



Bible Reading & Biblical Expertise: Lessons from Psychology & Neuroscience

Dr. Thad A. Polk

#Theological23



Bible Reading and Biblical Expertise: Lessons from Psychology & Neuroscience

Thad Polk, Ph.D.

Bahasa Indonesia



My wife Norma

Bahasa Indonesia

Indonesian

Mari kita
tundukkan
kepala dan
berdo'a
bersama

Bahasa Indonesia

Indonesian



English

Mari kita
tundukkan
kepala dan
berdo'a
bersama

Let's bow our heads
and
pray together

Bahasa Indonesia

Indonesian ↔ English

Mari kita tundukkan kepala dan berdoa bersama

Let's bow our heads and pray together

Indonesian

Mari kita
tundukkan
kelapa dan
berdosa
bersama

Did you mean: **Mari kita tundukkan kep...**

Bahasa Indonesia

Indonesian



English

Mari kita
tundukkan
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Let's bow our heads
and
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Indonesian

Mari kita
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Did you mean: **Mari kita tundukkan kep...**

Bahasa Indonesia

~~Indonesian ↔ English~~

~~Mari kita tundukkan kepala dan berdoa bersama~~ × ~~Let's bow our heads and pray together~~

Indonesian ↔ English

Mari kita tundukkan kelapa dan berdosa bersama

Let's bow our coconuts and sin together

Did you mean: Mari kita tundukkan kep...

Bahasa Indonesia

Indonesian ↔ English

Mari kita tundukkan kepala dan berdoa bersama × Let's bow our heads and pray together

Indonesian ↔ English

Mari kita tundukkan kelapa dan berdosa bersama × Let's bow our coconuts and sin together

Did you mean: Mari kita tundukkan kep...

Outline

1. The power of practice
2. How consistent practice changes the mind and brain
 - Implications for regular Bible reading
3. How to promote positive habits like Bible reading

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Demo: Digit Span

- Take out paper and a pen or open an App to write notes
- I'll read lists of digits. When I'm done, write them down
- This is a standard test of working memory capacity

Demo: Digit Span

- First List:

Demo: Digit Span

- First List: 4 9 7 2 6

Demo: Digit Span

- First List: 4 9 7 2 6
- Second List:

Demo: Digit Span

- First List: 4 9 7 2 6
- Second List: 8 5 0 3 2 7

Demo: Digit Span

- First List: 4 9 7 2 6
- Second List: 8 5 0 3 2 7
- Third List:

Demo: Digit Span

- First List: 4 9 7 2 6
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- Third List: 1 6 3 4 9 2 7 0 5 8 4 2 3

Demo: Digit Span

- First List: 4 9 7 2 6
- Second List: 8 5 0 3 2 7
- Third List: 1 6 3 4 9 2 7 0 5 8 4 2 3

- I assume we exceeded your working memory capacity!

Memory Championships



© World Memory Championships

Memory Championship Results

- In 2019, a competitor correctly repeated back 547 digits with no errors!

Memory Championship Results


- In 2019, a competitor correctly repeated back 547 digits with no errors!
- In 2020, a competitor memorized 410 words in 15 minutes

Memory Championship Results

- In 2019, a competitor correctly repeated back 547 digits with no errors!
- In 2020, a competitor memorized 410 words in 15 minutes
- In 2018, a competitor memorized the sequence of cards in a shuffled deck in 12.74 seconds



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YOUTH CENTER



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Exceptional Memory?

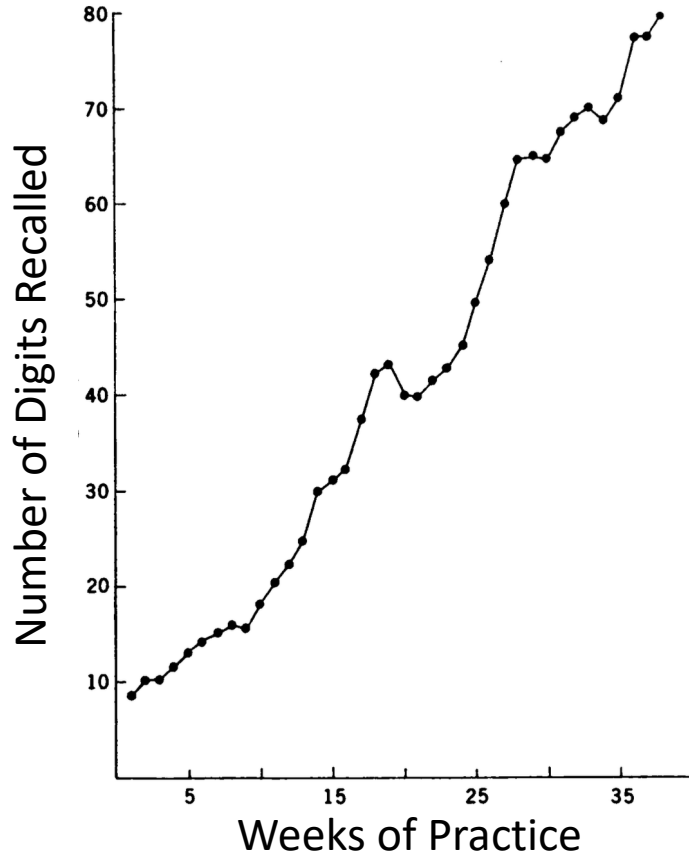
Exceptional Memory? NO!

- Joshua Foer (science journalist) interviewed contestants
- They typically said their memory WASN'T exceptional
- They just practiced and developed strategies & skills
- So Foer decided to try training his own memory

USA
International Memo
Championship



© Penguin Press



Ericsson, Chase & Falloon (1980, *Science*)

The Point

- Consistent practice can lead to amazing new abilities
- And it's just not just memory:
 - Playing an instrument
 - Playing a sport
 - Learning a language

The Point

- Consistent practice can lead to amazing new abilities
- And it's just not just memory:
 - Playing an instrument
 - Playing a sport
 - Learning a language
 - ...and BIBLICAL EXPERTISE!

Outline

1. The power of practice
2. How consistent practice changes the mind and brain
 - Implications for regular Bible reading
3. How to promote positive habits like Bible reading

Working Memory vs. Long-term Memory

Working memory (WM)

- Lasts a few seconds, decays quickly, very limited capacity
- E.g., remembering a phone number long enough to dial it

Working Memory vs. Long-term Memory

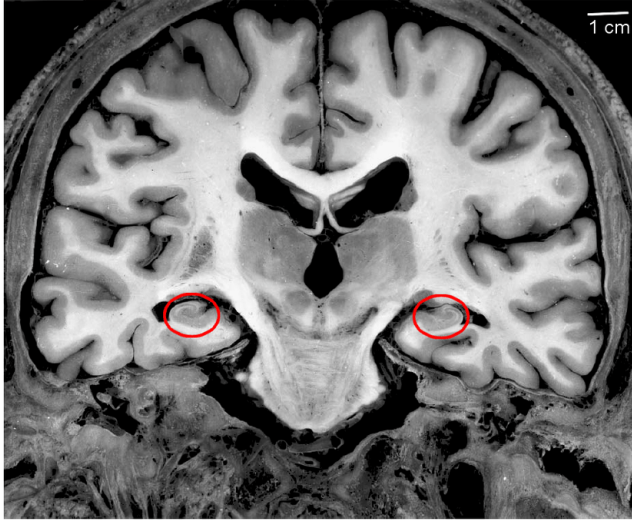
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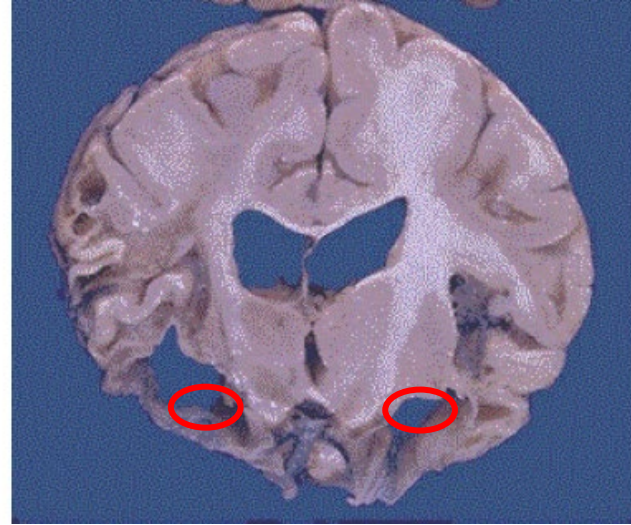
Long-term memory (LTM)

- Can last for years, decays slowly, unlimited capacity
- E.g., remembering events from childhood, remembering $2+2 = 4$

Working Memory vs. Long-term Memory



Normal Brain



Amnesic Brain
(Impaired LTM)

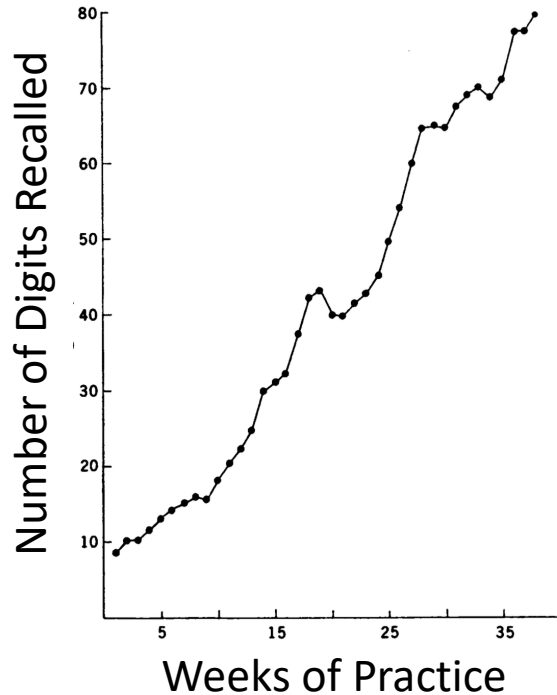
Novices use WM. Experts also use LTM

- Novices lack knowledge. Rely on information in WM
 - E.g., Remember French words: EST EAU ILS VIN QUI
 - E.g., Remember meaningless letters: FB ICI AFD RJF K

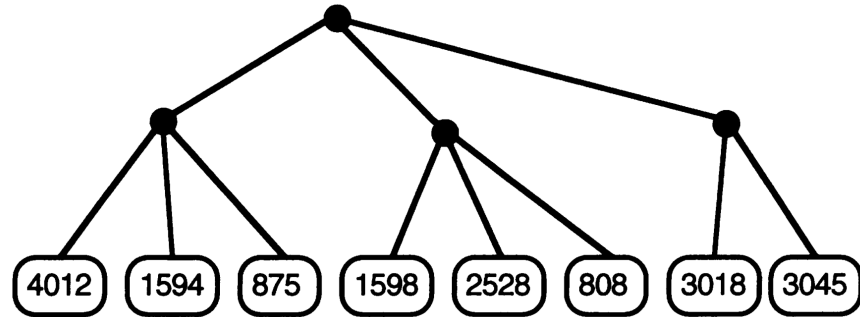
Novices use WM. Experts also use LTM

- Novices lack knowledge. Rely on information in WM
 - E.g., Remember French words: EST EAU ILS VIN QUI
 - E.g., Remember meaningless letters: FB ICI AFD RJF K
- Experts have knowledge in LTM. Can link new info to LTM
 - E.g., Remember English words: YOU CAR TOE WHO RUN
 - E.g., Remember meaningful groups of letters: FBI CIA FDR JFK
 - Chunks: meaningful groupings that can be processed as a unit

Novices use WM. Experts also use LTM



Started grouping digits into running time chunks he had in LTM (he was a distance runner)

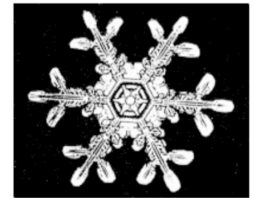
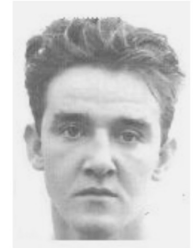


Ericsson, Chase & Falloon (1980, *Science*)

Novices use WM. Experts also use LTM



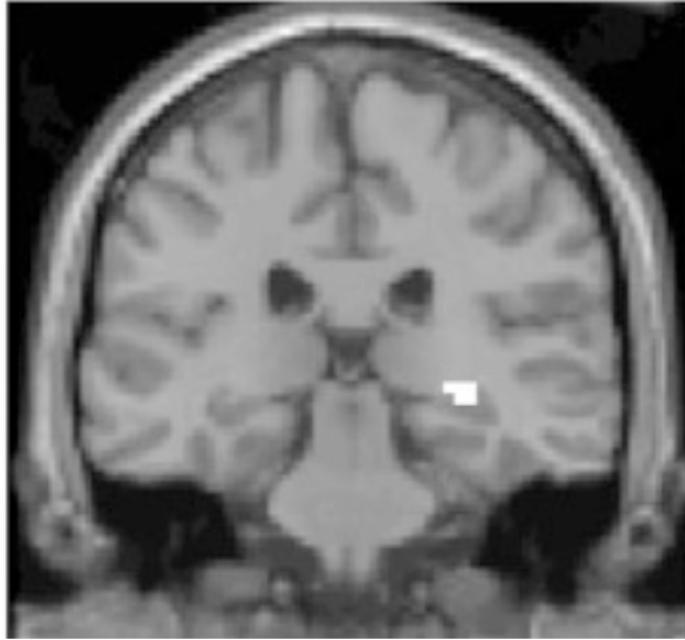
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Experts vs. Novices

Maguire et al. (2003, *Nature Neuroscience*)

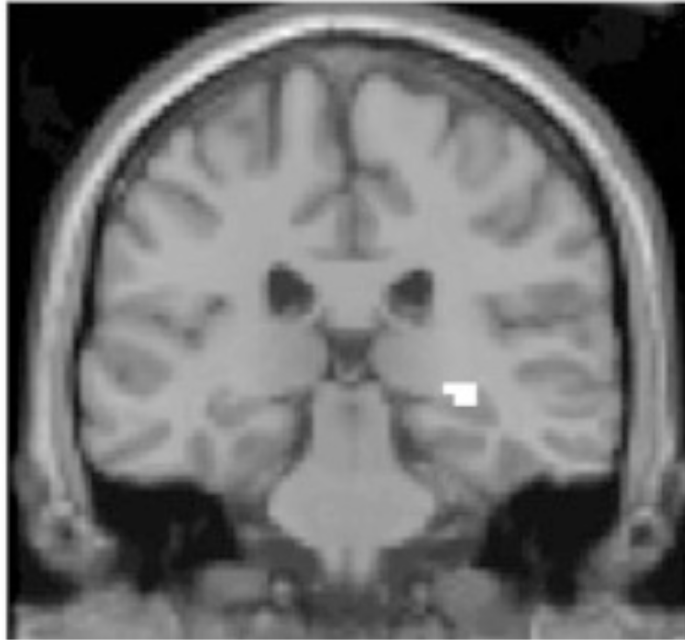
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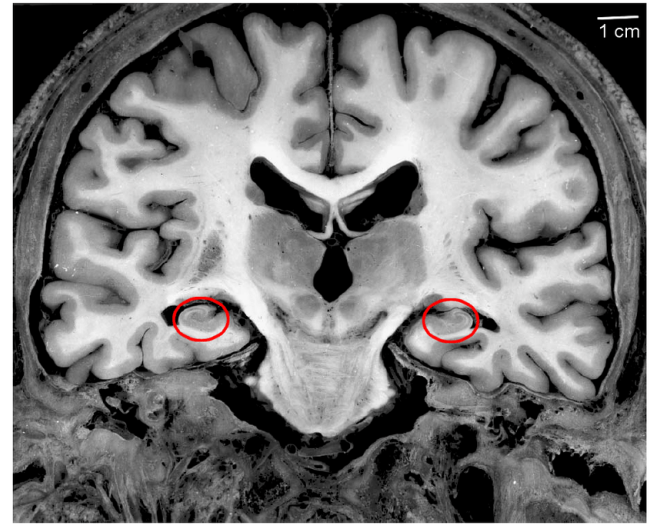
Experts - Novices

Maguire et al. (2003, *Nature Neuroscience*)

Novices use WM. Experts also use LTM



Experts - Novices



Hippocampus (LTM)

Maguire et al. (2003, *Nature Neuroscience*)

Effects of Regular Bible Reading

- First reading: notice random things without connections
 - E.g., Paul telling Gentiles they're not 2nd-class Christians
- More reading: store LTM chunks that allow connections
 - Similar arguments in Ephesians, Romans, other letters, ...
- More reading: Build up rich hierarchy of knowledge that allows yet more connections to be drawn
 - E.g., Paul's heart to unify Gentile and Jewish believers
- Process can snowball until you recognize deep biblical themes

Effects of Regular Bible Reading

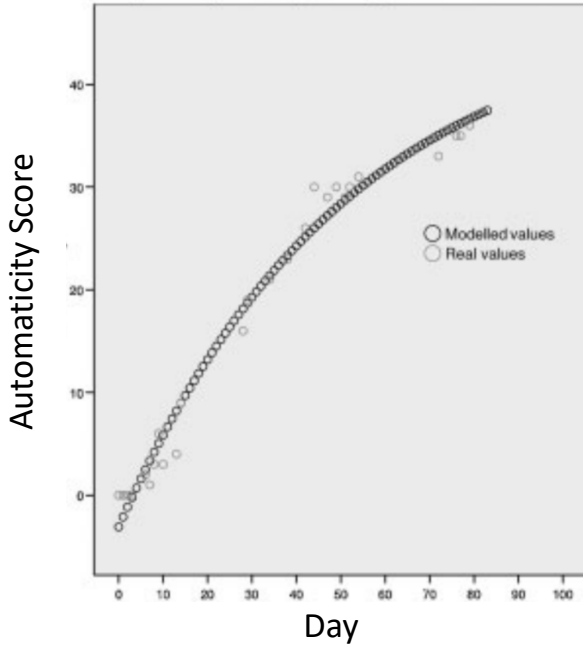
- Frees up your working memory for other things
 - Thinking through alternative interpretations of a passage
 - Thinking about real-world applications of a passage
- Relevant passages automatically come to mind from LTM
 - Afraid: Psalm 34; Matt 10
 - Anxious: Psalm 46; Matt 6
 - Backsliding: Psalm 51; I John 1
 - Bereaved: Matt 5; II Corin 1
 - Etc...

Outline

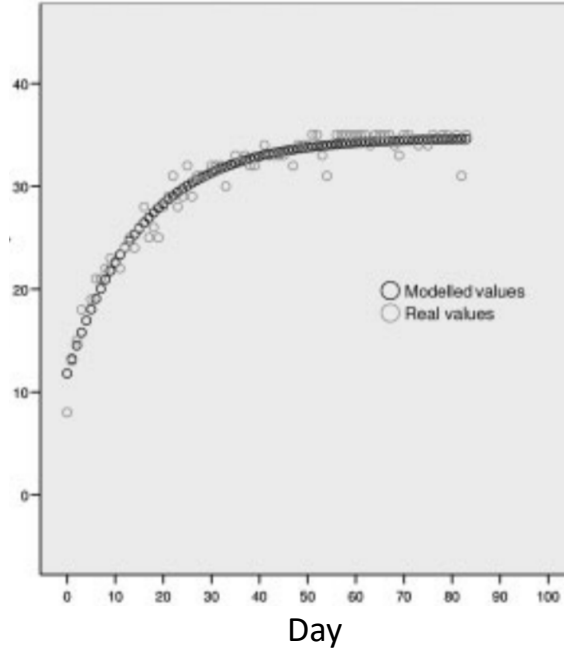
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Promoting Bible Reading: Repetition

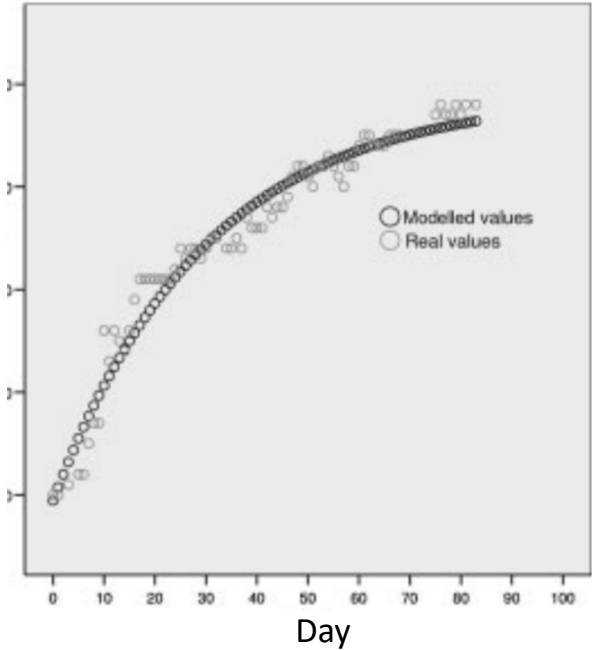
Sit-ups after morning coffee



Walking after breakfast

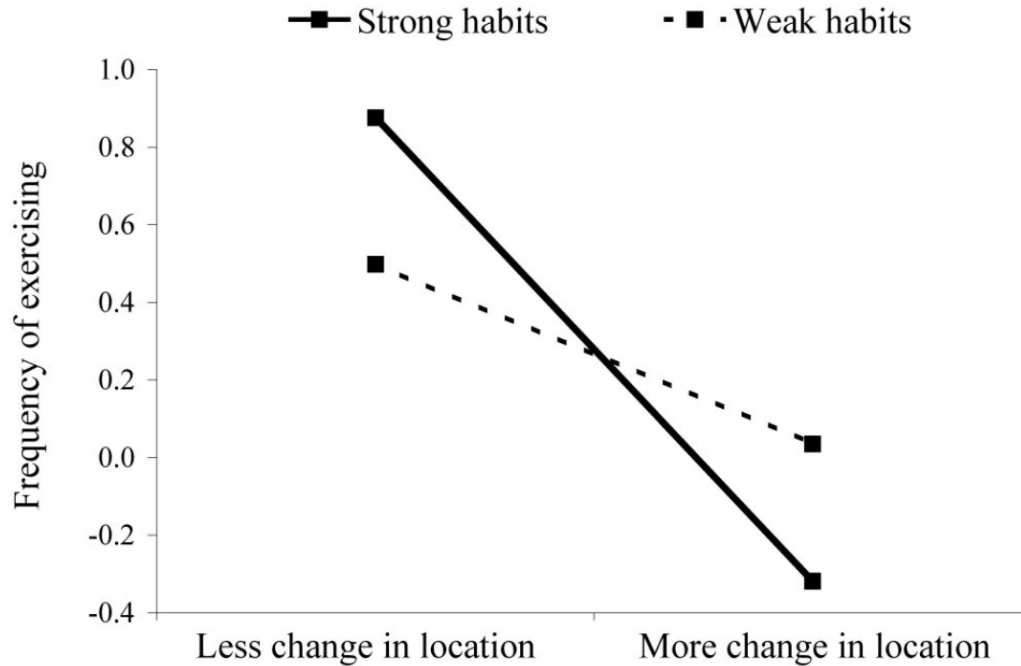


Exercising before dinner



Lally et al. (2010, *Eur Jnl of Social Psych*)

Promoting Bible Reading: Context



Wood, Tam & Witt (2005, *Jnl of Personality & Social Psych*)

Promoting Bible Reading: Context

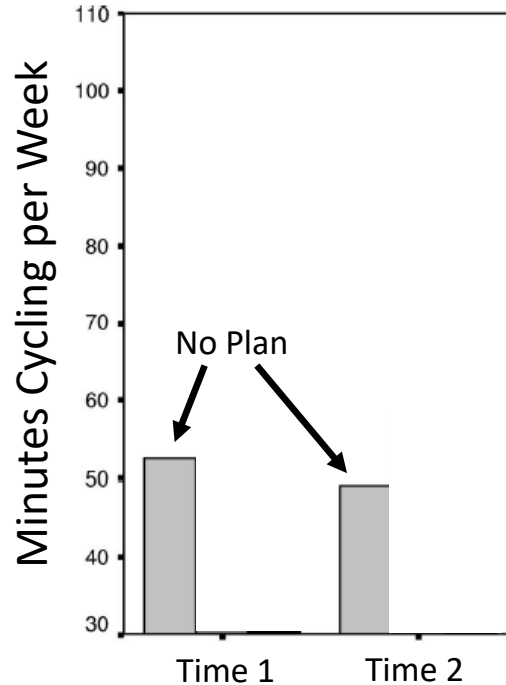
Create a PLACE for Bible reading (and only Bible reading)

- Maybe a desk or a chair, that gets strongly associated with reading
- Keep everything you need there (Bible, glasses, notebook, pen, ...)

Decide on an EVENT to cue Bible reading (& only Bible reading)

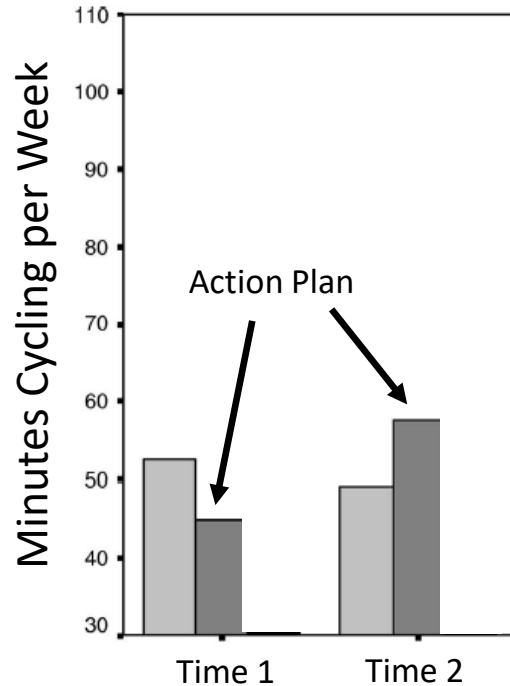
- Following some other habitual activity (coffee, shower, dinner, ...)
- Around the same time of day (but an event is a better cue than time)

Promoting Bible Reading: Planning



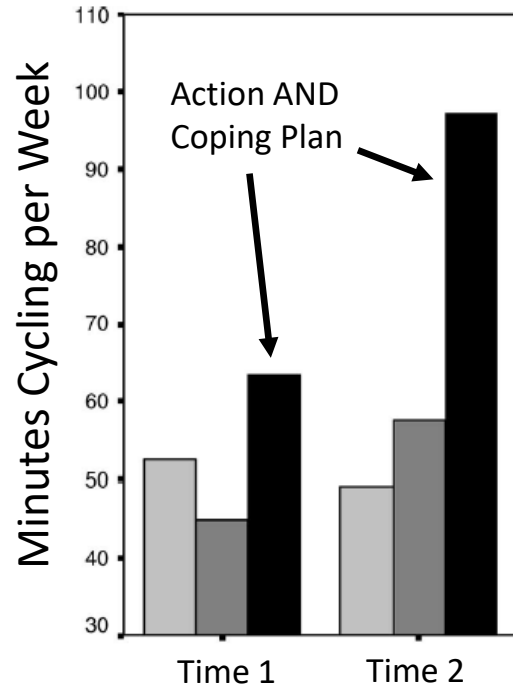
Sniehotta et al. (2006, *British Jnl of Health Psych*)

Promoting Bible Reading: Planning



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Promoting Bible Reading: Planning

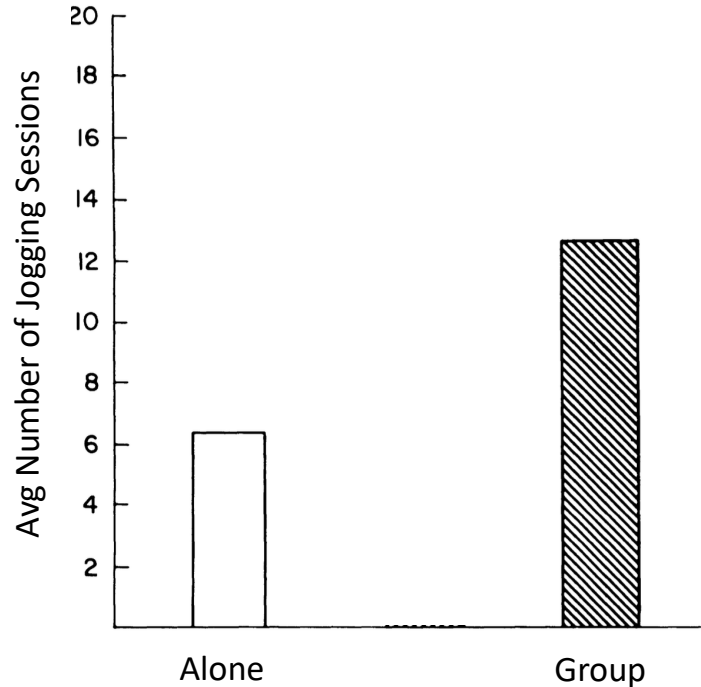
Come up with an ACTION plan

- Plan WHERE you will read (set up a Bible reading space)
- Plan WHEN you will read (with coffee, after breakfast, ...)

But also come up with a COPING plan

- Plan what you will do on days you're running late
- Plan what you will do when you're super busy
- Plan what you will do when you miss a day

Promoting Bible Reading: Social Support



King & Frederiksen (1984, *Behavior Modification*)

Promoting Bible Reading: Social Support

- Recruit friends to adopt the same Bible reading program
- Might even read together if that's practical (e.g., Spouse)
- Tell other people what you're doing & ask for support

Promoting Bible Reading: Gimmicks

| | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--|---|--|--|--|--|--|--|
| May S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | V. Ac filters (Copper filters) 6/6/22 | | | 1 20,958 161.6 Recycle 12:30 Day/Dan-Lisa + 21 Publix 3 Post-Reg. Hydroponics 25th | 2 20,959 160.9 V-JJ did yard | 3 20,960 160.5 Post sold Aiming for 20k & sleep | 4 20,961 160.7 Post sold China control |
| June S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 | 5 20,962 160.7 | 6 20,963 159.9 | 7 20,964 159 11-12h Regen-shedding no hydroponics 25th | 8 20,965 159 12:30 Dan/Kroger 1:45 ✓ Joseph Cerano ✓ Dan/Mc Donald's | 9 20,966 159 12-VA Green | 10 20,967 ? ✓ JTB open-pal 12:15 Library/CPS 2-3-4-5 did yard 4- Haircuts @ Tony's | 11 20,968 159.4 ✓ Post/Library |
| July S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | 12 20,969 161.1 | 13 20,970 160.9 Kaj's team painting P.R. | 14 20,971 160.0 61.3 | 15 20,972 161.3 Recycle Tomato/peppers planting 1:30-2:00 Wash, hydroponics 1:30-2:00 Fall | 16 20,973 ? 17 20,974 154.1 ✓ V-JJ did yard 2-1st Saurin Party | 18 20,975 160 10:00 Ernie's B/W 12:30 Party @ Pam's 1:2 Dan-Kroger 2:5 | |
| August S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | 19 20,976 160.9 Kaj's team painting P.R. | 20 20,977 158.1 New Eye drops ✓ V-JJ did Pruning | 21 20,978 160.0 Kaj's team painting P.R. | 22 20,979 160.1 Wash up hydroponics ✓ Sarah clean | 23 20,980 162.0 24 20,981 162.0 ✓ V-JJ did yard 2:25 Library 3:5 | 25 20,982 ? 10:50-11:00 Horizon Food ✓ Tom Reg. Corona et al Here - pool | |
| September S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 | 26 20,983 161.1 | 27 20,984 ? ✓ Stubble cut in new bags | 28 20,985 161.1 | 29 20,986 162 ✓ Recycle ✓ Laundry | 30 20,987 162.7 ✓ V-JJ did yard | | |
| October S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 | | | | | | | |

Promoting Bible Reading: Gimmicks

| | | |
|---|---|--|
| 5 20,962 156/209 160.7 | 6 20,963 157/208 D-Day 157.9 | 7 20,964 158/207 159 ✓ 11 - Linn/Ryan - Studley re Fitzgerald stove |
| 12 20,969 163/202 161.1 | 13 20,970 164/201 160.7 ✓ Ray's team painting P.R. | 14 20,971 165/200 Flag Day Full Moon / 61.3 |
| 19 20,976 170/195 Father's Day ? | 20 20,977 171/194 158.1 New EYE DECORS ✓ LJ did pruning | 21 20,978 172/193 Summer begins? |
| ✓ Pan, Ray, Cora, et al here for swim & dinner | | |

Promoting Bible Reading: Gimmicks

| | | | | | |
|----|--|----|--|----|---|
| 5 | 20,962 156/209 160.7 | 6 | 20,963 157/208 D-Day 157.9 | 7 | 20,964 158/207 159 11 - <u>Ann Ryan - Studley</u> re Fitzgerald stove |
| 12 | 20,969 163/202 161.1 | 13 | 20,970 164/201 160.7 | 14 | 20,971 165/200 Flag Day Full Moon / 61.3 |
| | | | | | Ray's team painting P.R. |
| 19 | 20,976 170/195 Father's Day ? | 20 | 20,977 171/194 158.1 New EYE DECORS J did pruning | 21 | 20,978 172/193 Summer begins? |
| | | | | | ✓ Pan, Ray, Cora, et al here for swim & dinner |

Promoting Bible Reading: Gimmicks

- Come up with some gimmick that motivates *you*
- Maybe something fun or light-hearted
 - Stickers, silly rewards for milestones, it really doesn't matter

Promoting Bible Reading: Summary

- Repetition
 - No magic number, but the more the better
- Consistent context
 - Standard place and cueing event
- Planning
 - Both action planning and coping planning
- Social support
 - Recruit friends, tell other people
- Gimmicks
 - Find some trick that works for *you*

Summary

1. The power of practice
 - Consistent practice can lead to amazing abilities
2. How consistent practice changes the mind and brain
 - Practice leads to rich LTM structures & frees up WM
 - Bigger picture, more connections, automatic associations
3. How to promote positive habits like Bible reading
 - Repeat, consistent context, plan, social support, gimmicks

Questions?

1. The power of practice
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