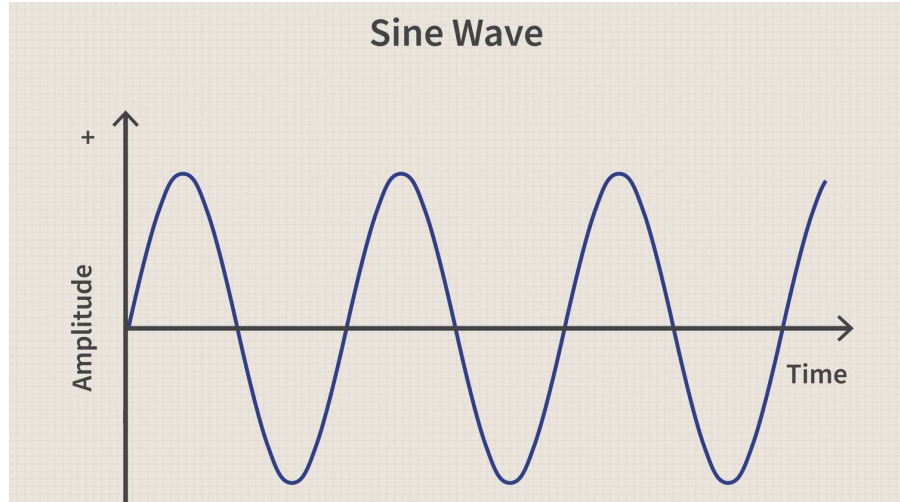


Fig 1: Basic ON / OFF control

Rhythms are Natural

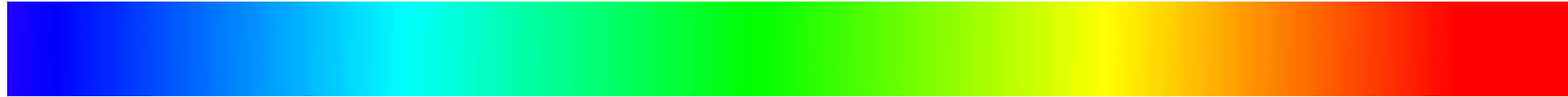


Applied to Productivity

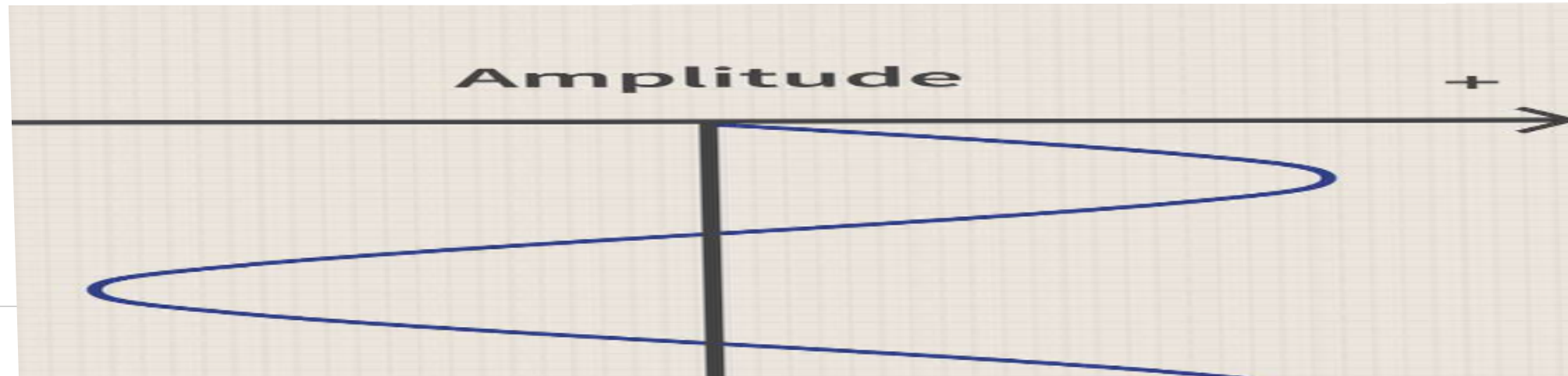
- Slow periods are normal!
 - Sick, family issues, holidays, after crunch time
- Have to balance 'stressing the body/brain' with 'relaxing the body/brain'
 - Probably not 50/50 time
- Focus on 'intentional rest'
 - Relax brain, body, nerves
 - Ex. walk in park, not doom-scrolling



How Much Stress



X
Aim for here
for max.
productiveness





Avoiding Burnout

Article on AI Burnout

“Will AI make work burnout worse?”

<https://www.bbc.com/news/articles/c93pz1dz2kxo>

“[...] tasks were in fact taking longer as they had to create a brief and prompts for ChatGPT [and] double check its output for inaccuracies”

“The entire aim of introducing AI to the company was to simplify people’s workflows, but it was actually **giving everyone more work to do**, and making them feel stressed and burnt out.”



“When we're looking at burnout, it's **not just about the volume** of the work we're doing, but how we **feel about the work and what we're getting from it**”

Types of Burnout

- Short-term, “physical”, “I’m tired”

versus

- Longer-term, “emotional”, “I’m exhausted”
 - “Occupational burnout”



Short-term Burnout

- Causes:
 - Stress on body and brain
 - Too much activity over a few days/weeks
 - “Crunch time”, deadlines, lack of sleep
- Symptoms:
 - Inability to focus, fatigue, the usual
- Resolution:
 - Take a short-term rest
 - Nature, friends, art, exercise, sleep
 - What I did: distance running and yoga

Important Dates

🌐🕒 AoE (UTC-12h)

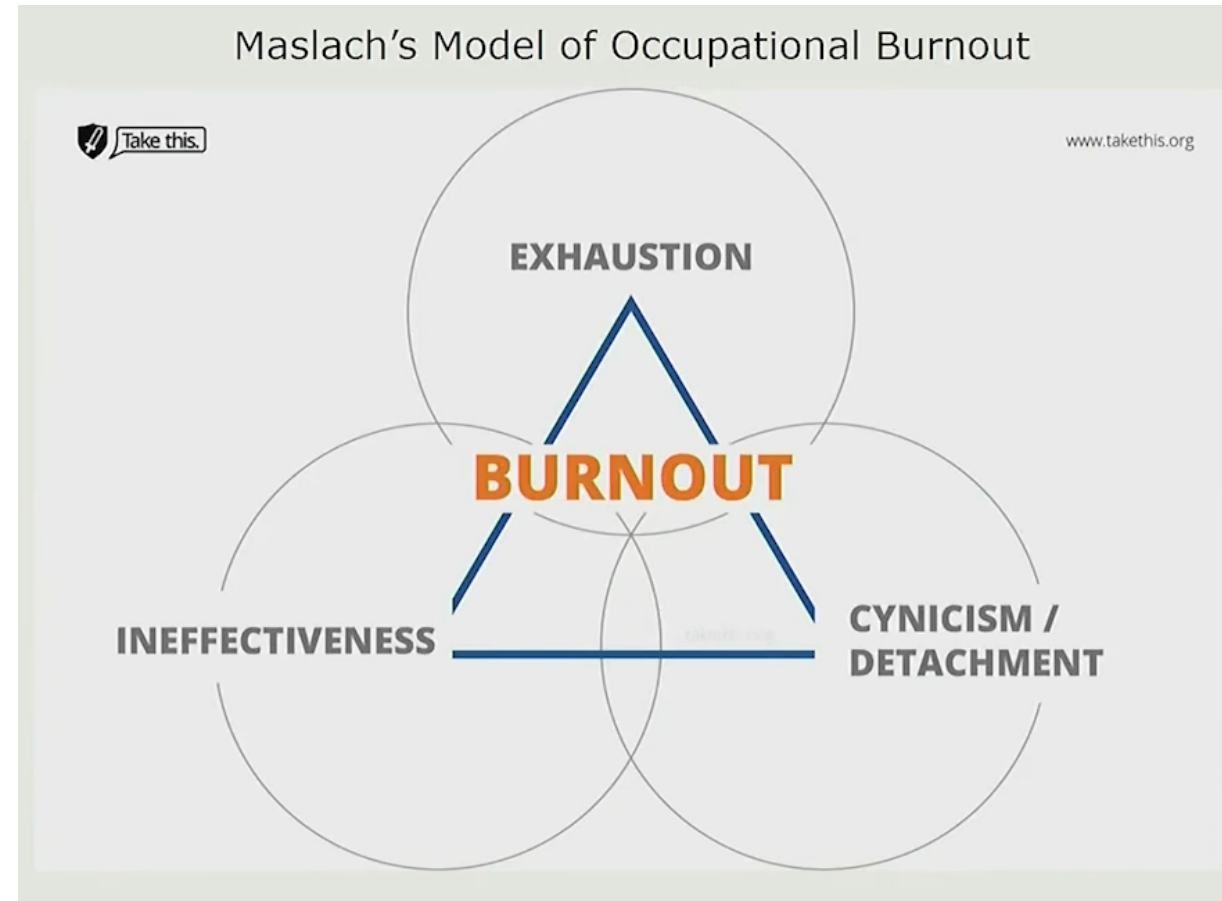
Tue 3 Dec 2024

**Paper submission (AoE UTC-12h) (firm;
no extensions)**



Long-term Burnout

- Causes:
 - Stress on body/brain **and emotions**
 - Many causes
- Symptoms:
 - Same as short-term, but doesn't go away after a short-term rest
- Resolution:
 - Take a long-term rest
 - Reduce emotional stress

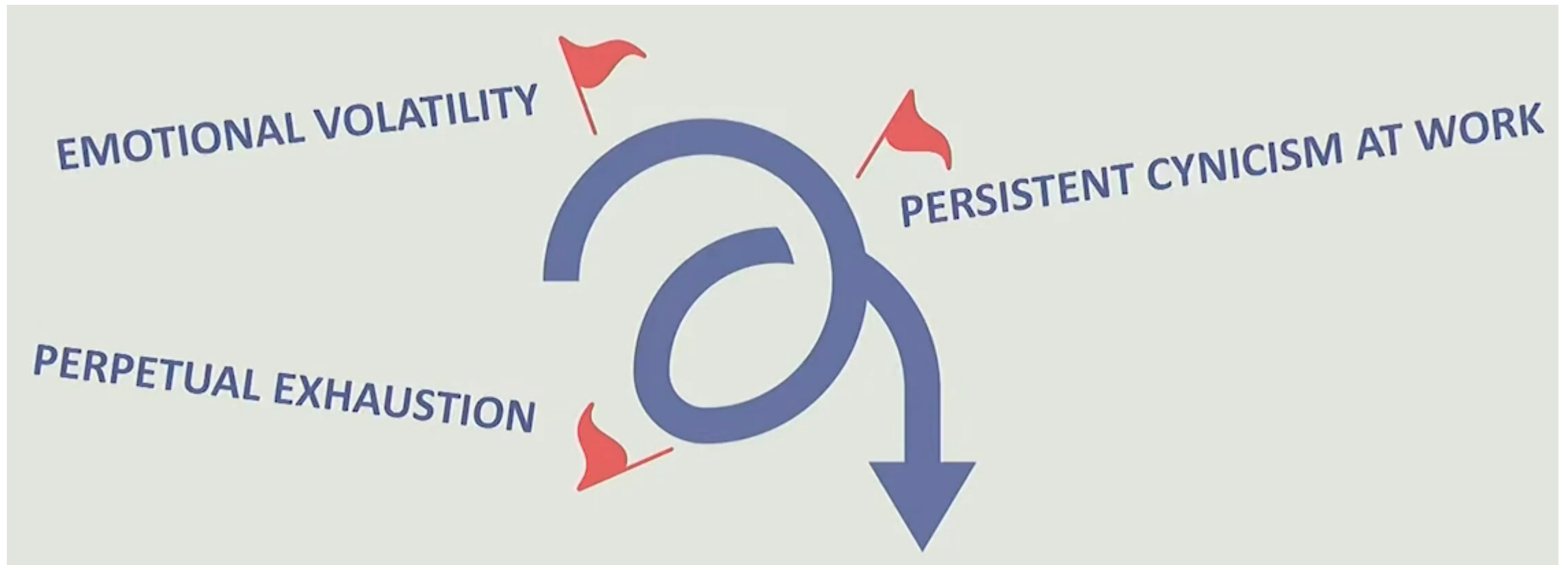


Long-term Burnout

The image shows a YouTube video player interface. The video title is "OCCUPATIONAL BURNOUT IN GAMES: CAUSES, IMPACT & SOLUTIONS" in yellow text on a blue background. The speaker is identified as Raffael Boccamazzo, PsyD, with co-speakers Alicia Fortier, Osama Dorias, and Anna Brandberg. The event is GDC 2023, March 20-24, 2023, in San Francisco, CA. The video player includes a video thumbnail of the speaker, a progress bar at 0:14 / 59:05, and standard YouTube controls like play, volume, and full screen. The GDC logo and event details are visible in the top right and bottom left corners of the video frame.

<https://www.youtube.com/watch?v=xvAS6Req0q8>

Long-term Burnout Symptoms



Imbalance of Systems

Things I learnt at
Stress Rehab

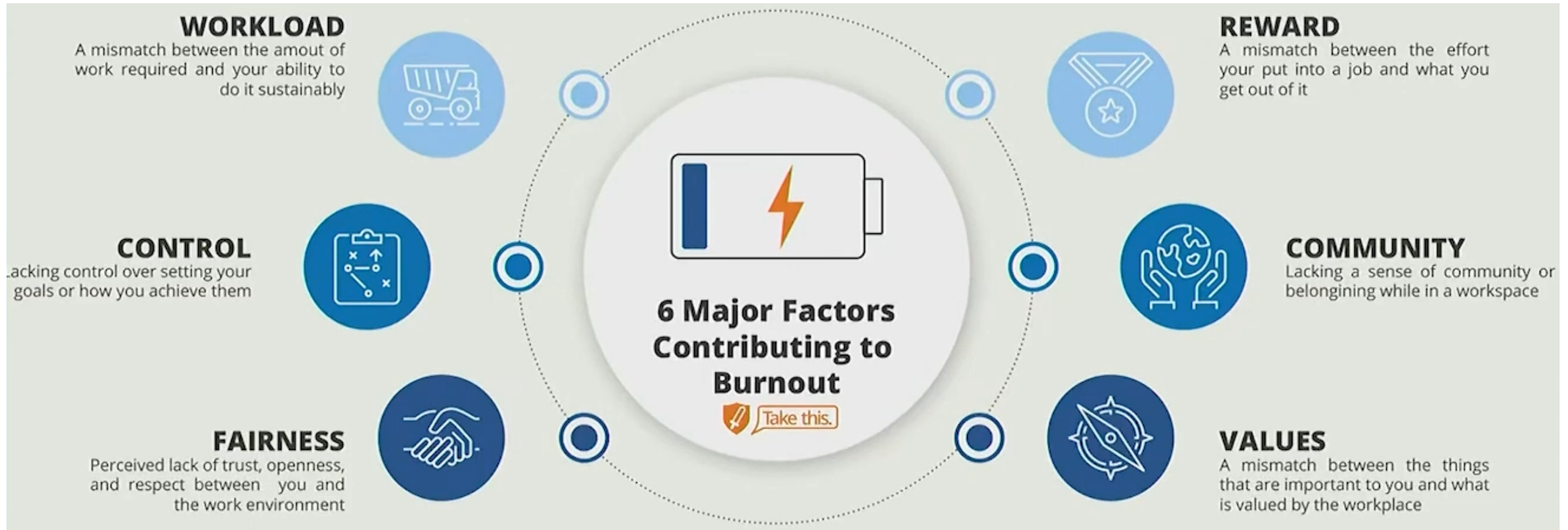
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Body has “fight-or-flight” red system

Idea: Shift activities and mindset into balancing blue and green

Long-term Burnout Causes



Addressing Causes in Academia

WORKLOAD

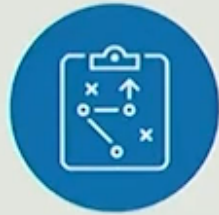
A mismatch between the amount of work required and your ability to do it sustainably



- Improve productivity
- Talk to your supervisor about tasks/timeline

CONTROL

Lacking control over setting your goals or how you achieve them



- Own your Master's / PhD and your topic
- Talk to your supervisor about goals/timeline

FAIRNESS

Perceived lack of trust, openness, and respect between you and the work environment



- Very difficult in academia
- Reviewers are often *unfair*
- Improve trust and openness with supervisor

Addressing Causes in Academia



REWARD

A mismatch between the effort you put into a job and what you get out of it



COMMUNITY

Lacking a sense of community or belonging while in a workspace



VALUES

A mismatch between the things that are important to you and what is valued by the workplace

- Focus on good work as its own reward
 - Not citations
- Academic rewards are often very delayed
- Build community with other graduate students
- Attend conferences/workshops
- Talk to your supervisor

Rewards in Academia

- What praise do we get?
 - From supervisor (hopefully) ?
 - From reviewers (X)
 - From citations Not really
 - From best paper awards 🏆 Rarely
 - At presentations Sometimes



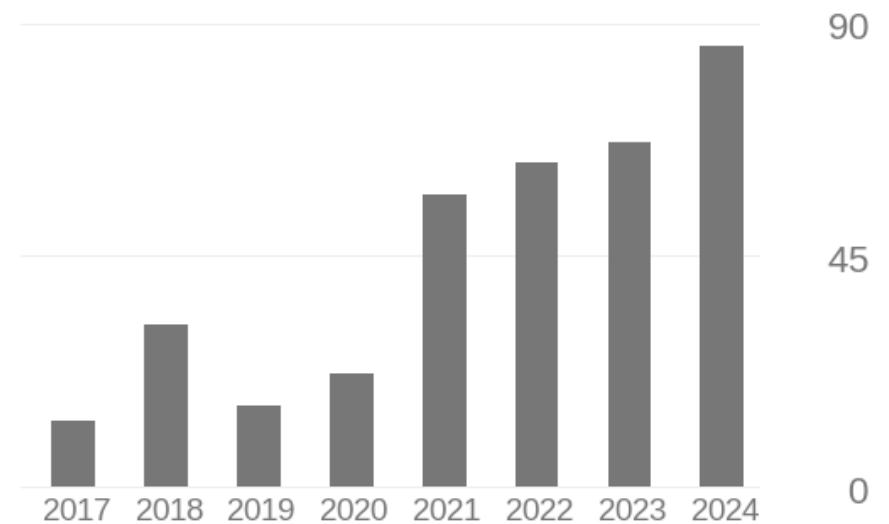
Rewards from Citations

- Citations are most consistent “reward”
 - But they are not often
- 100 citations is ‘only’ two per week
- No magic number of citations to make you happy
- Citations don’t tell you about the journey

Behind the scenes: the struggle for each paper

https://jeffhuang.com/struggle_for_each_paper/

	All	Since 2019
Citations	391	314
h-index	12	10
i10-index	17	12

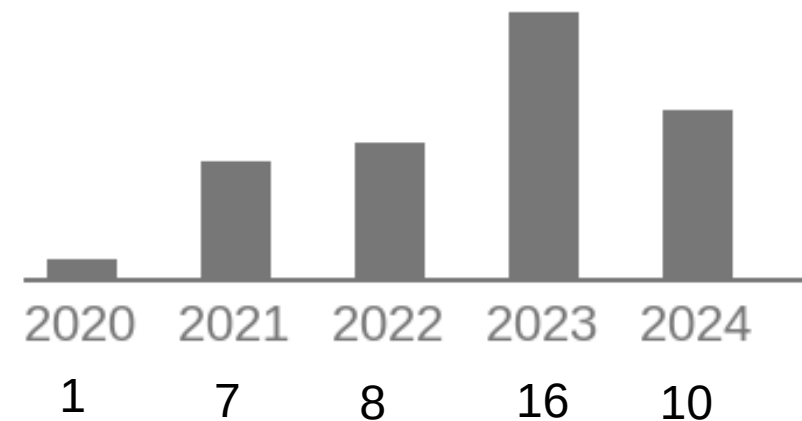


Slow Citations

- My highest-cited paper
 - Published May 2020
 - Presented July 2020
- Only citation in first nine months is self-citation
- Most citations in 2021 is Sept/Oct
- On average, my papers are cited two years after publication

Exploring Fault Parameter Space Using Reinforcement Learning-Based Fault Injection

Cited by 43



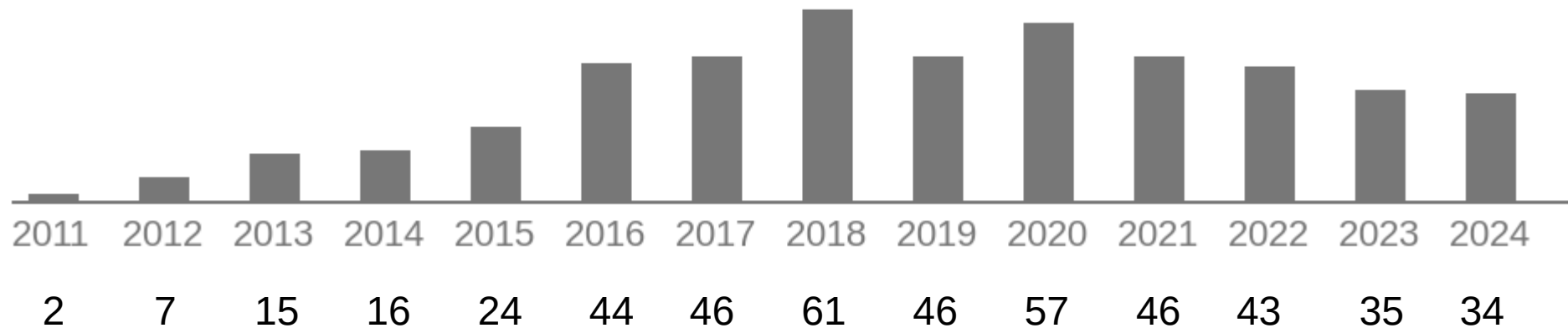
Citations

Slow Citations

An exploratory study of the impact of antipatterns on class change-and fault-proneness

Published August 2011

Cited by 496



Citations

Focus on the Process

- Life is a marathon
 - Running is about the process, not the finish line
 - Grad studies is about the contributions, not the diploma
- Focus on doing good work everyday
 - Find joy in research, writing, discussing
 - Do your best
- Avoid unhelpful past/future thinking, focus on doing best work in present

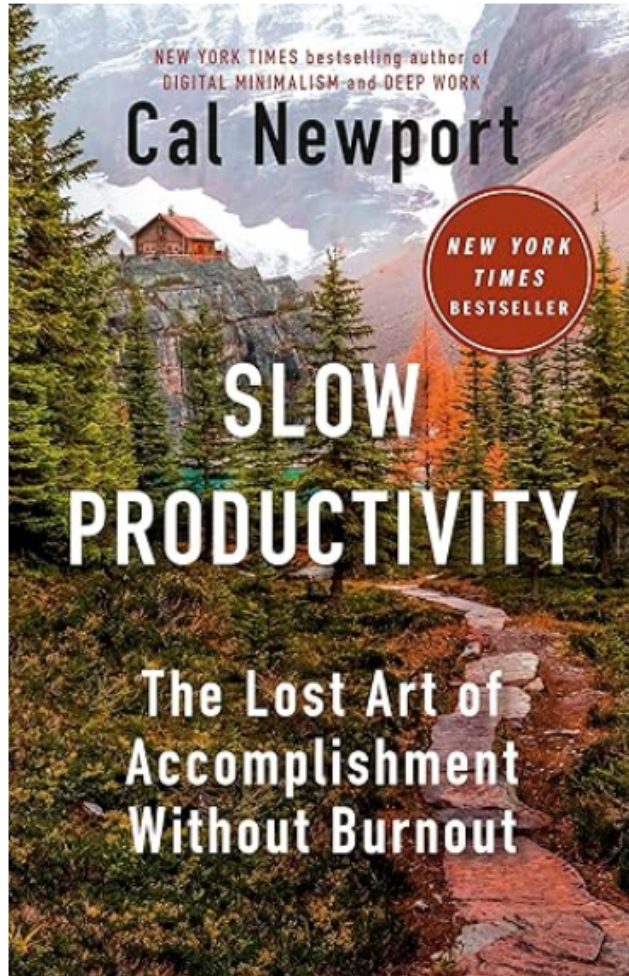


Ask for Help

- Resources are available
 - <https://etudiant.polymtl.ca/sep/en/>
- Talk to others and ask for assistance
 - Supervisor
 - Other grad students
 - Professionals
- Ask for extensions on deadlines
 - Many deadlines can be extended!



Slow Productivity



First, do fewer things.

Second, work at a natural pace.

Third, obsess over the quality of the work you do.



Here, There, and Steps Between

Here, There, and the Steps Between

Here

- Where are you now?

Requires

- Self-examination
- Honesty

There

- Where do you want to go?

Requires

- Vision
- Clear goals

Steps Between

- What steps are from here to there?

Requires

- Planning
- Discipline

Bring increased awareness to your life

Here, There, and the Steps Between Examples

Here

- Can walk 3k

- 1st year PhD
- Weak writer
- No topic defined

There

Example: Running 5k

- Can run 5k in < 1 hour

Example: Writing a Thesis

- Two journal articles
- Industry collaboration
- Exciting topic
- Written thesis

Steps Between

- Couch to 5k program

Week	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
1	Rest	Run 1 min Walk 1 min Repeat x 10	Rest	Run 2 mins Walk 4 mins Repeat x 5	Rest	Rest	Run 2 mins Walk 4 mins Repeat x 5
2	Rest	Run 3 mins Walk 3 mins Repeat x 4	Rest	Run 3 mins Walk 3 mins Repeat x 4	Rest	Rest	Run 5 mins Walk 3 mins Repeat x 3

- 2025:
 - Read suggested papers
 - ...
- 2026:
 - Start journal paper
 - ...

Figuring Out 'There'

- Where do you want to go? Or 'what do you want to do with your finite time?'

Four years in PhD =
208 weekends, 1005 work-days

Focus on meaningful outcomes

- Professionally, personally, "health, wealth, relationships"
- Examples: Become professor, write impactful article, learn French, raise healthy kids, run a marathon, practice painting every weekend...

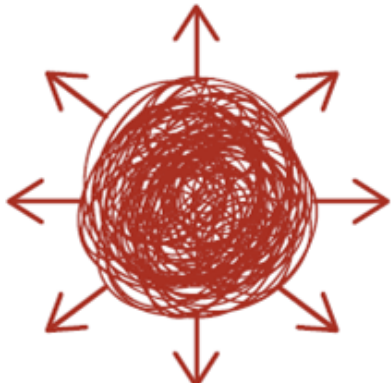
Essentialism



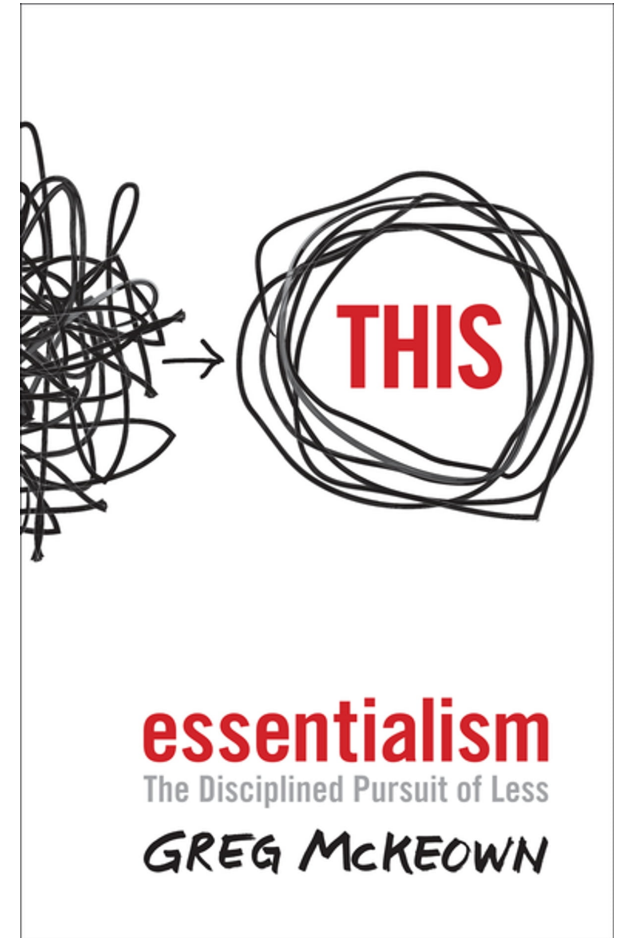
WHAT'S ESSENTIALISM?

= constantly defining where you can create the most value,
then finding ways to execute it most effortlessly.

Non-
Essentialist



Essentialist



Figuring Out 'There'

How to choose goals?

- Align with your values (ambition, giving back...)
- What is your competitive advantage?
- What is your vision of your future life?
- What are others doing, and what resonates with you or not?
- Can't do everything



Figuring Out 'There'

How to define?

- SMART goals
- Yearly, quarterly, monthly, weekly, daily



Specific

The goal is concrete and tangible - everyone knows what it looks like.



Measurable

The goal has an objective measure of success that everyone can understand.



Attainable

The goal is challenging, but should be achievable with the resources available.



Relevant

The goal meaningfully contributes to larger objectives like the overall mission.



Timely

This goal has a deadline or, better yet, a timeline of progress milestones.

Figuring Out 'Here'

- Where are you now?

What are you good at, bad at, what's the real situation?

Example target: Writing a thesis

- Do you find writing easy? Why or why not?
- How much time do you have? Can you make more time free?
- What's standing in your way? What has held you back?
- Who's available to help?
- Do you procrastinate? Why? (Be honest)
- Do you have anything written? Do you have a topic?
- Do you have a competitive advantage?

Figuring Out 'Here'

- How to figure this out
 - Detailed and honest examination
 - Self-examination is critical
 - And ask friends, supervisor, colleagues, therapist
- This is extremely difficult!
- Don't be hard on yourself
- Everyone is human and can have imposter syndrome
 - You are usually bad at something the first time
- Try to remove emotions and look at situation objectively
 - Can require a therapist

Steps Between

- Not this easy:



Break steps down into granular tasks
(discussed last time)



Concluding Thoughts

Communication

- Multiple forms in grad school
- With others
 - Reading papers
 - Writing papers
 - Discussing
 - Planning / organizing
- With yourself
 - Planning
 - Self-analysis
 - Self-talk
 - Emotional/physical regulation



Practice and Be Kindly Critical

- Read, write, discuss, analyze
- Have a critical mindset
 - "How can I improve?"
 - "What are others doing?"
- But be kind with yourself
- Try to remove negative emotions and focus on the process
- Improve your process over time and never stop learning



Lab Session

- Individual then group discussion:
 - Goals during the degree
 - Goals after the PhD

THANK YOU!



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