



BRAINS OFF FOR LEARNING

DESIGN WITH PROCESSING IN MIND

Kelli Frey



REFLECTION

Why do we do what we do?

We want people to learn



CORE TRUTH

Why we do what we do?
We want people to learn

Step one is processing information

THE BIG PICTURE





CORE IDEA

Why we do what we do

We want people to learn

Step one is processing information

Taking breaks improves processing



Metacognition Break

GLAD TO MEET YOU

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Say Hi on LinkedIn!



GOALS

- Understand how and when humans process information.
- Explore ways to use intentional pauses in learning experiences for deeper learning and retention.

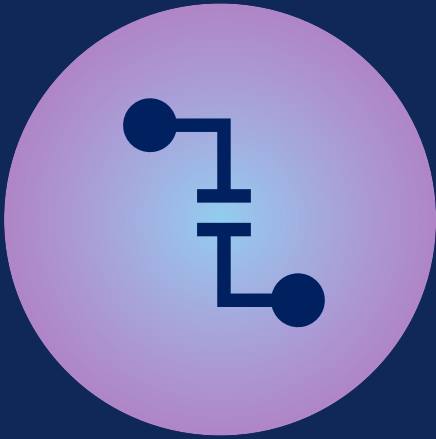
WHERE WE'RE GOING

- Theory
- Application
- Practice
- Wrap Up

THEORY REVIEW



CORE THEORIES



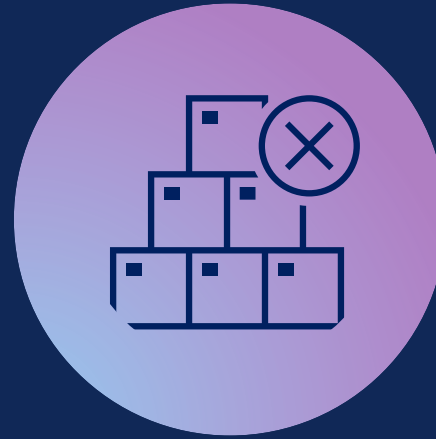
Information Processing

Creating Neural
Connections



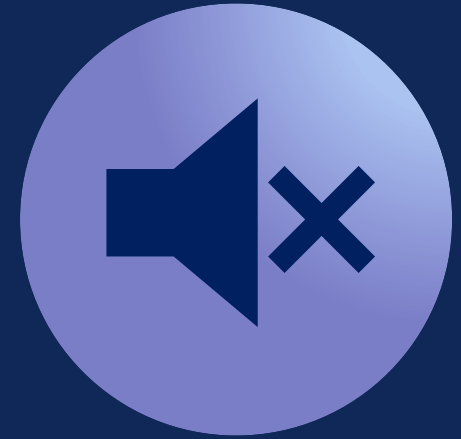
Consolidation

20x Replay



Cognitive Load

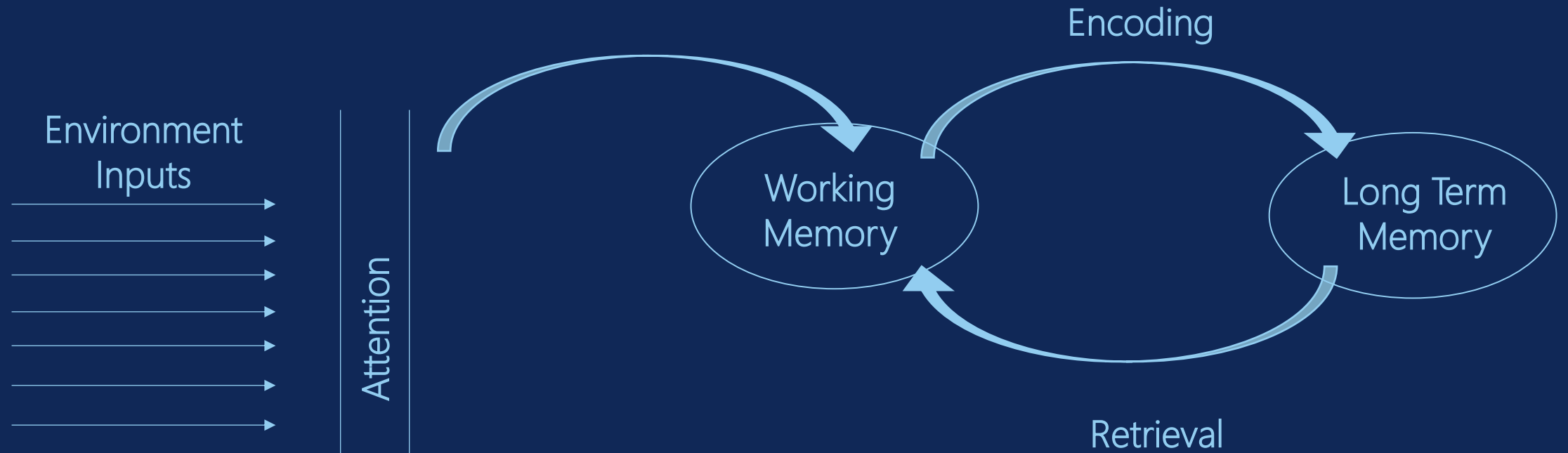
Information Absorption
Limits



Neural Adaptation

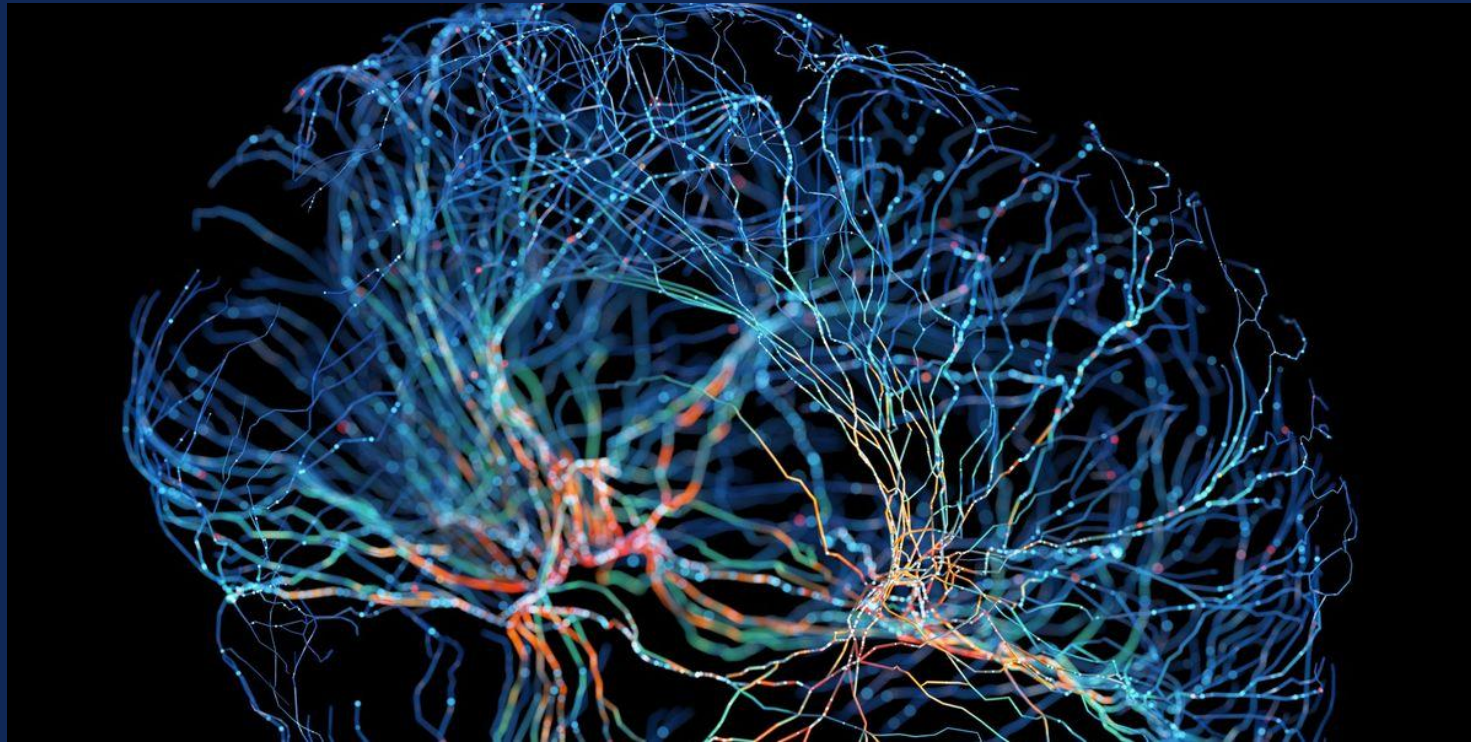
Information Noise Fatigue

INFORMATION PROCESSING



INFORMATION PROCESSING

CREATING NEURAL CONNECTIONS



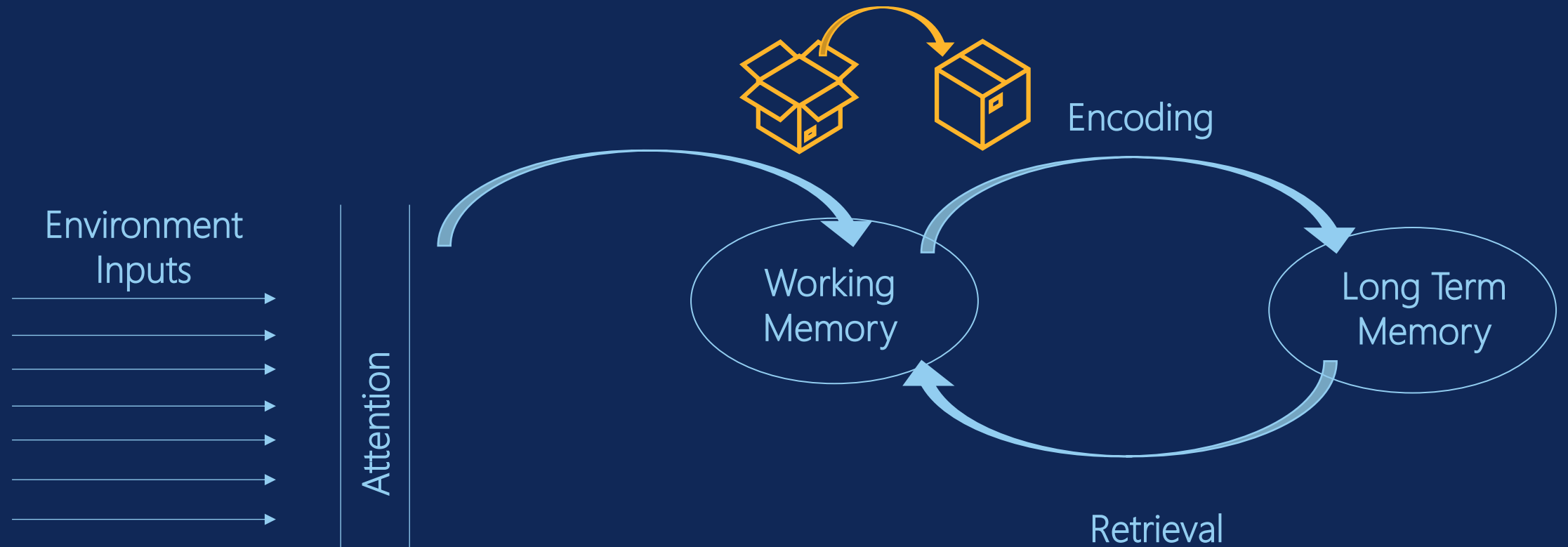
KEY TAKEAWAY

Information Processing is a multi-step process.

Required for learning.

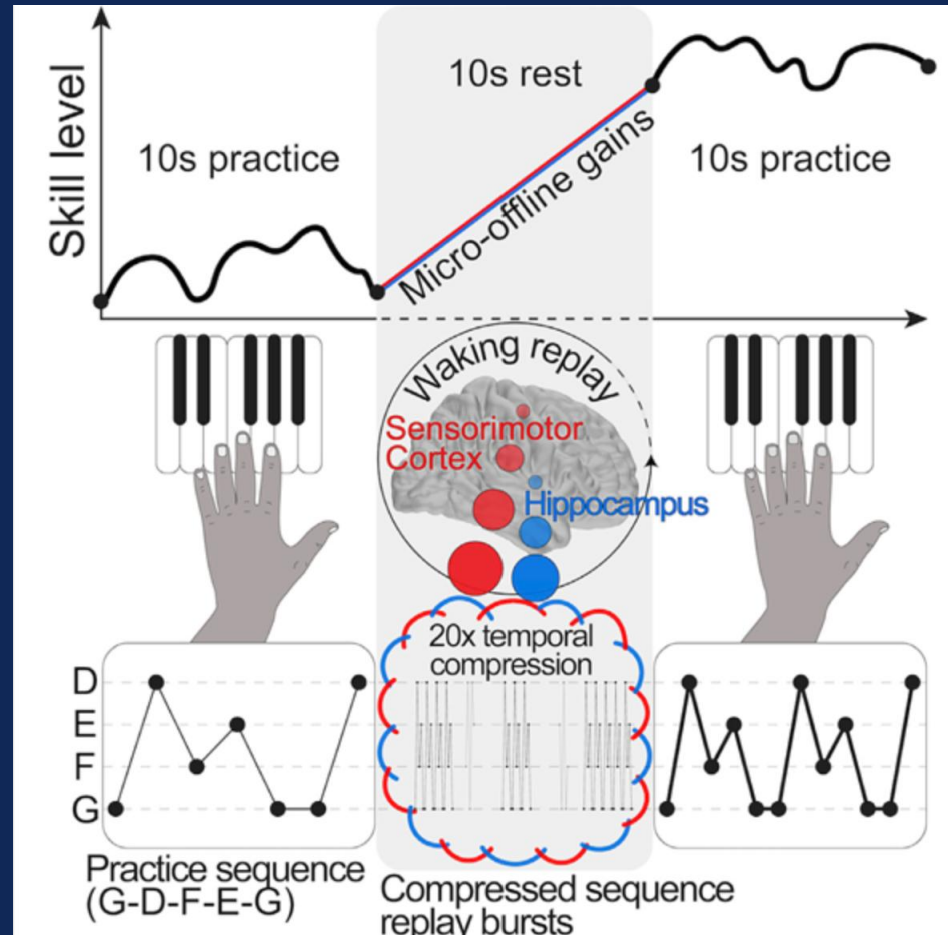
CONSOLIDATION

20X REPLAY



CONSOLIDATION

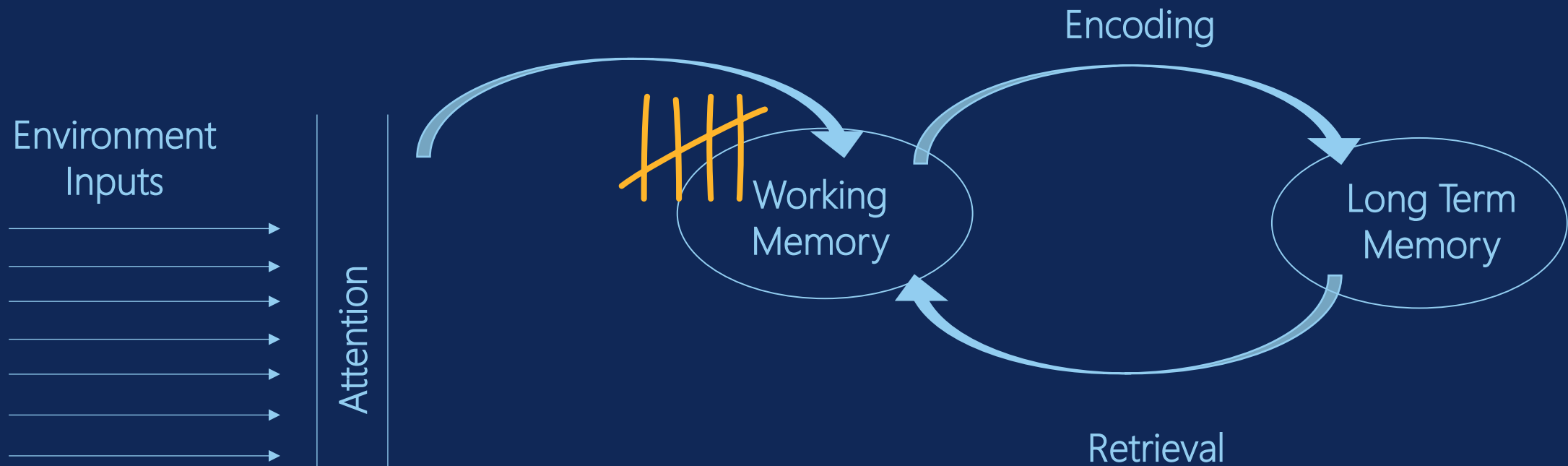
HIPPOCAMPO-NEOCORTICAL REPLAY



KEY TAKEAWAY

A break allows the brain to process information faster.

COGNITIVE LOAD

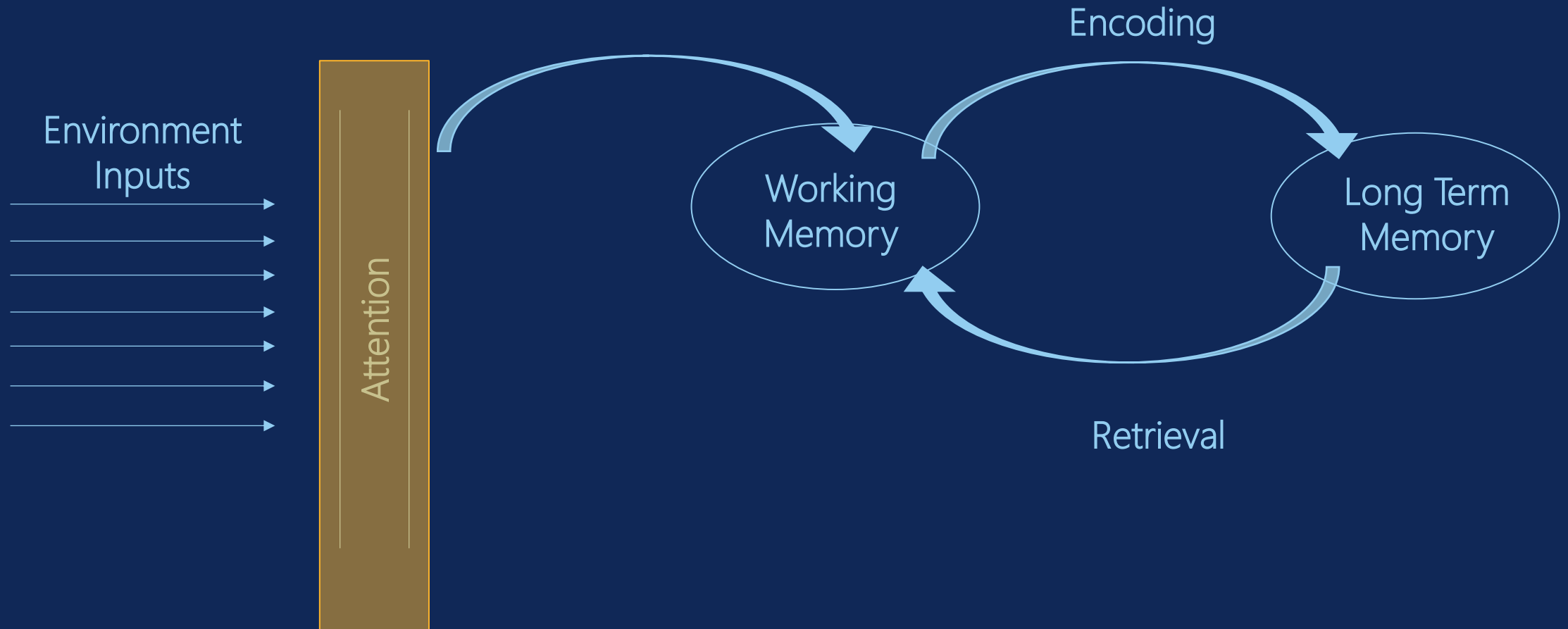


KEY TAKEAWAY

There is a limit to how much a person can think about at one time.

Amount matters.

NEURAL ADAPTATION



NEURAL ADAPTATION

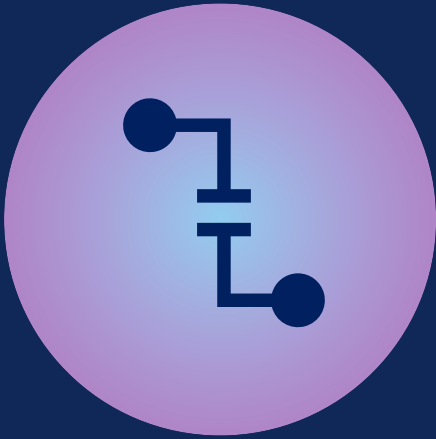


KEY TAKEAWAY

Constant, repeated information causes fatigue.

Cadence Matters.

CORE THEORIES



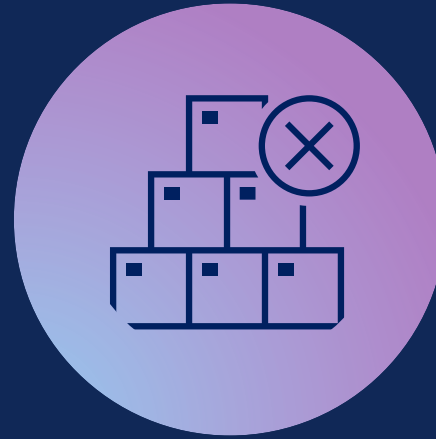
Information Processing

Creating Neural
Connections



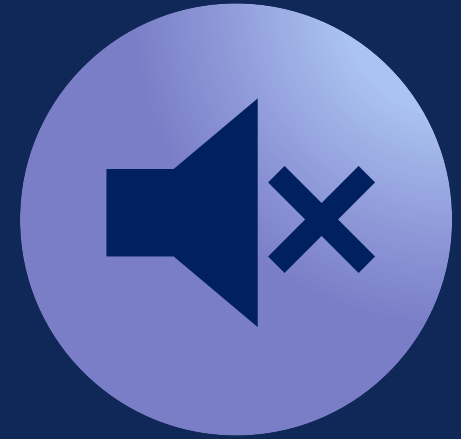
Consolidation

20x Replay



Cognitive Load

Information Absorption
Limits



Neural Adaptation

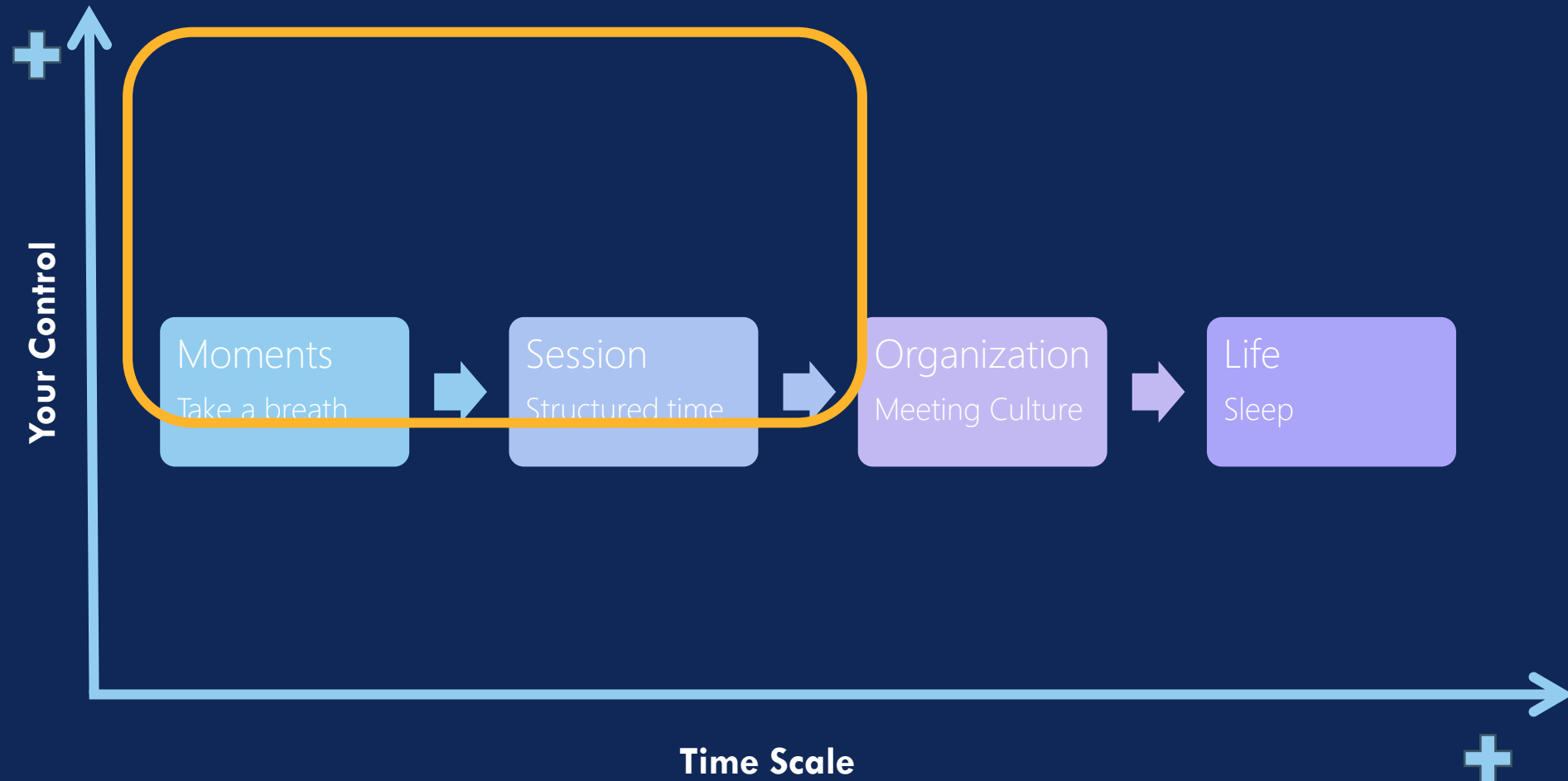
Information Noise Fatigue



Metacognition Break

APPLICATION

WHERE TO ADD BREAKS



TYPES OF BREAKS



Idea based breaks

In between concepts & ideas

After key points



Time based breaks

Every 3-5 minutes

Every 30 minutes

Every 53 minutes

SAMPLE BREAKS



Idea based breaks

Section Break

Reflection

Interactivity

Recap



Time based breaks

Metacognition Moment

Bio Break

Multiple sessions

QUALITY OF BREAKS

Without
distraction

Outside

Moving

With
People

Some

With
distraction

Inside

Stationary

Alone

None



Metacognition Break

PRACTICE

PRACTICE TOGETHER with SCENARIOS



Liz



Taylor



Oscar



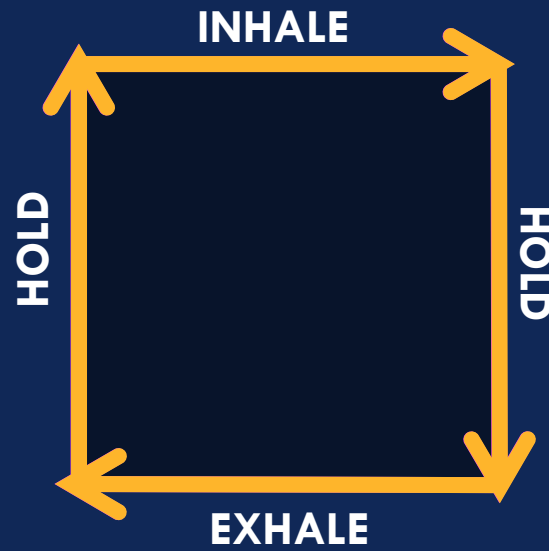
Mary

BONUS BREAK IDEAS

Video Break



Box Breathing



Hand Exercises



WRAP UP

Recap, Reflection, References

WHERE WE'VE BEEN

- Theory
- Application
- Practice

CORE THEORIES

TYPES OF BREAKS

QUALITY OF BREAKS

PRACTICE TOGETHER with SCENARIOS



AFTER THE BREAK

Join the group to check in with each other after the conference to amplify your conference experience!

RESOURCES & REFERENCES

Information Processing - <https://www.sciencedirect.com/topics/psychology/information-processing-theory>

Consolidation - <https://pmc.ncbi.nlm.nih.gov/articles/PMC8259719/>

Cognitive Load - <https://www.sciencedirect.com/science/article/pii/S1041608024000165>

Neural Adaptation - <https://pubmed.ncbi.nlm.nih.gov/33561404/>

3-5minutes -

<https://www.researchgate.net/publication/283479581> The myth of the six minute rule Student engagement with online videos

30 minutes Movement Recommendation - <https://pubmed.ncbi.nlm.nih.gov/36728338/>

53 minutes Focus - <https://deskttime.com/blog/52-17-updated>

Quality of Breaks – Daniel Pink <https://bigthink.com/plus/3-key-takeaways-from-atd-2024/>

Additional

- <https://www.nih.gov/news-events/news-releases/study-shows-how-taking-short-breaks-may-help-our-brains-learn-new-skills>
- <https://neurocity.co/guides/best-micro-break-strategies-sustained-focus>
- <https://www.apa.org/monitor/2019/01/break>

FINAL THOUGHT

Building in breaks is not easy but it is worth it!



THANK YOU

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