


Designing Behavior Change with AI

How Anticipation Can
Transform User Experiences

Website jcerejo.com


LinkedIn [In/jcerejo](https://in/jcerejo)


Joana Cerejo
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 **Career Designer** since 2010, passionate about Artificial Intelligence, Data, and especially Human Experience.

 **Industries** Fintech, eLearning, accounting, retail, and manufacturing.

 **Specialization** UX for AI, UX metrics, and UX strategy and leadership. I help companies understand the value of design.

 **Recognition** Nominated for the Women in Artificial Intelligence Award 2021.

 **Publications** I'm an author of renowned publications like UXmatters or Smashing Magazine, and others.

 **Educator** Since 2013, with a passion for mentoring and sharing knowledge.

Hello!

I'm Joana Cerejo



AGENDA

- * **Cognitive Burden of Technology**
- * **What's Behavior + Origins of Anticipatory Design**
- * **Promise & Risks of Anticipatory Design**
- * **Challenges in Real-world Examples**
- * **Core Principles of Behavior Change Design**
- * **Q&As**

A black and white photograph of sand dunes with a small yellow square in the upper left corner.

■
**What's the current
state of digital
experiences?**

07

:00





100 urgent emails from your manager!



You have 333 new messages on Slack.



Keep track of social media analytics



Have you been active enough today



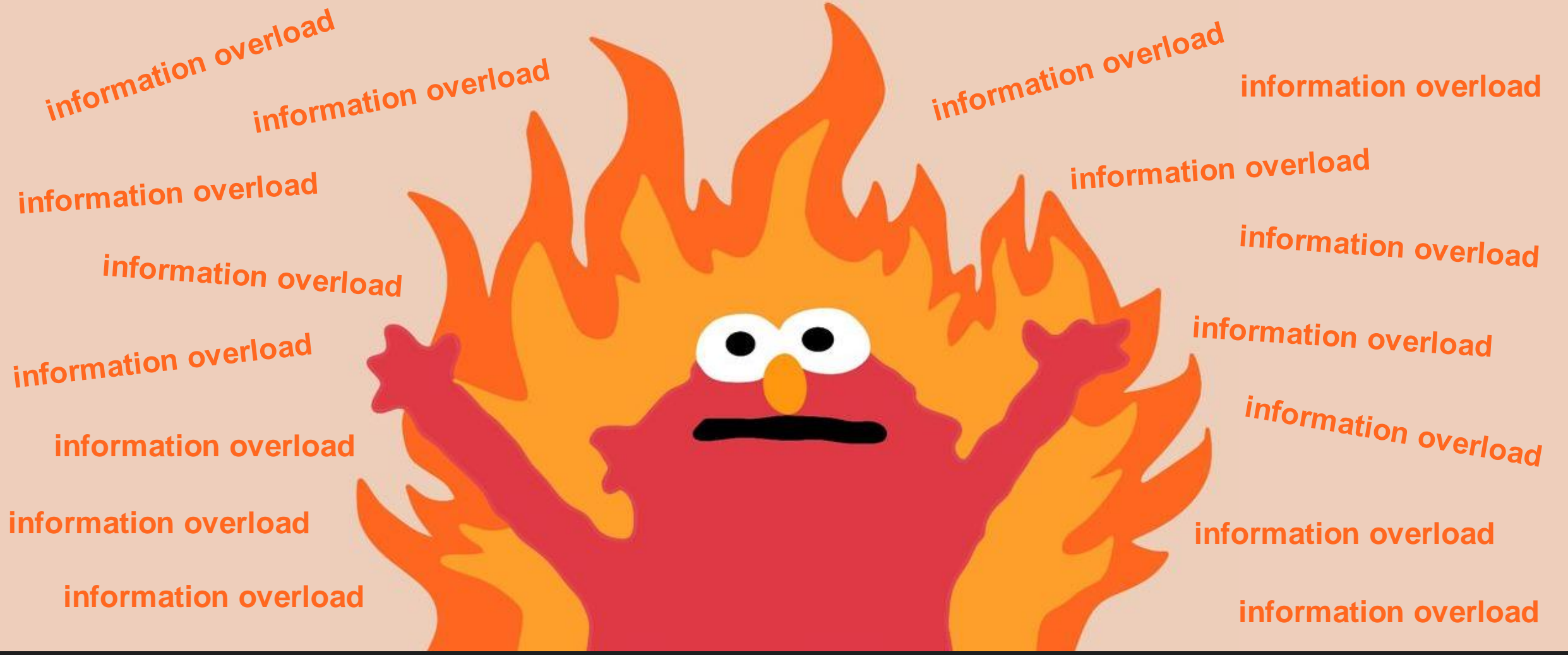
By noon...

you have made
dozens of tiny
decisions









limitless information



**How can technology
alleviate, rather than
amplify, the mental
burden it creates?**

**Behavior Change
Design**



**Anticipatory
Design**

Automating Experiences



Anticipatory design can support organizations to lift the cognitive load by doing more to streamline processes and anticipate users' needs.

- * How can we design AI-driven systems that not only understand human behavior but actively reduce cognitive strain?
- * How can we balance automation with agency, offering users relief from decision fatigue without stripping them of control?





Understanding Behavior

be • hav • ior noun

The way a person or thing acts or reacts.

- Understand users' journey.
- Help users to commit to their goals.
- Guide users toward their desired outcomes.

Behavior change is a critical goal in experiences where the product or service is designed to address a gap between a user's current state and their desired state.



Motivation



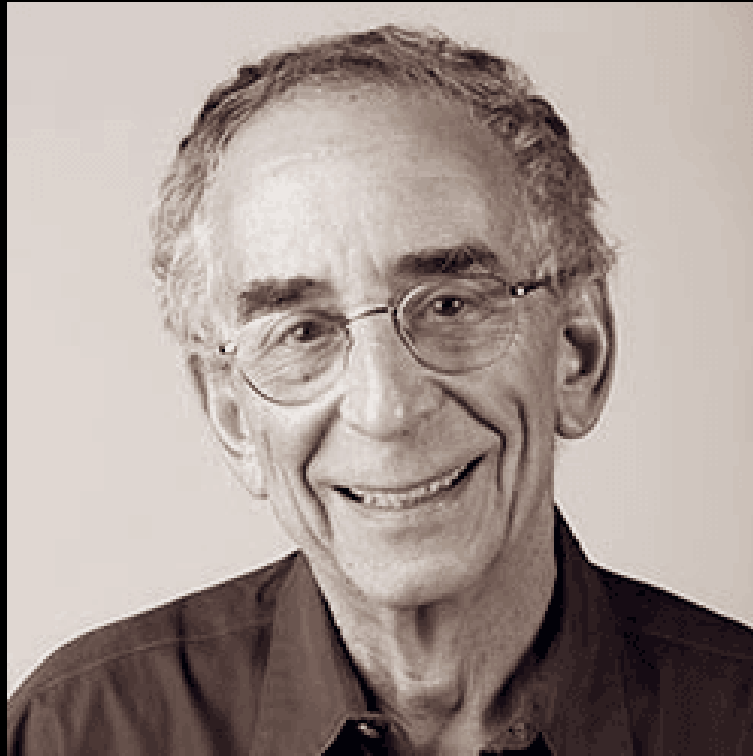
**Behavior isn't
constant, it
changes over
time...**

Time

Origins



Philosopher
Søren Kierkegaard
19th century



Psychologist
Barry Schwartz
2004



Entrepreneur
Aron Shapiro
2015

The High Expectations of Anticipatory Design

It operates on the principle that systems can predict and fulfill needs before they arise by analyzing user data — such as past behaviors, preferences, and contextual factors.



”

Anticipatory design

often fails to meet expectations when implemented in real-world contexts.

 NEW ON SMASHING MAGAZINE

Why Anticipatory Design Isn't Working For Businesses

 User Experience, Design, Business



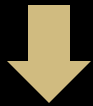
written by Joana Cerejo



LESS



Cognitive overload



Paradox of choice



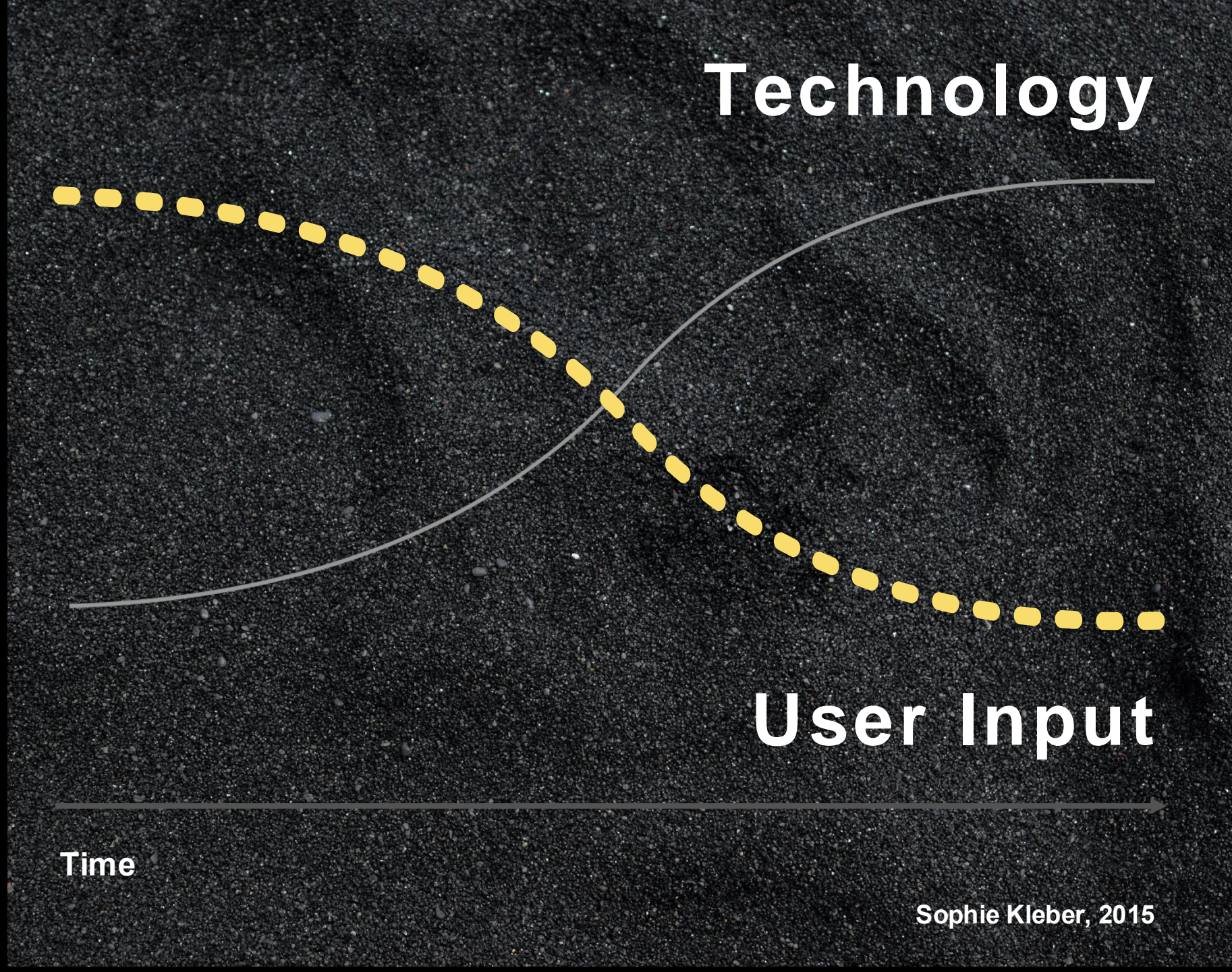
Decision fatigue



Technologic anxiety



Screen interaction



Technology

User Input

Time

HCI

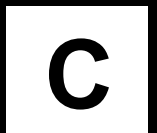
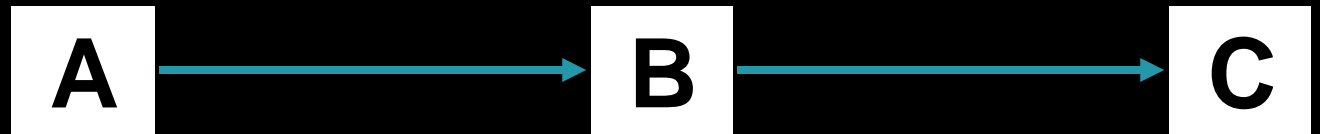
Automation



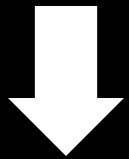
HCI

Automation

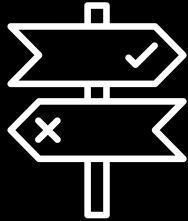
Over automation



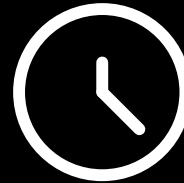
Promises of Anticipatory Design



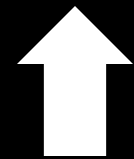
**Reduces
Cognitive Load**



**Minimize decision
fatigue**



**Efficiency & Time
Saving**



**Increase
Conversions &
Loyalty**

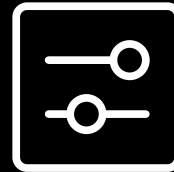
Risks of Anticipatory Design



Data Privacy



**Over-automation
(Bubble Experience)***



**User agency
(Control over
Autonomy)**



**Data Bias & Poor
Predictions**

(Pariser 2011), *The Filter Bubble: What The Internet Is Hiding From You*

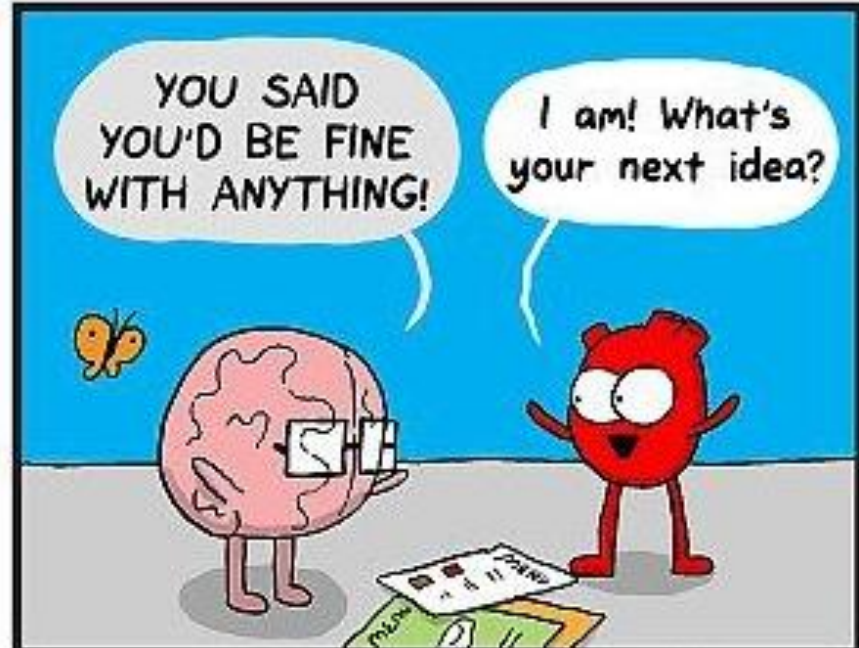
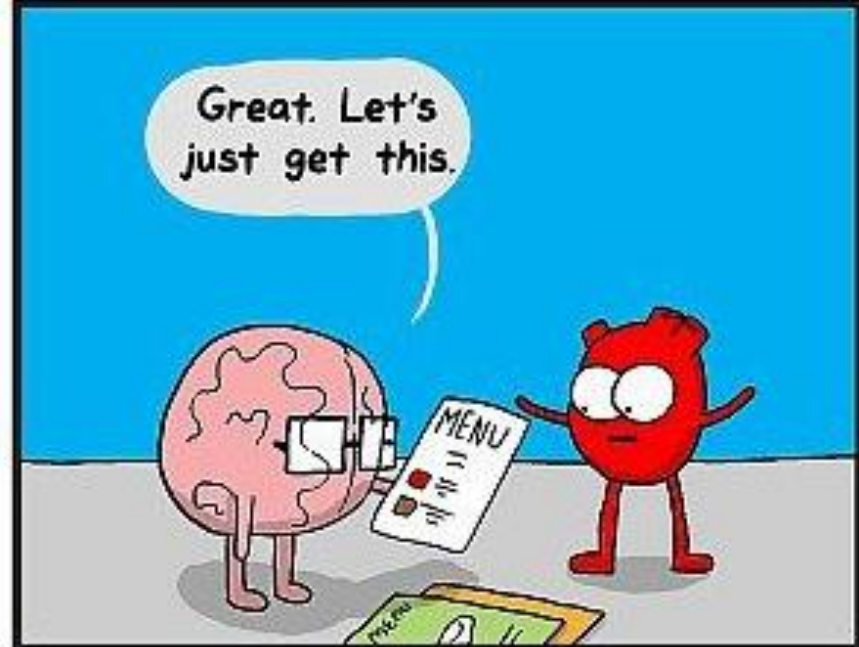
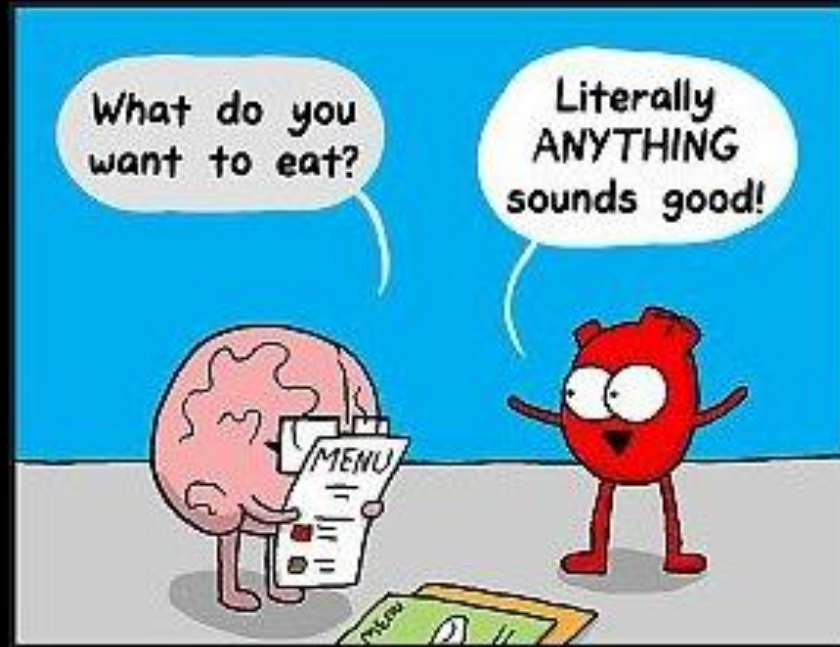
**These challenges are
not just technical—**

They are human



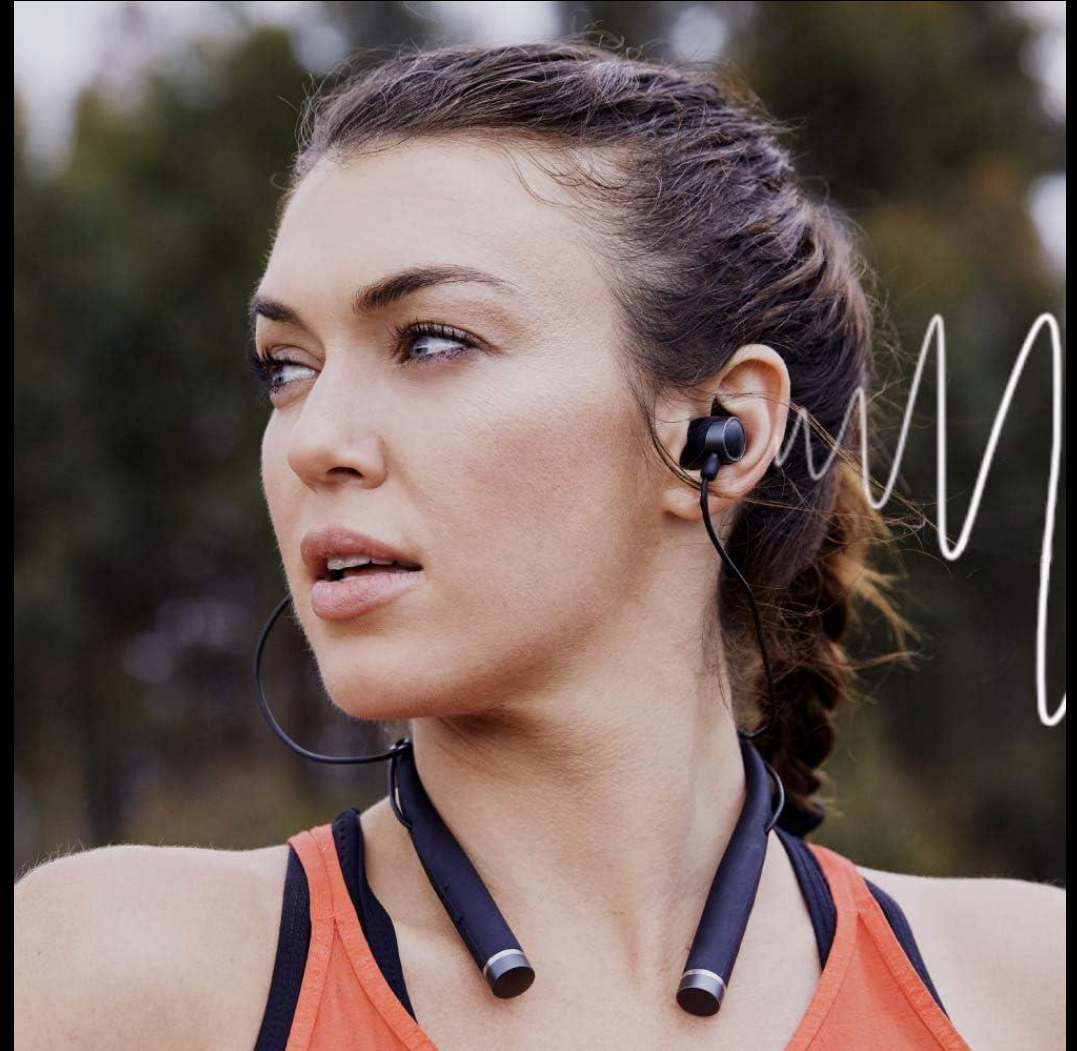
Conundrum

Balancing Autonomy & Automation

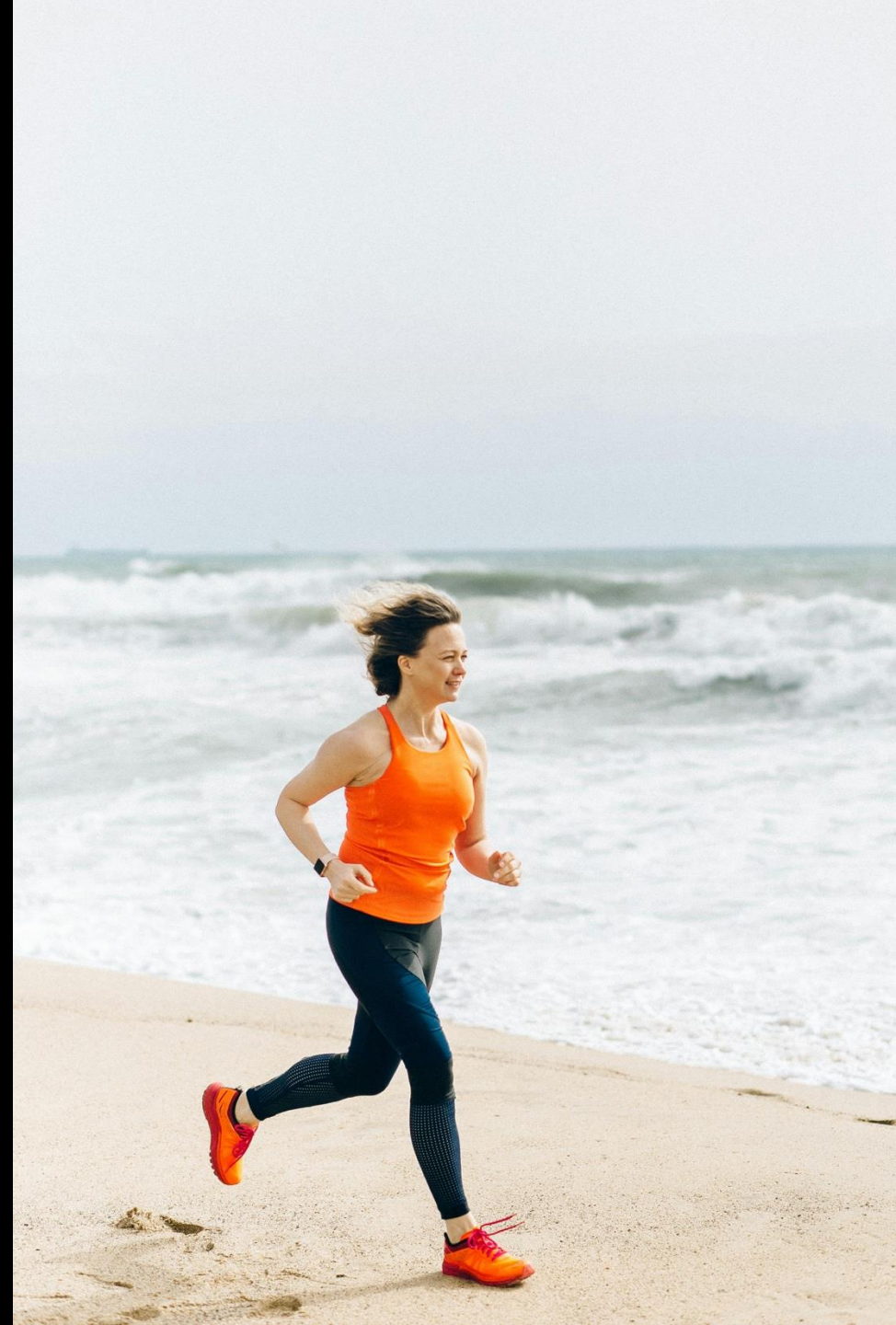




A Bold Vision, A Limited Impact



- * Inflexible System & Lack of Control**
- * Lack of Personalization**
- * Disconnection Between Promise and Reality**



Motivation

HIGH

LOW



DAY 1

Initial Motivation vs.
Long-term Engagement

Ability

HARD

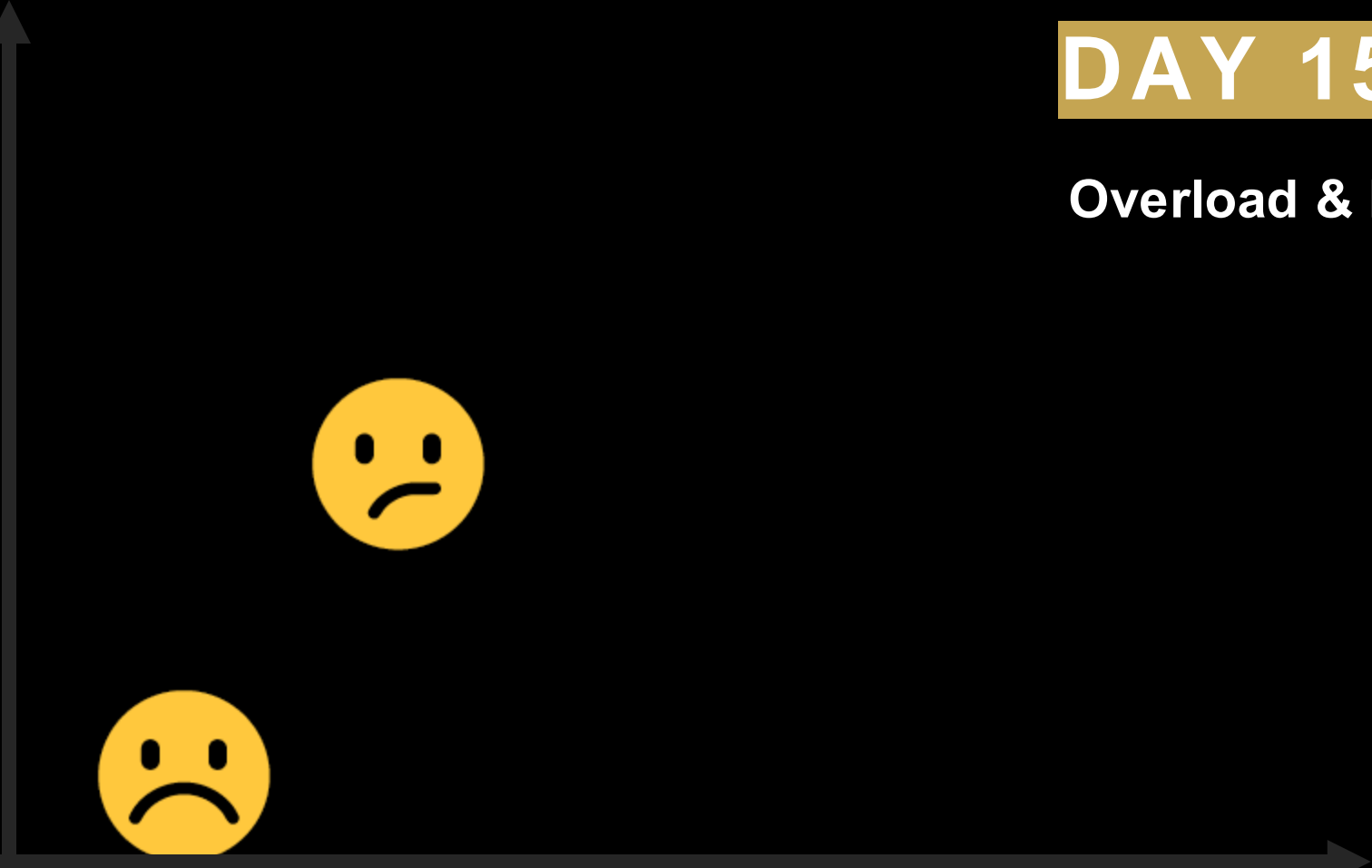
EASY



Motivation

HIGH

LOW



DAY 15

Overload & Frustration

HARD

EASY

Ability

Motivation

HIGH

LOW



DAY 20

The Habit Line

Ability



HARD

EASY

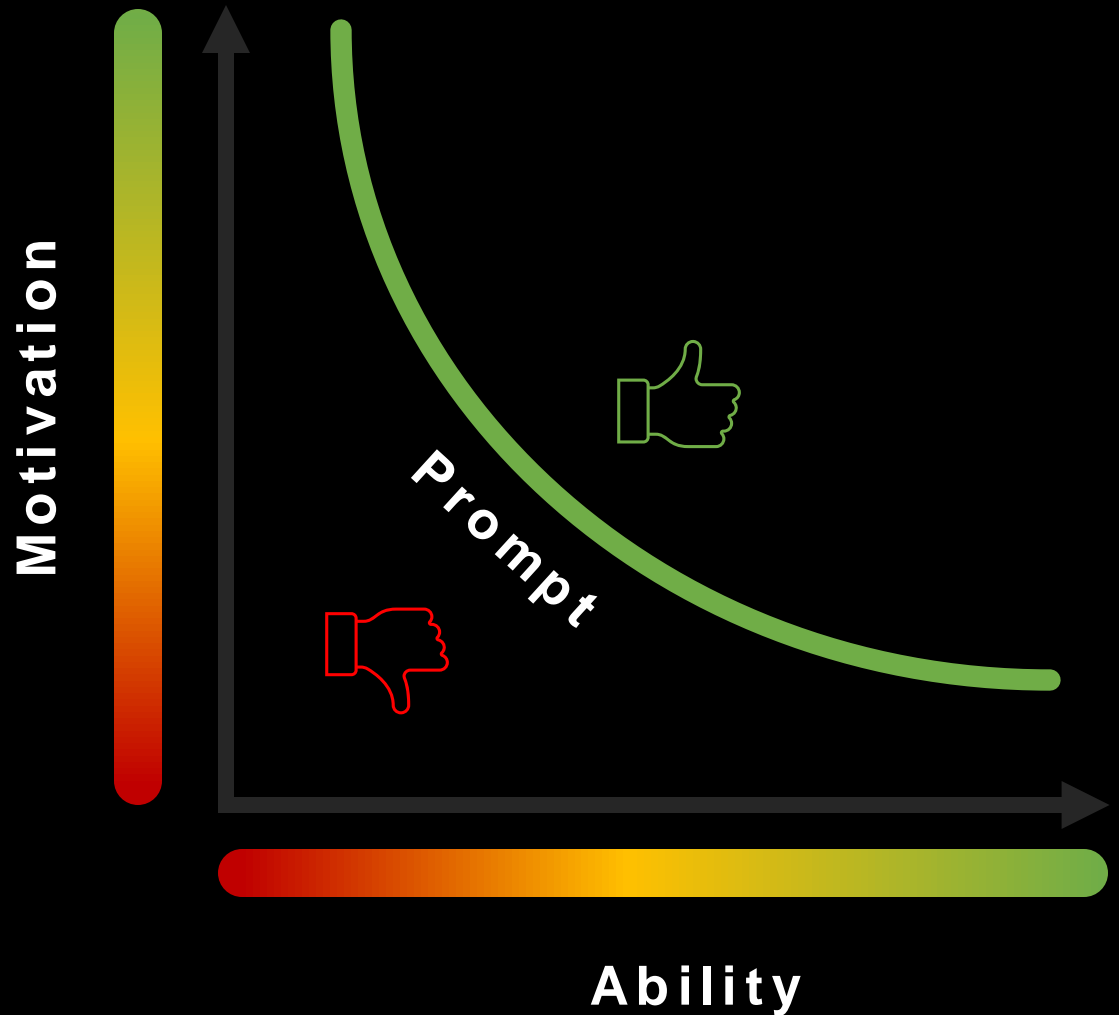


The Science of Behavior Change

Fogg's Behavior Model

“Behavior happens when Motivation, Ability, and a Prompt come together at the same time.”

“



B = MAP

Behavior

**What someone
does**

Motivation

**Why they
want to do it**

Ability

**How they will
achieve it**

Prompt

**What kickstarts
the whole
process**

B = M A P

Behavior

Motivation

Ability

Prompt

Solution
Idea
Service
App
Process
...

B = MAP

Behavior

Motivation

Ability

Prompt

Do they know it's a problem?

How big is it?

Why do they want to solve it?

What happens if they do?

What happens if they do nothing?

B = **M** **A** **P**

Behavior

How have they tried to solve it?
What other solutions are there?

Motivation

Do they know it's a problem?
How big is it?
Why do they want to solve it?
What happens if they do?
What happens if they do nothing?

Ability

Prompt

B = M A P

Behavior

Motivation

Ability

Prompt

Sparks
Facilitators
Signals

Transtheoretical

Modal

Prochaska (1983)

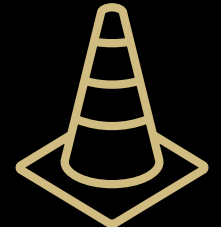
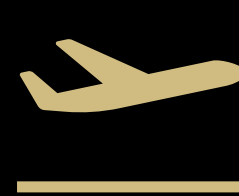
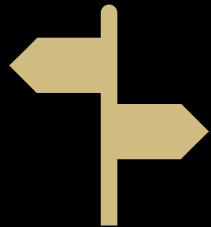
Nudge

Theory

Prochaska (1983)



The Stages of Change



Precontemplation

Contemplation

Preparation

Action

Maintenance

Nudge Theory



1

Align incentives with desired behaviors.

2

Provide clear, visible, and immediate feedback to reinforce desired actions.

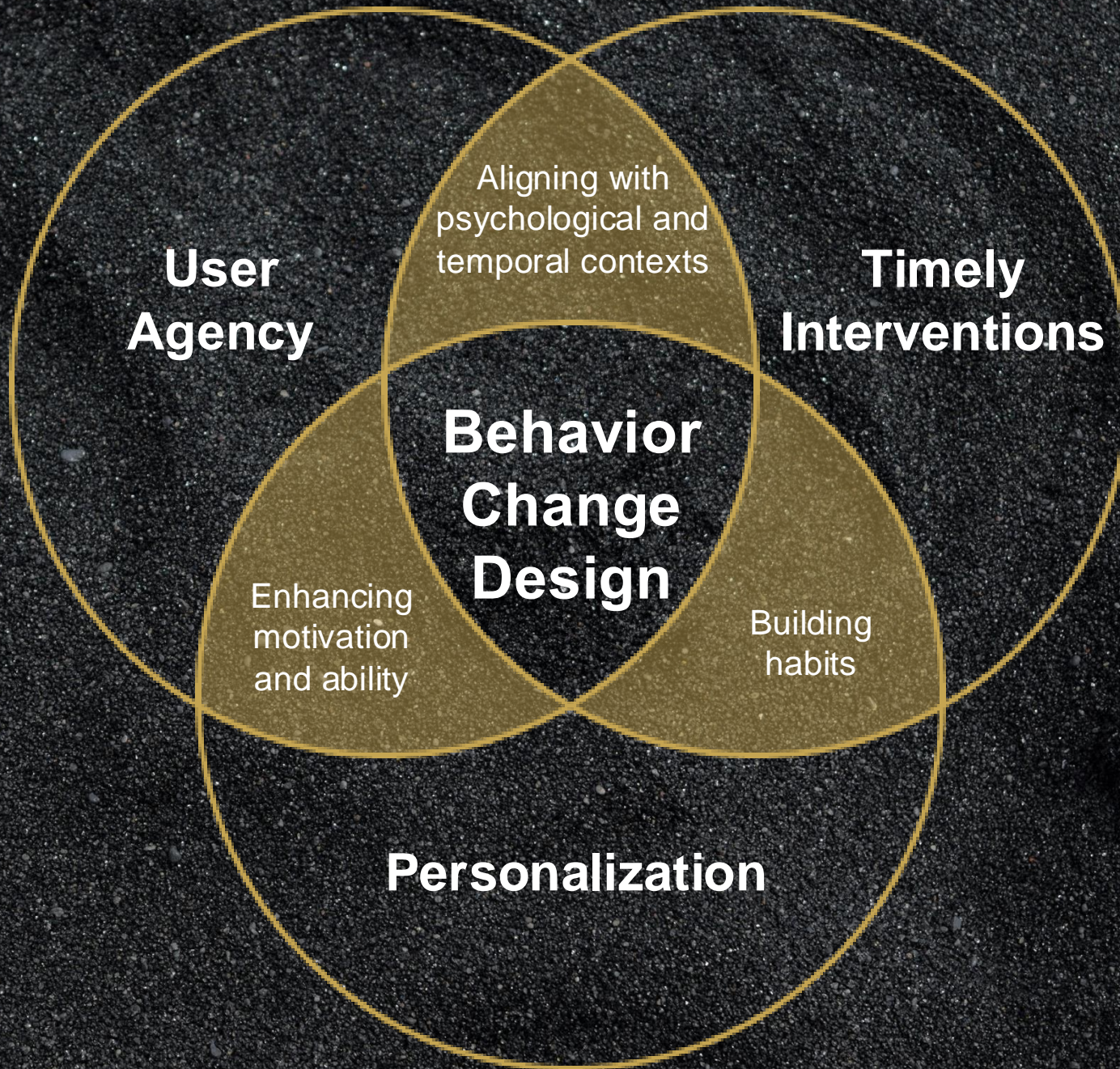
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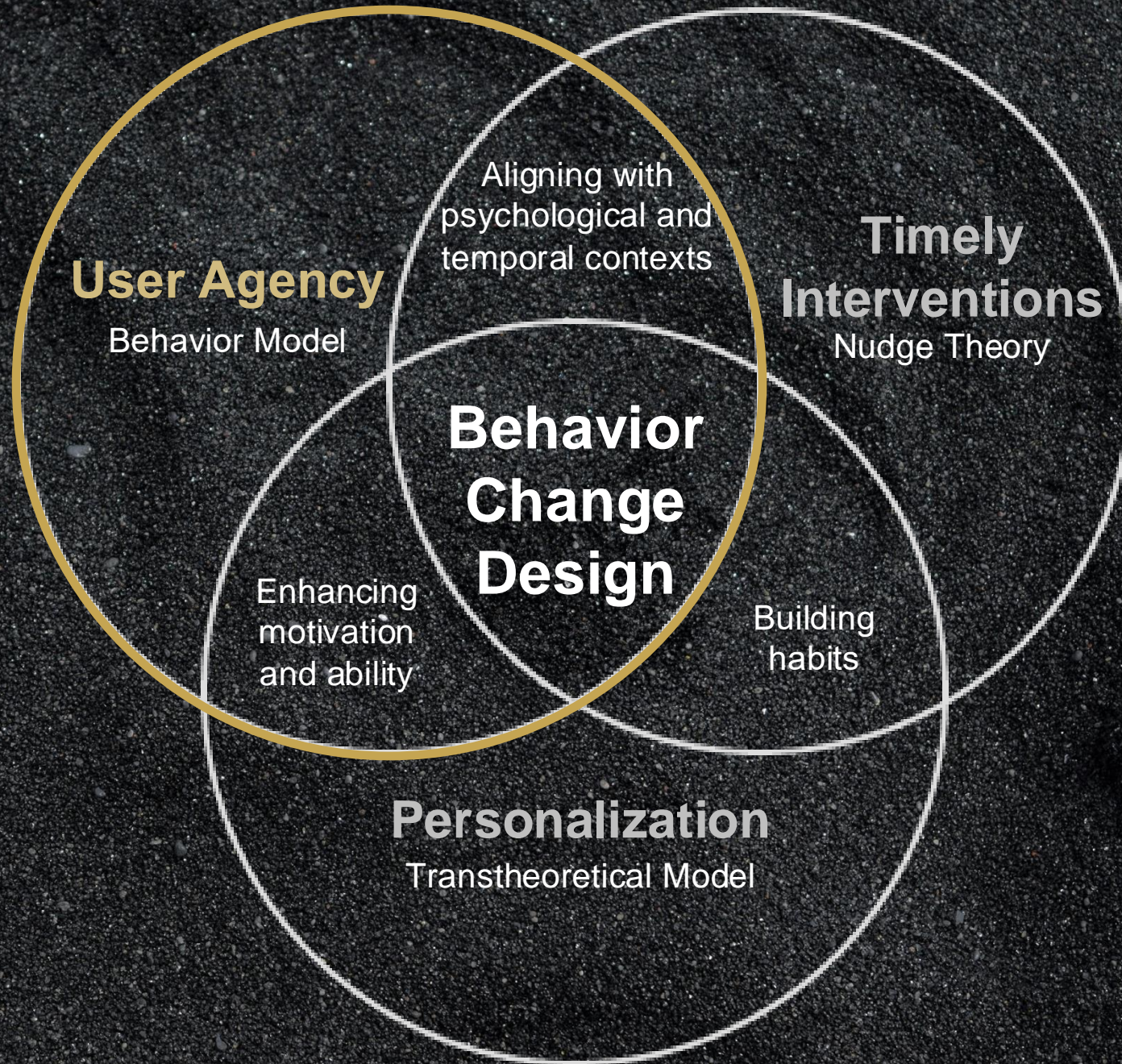
Simplify and structure choices when decision-making parameters are complex.

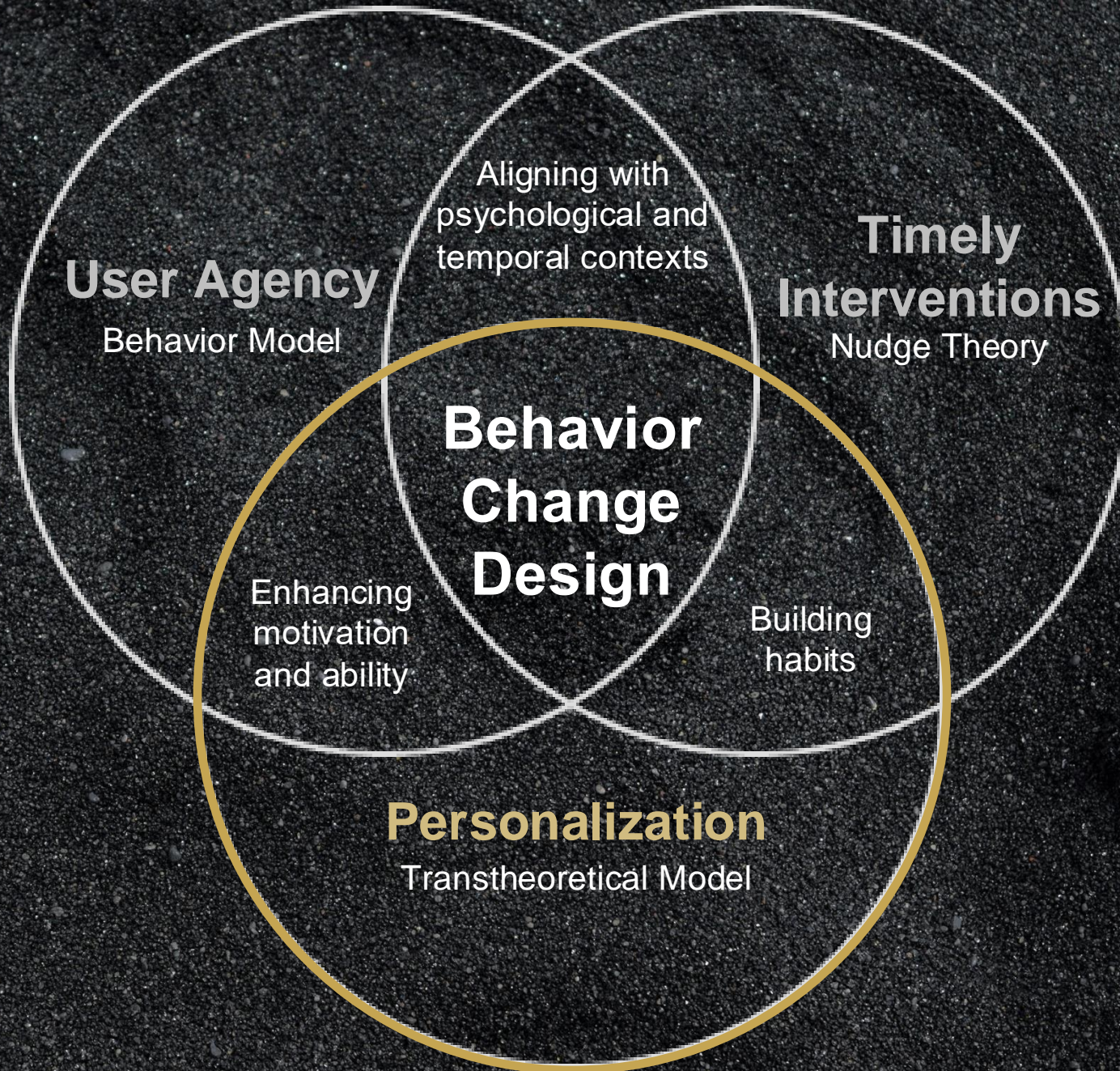
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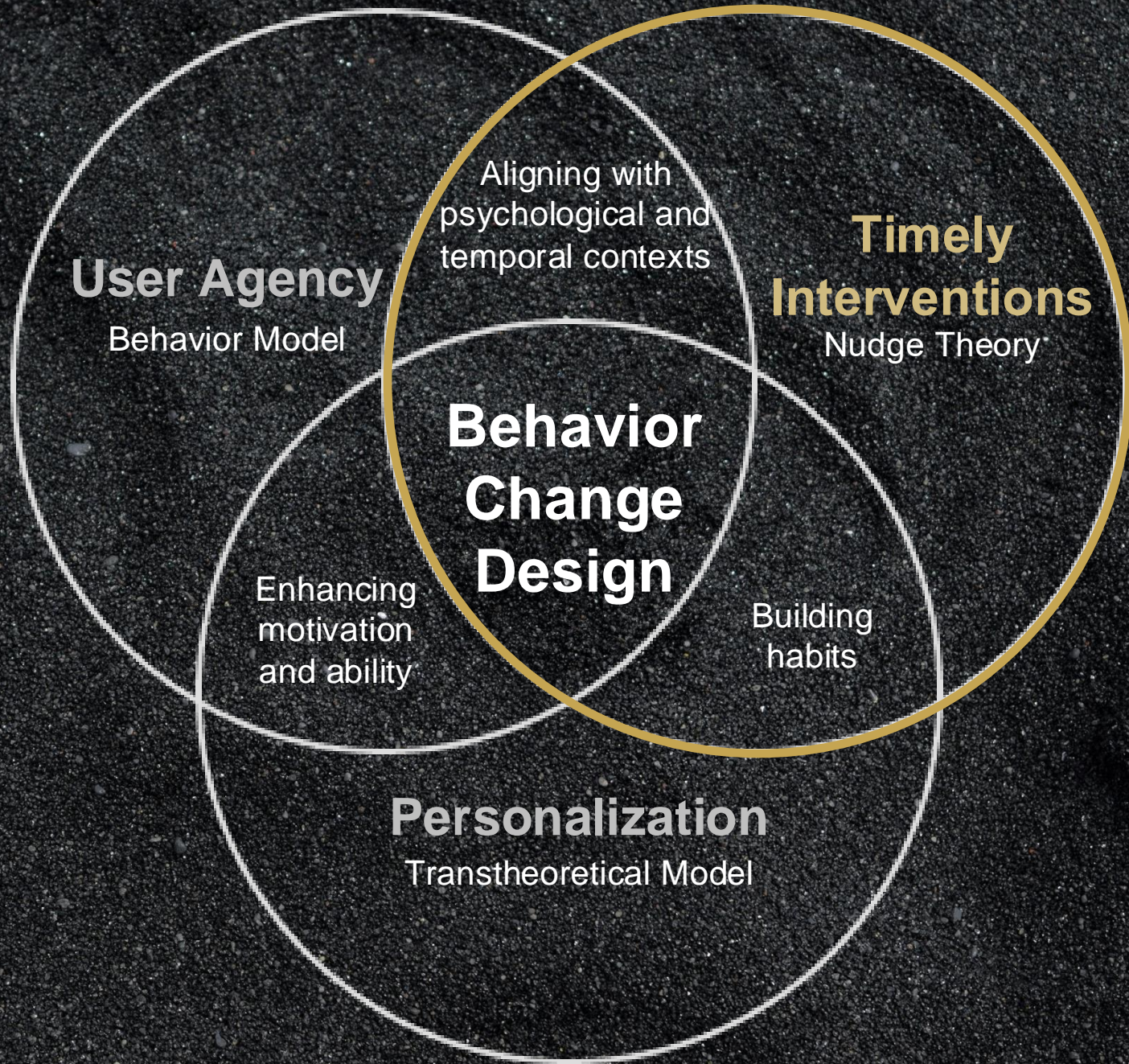
Make goals and performance status clearly visible (system feedback).











Empowering Change with AI

Designing behavior change with AI requires more than technology; it requires timely interventions in the different stages of users' motivations and, at least, a 20-day plan to sustain motivation.

Guide users gently—use personalization and timely interventions to inspire action.

Thank You

Website jcerejo.com

Linkedin [In/jcerejo](https://www.linkedin.com/company/jcerejo)