

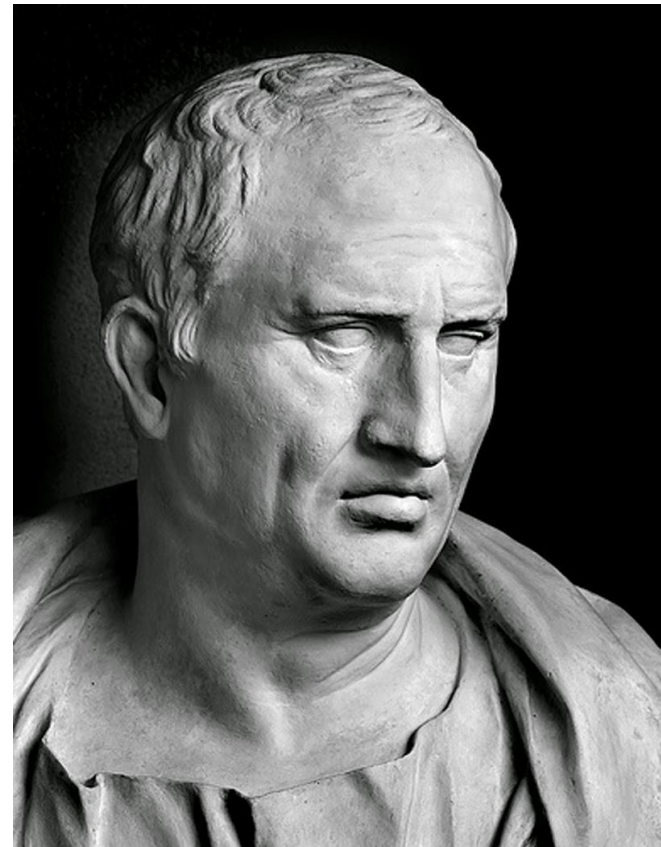


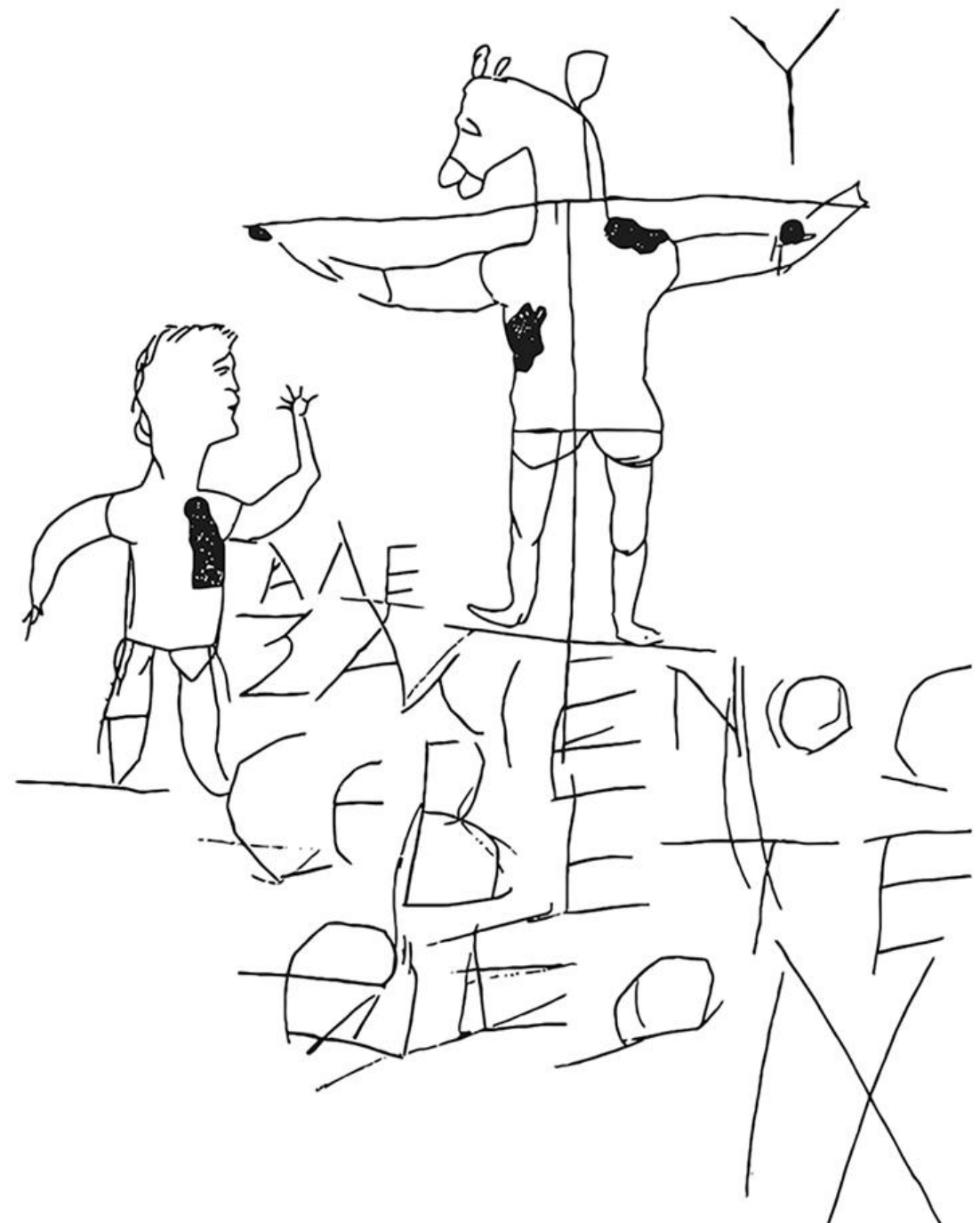
**DO YOU KNOW THE GOSPEL?**

GYC 2025

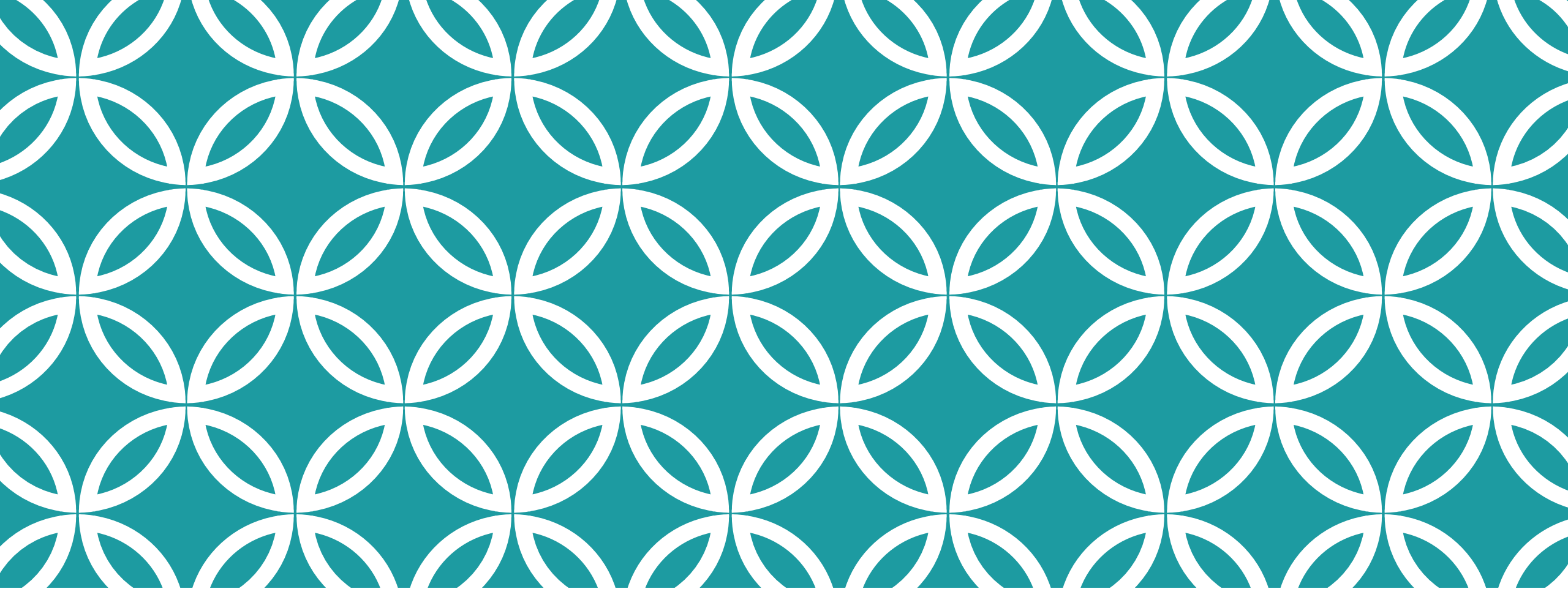
# CICERO

“The mere name of the cross, should be far removed, not only from the persons of Roman citizens—from their thoughts, and eyes, and ears. For not only the actual fact and endurance of all these things, but the bare possibility of being exposed to them,—the expectation, the mere mention of them even,—is unworthy of a Roman citizen and of a free man.”





Next: Science of Crucifixion



# THE SCIENCE OF THE CRUCIFIXION

Cahleen Shrier, PhD

# THE SCIENCE OF THE CRUCIFIXION

It is important to understand from the beginning that Jesus would have been in excellent physical condition. As a carpenter by trade, He participated in physical labor. In addition, He spent much of His ministry traveling on foot across the countryside. His stamina and strength were, most likely, very well developed.

# THE SCIENCE OF CRUCIFIXION

After the Passover celebration, Jesus takes His disciples to Gethsemene to pray. During His anxious prayer about the events to come, Jesus sweats drops of blood. There is a rare medical condition called hematohidrosis, during which the capillary blood vessels that feed the sweat glands break down. Blood released from the vessels mixes with the sweat; therefore, the body sweats drops of blood. This condition results from mental anguish or high anxiety, a state Jesus expresses by praying “my soul is deeply grieved to the point of death.” Hematohidrosis makes the skin tender, so Jesus’ physical condition worsens slightly.

# THE SCIENCE OF CRUCIFIXION

Traveling from Pilate to Herod and back again, Jesus walks approximately two and a half miles. He has not slept, and He has been mocked and beaten (Luke 22:63-65). In addition, His skin remains tender from the hematohidrosis. His physical condition worsens.

# THE SCIENCE OF CRUCIFIXION

Pilate orders Jesus to be flogged as required by Roman law before crucifixion. Traditionally, the accused stood naked, and the flogging covered the area from the shoulders down to the upper legs. The whip consisted of several strips of leather. In the middle of the strips were metal balls that hit the skin, causing deep bruising. In addition, sheep bone was attached to the tips of each strip.



# THE SCIENCE OF CRUCIFIXION

When the bone makes contact with Jesus' skin, it digs into His muscles, tearing out chunks of flesh and exposing the bone beneath. The flogging leaves the skin on Jesus' back in long ribbons. By this point, He has lost a great volume of blood which causes His blood pressure to fall and puts Him into shock. The human body attempts to remedy imbalances such as decreased blood volume, so Jesus' thirst is His body's natural response to His suffering (John 19:28). If He would have drunk water, His blood volume would have increased.

# THE SCIENCE OF CRUCIFIXION

Roman soldiers place a crown of thorns on Jesus' head and a robe on His back (Matthew 27:28-29). The robe helps the blood clot (similar to putting a piece of tissue on a cut from shaving) to prevent Jesus from sustaining more blood loss. As they hit Jesus in the head (Matthew 27:30), the thorns from the crown push into the skin and He begins bleeding profusely. The thorns also cause damage to the nerve that supplies the face, causing intense pain down His face and neck. As they mock Him, the soldiers also belittle Jesus by spitting on Him (Matthew 27:30). They rip the robe off Jesus' back and the bleeding starts afresh.

# THE SCIENCE OF CRUCIFIXION

Jesus' physical condition becomes critical. Due to severe blood loss without replacement, Jesus is undoubtedly in shock. As such, He is unable to carry the cross and Simon of Cyrene executes this task (Matthew 27:32).

# THE SCIENCE OF CRUCIFIXION

Crucifixion is quite possibly the most painful death ever invented by humankind. The English language derives the word “excruciating” from crucifixion, acknowledging it as a form of slow, painful suffering. Its punishment was reserved for slaves, foreigners, revolutionaries, and the vilest of criminals.

# THE SCIENCE OF CRUCIFIXION

The accused needed to be nailed to the patibulum (the horizontal crossbar) while lying down, so Jesus is thrown to the ground, reopening His wounds, grinding in dirt, and causing bleeding. They nail His “hands” to the patibulum. The Greek meaning of “hands” includes the wrist. It is more likely that the nails went through Jesus’ wrists. If the nails were driven into the hand, the weight of the arms would cause the nail to rip through the soft flesh.

# THE SCIENCE OF CRUCIFIXION

Therefore, the upper body would not be held to the cross. If placed in the wrist, the bones in the lower portion of the hand support the weight of the arms and the body remains nailed to the cross. The huge nail (seven to nine inches long) damages or severs the major nerve to the hand (the median nerve) upon impact. This causes continuous agonizing pain up both of Jesus' arms.

# THE SCIENCE OF CRUCIFIXION

Once the victim is secured, the guards lift the patibulum (the horizontal bar) and place it on the stipes (the vertical bar) already in the ground. As it is lifted, Jesus' full weight pulls down on His nailed wrists and His shoulders and elbows dislocate (Psalm 22:14). In this position, Jesus' arms stretch to a minimum of six inches longer than their original length.

# THE SCIENCE OF CRUCIFIXION

It is highly likely that Jesus' feet were nailed through the tops as often pictured. In this position (with the knees flexed at approximately 90 degrees), the weight of the body pushes down on the nails and the ankles support the weight. The nails would not rip through the soft tissue as would have occurred with the hands. Again, the nail would cause severe nerve damage (it severs the dorsal pedal artery of the foot) and acute pain.



# THE SCIENCE OF CRUCIFIXION

Normally, to breathe in, the diaphragm (the large muscle that separates the chest cavity from the abdominal cavity) must move down. This enlarges the chest cavity and air automatically moves into the lungs (inhalation). To exhale, the diaphragm rises up, which compresses the air in the lungs and forces the air out (exhalation). As Jesus hangs on the cross, the weight of His body pulls down on the diaphragm and the air moves into His lungs and remains there. Jesus must push up on His nailed feet (causing more pain) to exhale.

# THE SCIENCE OF CRUCIFIXION

In order to speak, air must pass over the vocal cords during exhalation. The Gospels note that Jesus spoke seven times from the cross. It is amazing that despite His pain, He pushes up to say “Forgive them” (Luke 23:34).

# THE SCIENCE OF CRUCIFIXION

The difficulty surrounding exhalation leads to a slow form of suffocation. Carbon dioxide builds up in the blood, resulting in a high level of carbonic acid in the blood. The body responds instinctively, triggering the desire to breathe. At the same time, the heart beats faster to circulate available oxygen. The decreased oxygen (due to the difficulty in exhaling) causes damage to the tissues and the capillaries begin leaking watery fluid from the blood into the tissues.

# THE SCIENCE OF CRUCIFIXION

This results in a build-up of fluid around the heart (pericardial effusion) and lungs (pleural effusion). The collapsing lungs, failing heart, dehydration, and the inability to get sufficient oxygen to the tissues essentially suffocate the victim. The decreased oxygen also damages the heart itself (myocardial infarction) which leads to cardiac arrest. In severe cases of cardiac stress, the heart can even burst, a process known as cardiac rupture. Jesus most likely died of a heart attack.

# DESIRE OF AGES, 772

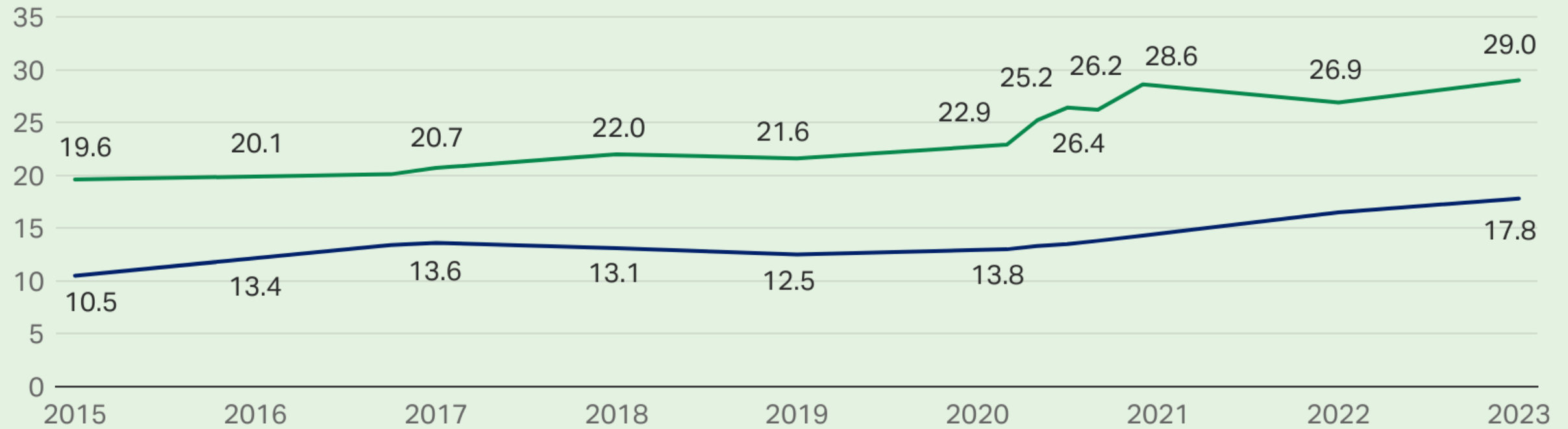
But it was not the spear thrust, it was not the pain of the cross, that caused the death of Jesus. That cry, uttered “with a loud voice” (Matthew 27:50; Luke 23:46), at the moment of death, the stream of blood and water that flowed from His side, declared that He died of a broken heart. His heart was broken by mental anguish. He was slain by the sin of the world.

# Rising Trends: Lifetime and Current Depression Rates

Has a doctor or nurse ever told you that you have depression?

Do you currently have or are you currently being treated for depression?

— % Yes, lifetime depression — % Yes, current depression



GALLUP®

# BECK'S COGNITIVE TRIAD

“No one values me”  
“People Ignore me all the time”

Negative Views  
about the World



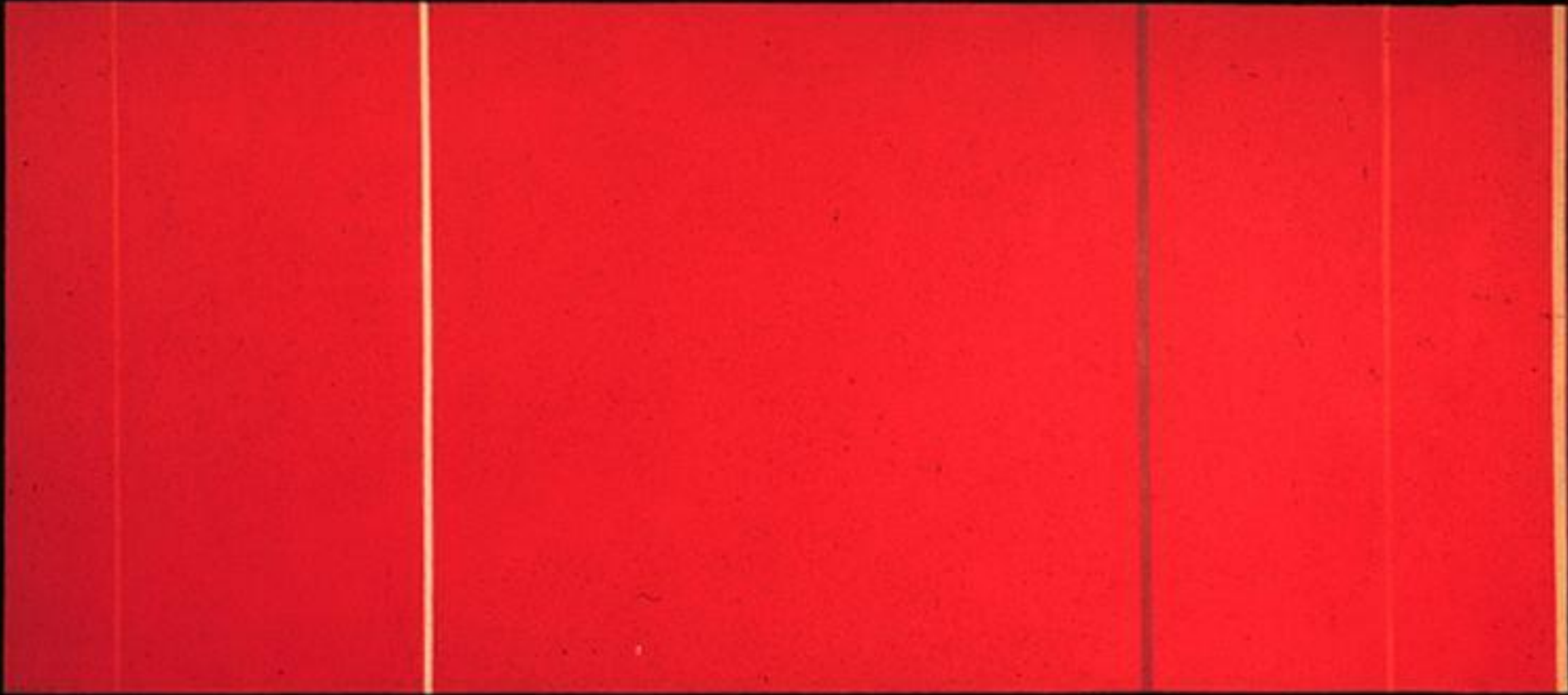
“I’m worthless and Ugly”  
“I wish I was different”

Negative Views  
about Yourself



Negative Views  
about the Future

“things will never change”  
“things can only get worse!”





## DESIRE OF AGES, 480

Every soul is as fully known to Jesus as if he were the only one for whom the Saviour died. The distress of every one touches His heart. The cry for aid reaches His ear... He cares for each one as if there were not another on the face of the earth.

# CHRIST'S OBJECT LESSONS, 196

The value of a soul, who can estimate? Would you know its worth, go to Gethsemane, and there watch with Christ through those hours of anguish, when He sweat as it were great drops of blood. Look upon the Saviour uplifted on the cross. Hear that despairing cry, "My God, My God, why hast Thou forsaken Me?" Mark 15:34.

# CHRIST'S OBJECT LESSONS, 196

Look upon the wounded head, the pierced side, the marred feet. Remember that Christ risked all. For our redemption, heaven itself was imperiled. At the foot of the cross, remembering that for one sinner Christ would have laid down His life, you may estimate the value of a soul.

## DESIRE OF AGES, 83

“It would be well for us to spend a thoughtful hour each day in contemplation of the life of Christ. We should take it point by point, and let the imagination grasp each scene, especially the closing ones. As we thus dwell upon His great sacrifice for us, our confidence in Him will be more constant, our love will be quickened, and we shall be more deeply imbued with His spirit. If we would be saved at last, we must learn the lesson of penitence and humiliation at the foot of the cross.”

make it stick



*The Science of Successful Learning*

Peter C. Brown

Henry L. Roediger III

Mark A. McDaniel

# EFFECTIVE WAYS OF LEARNING

- Rereading (Reviewing)
- Underlining
- Blocked Practice
- Massed Practice (Cramming)
- Passive reading
- Retrieval Practice (Testing)
- Spaced Practice
- Interleaving (Alternating)
- Elaboration
- Generation

# MAKE IT STICK, 3

Learning is deeper and more durable when it's effortful.  
Learning that's easy is like writing in sand, here today and gone tomorrow.



# POOJA AGARWAL, PHD

“By far the most effective way to learn is to use retrieval practice.”



# HOW TO USE RETRIEVAL PRACTICE TO IMPROVE LEARNING BY POOJA AGARWAL

“Retrieval practice” is a learning strategy where we focus on getting information out. Through the act of retrieval, or calling information to mind, our memory for that information is strengthened and forgetting is less likely to occur.

# HOW TO USE RETRIEVAL PRACTICE TO IMPROVE LEARNING BY POOJA AGARWAL

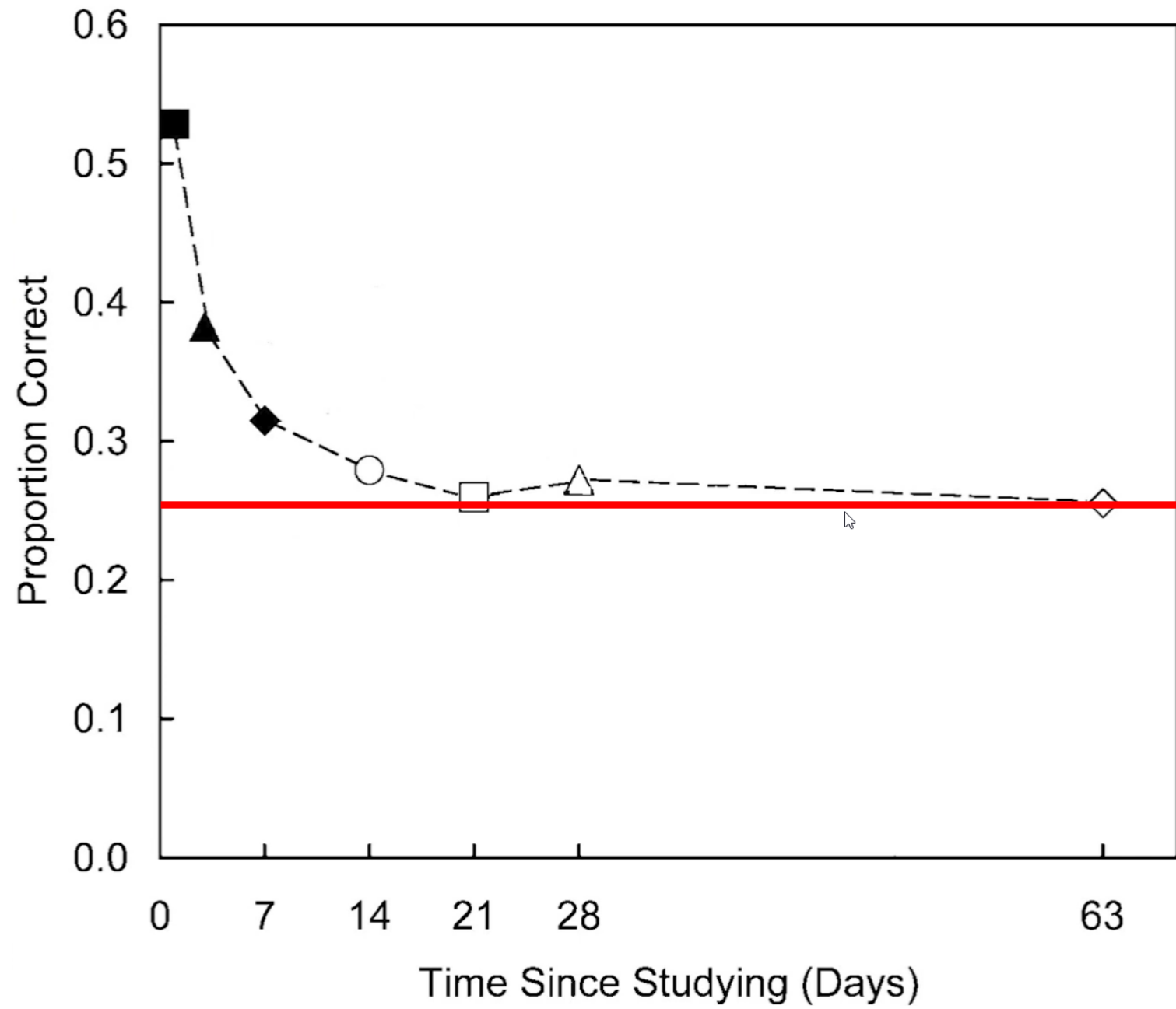
Retrieval practice doesn't just lead to memorization – it increases understanding. Because students have a better understanding of classroom material by having practiced using this information, students can adapt their knowledge to new situations, novel questions, and related contexts.

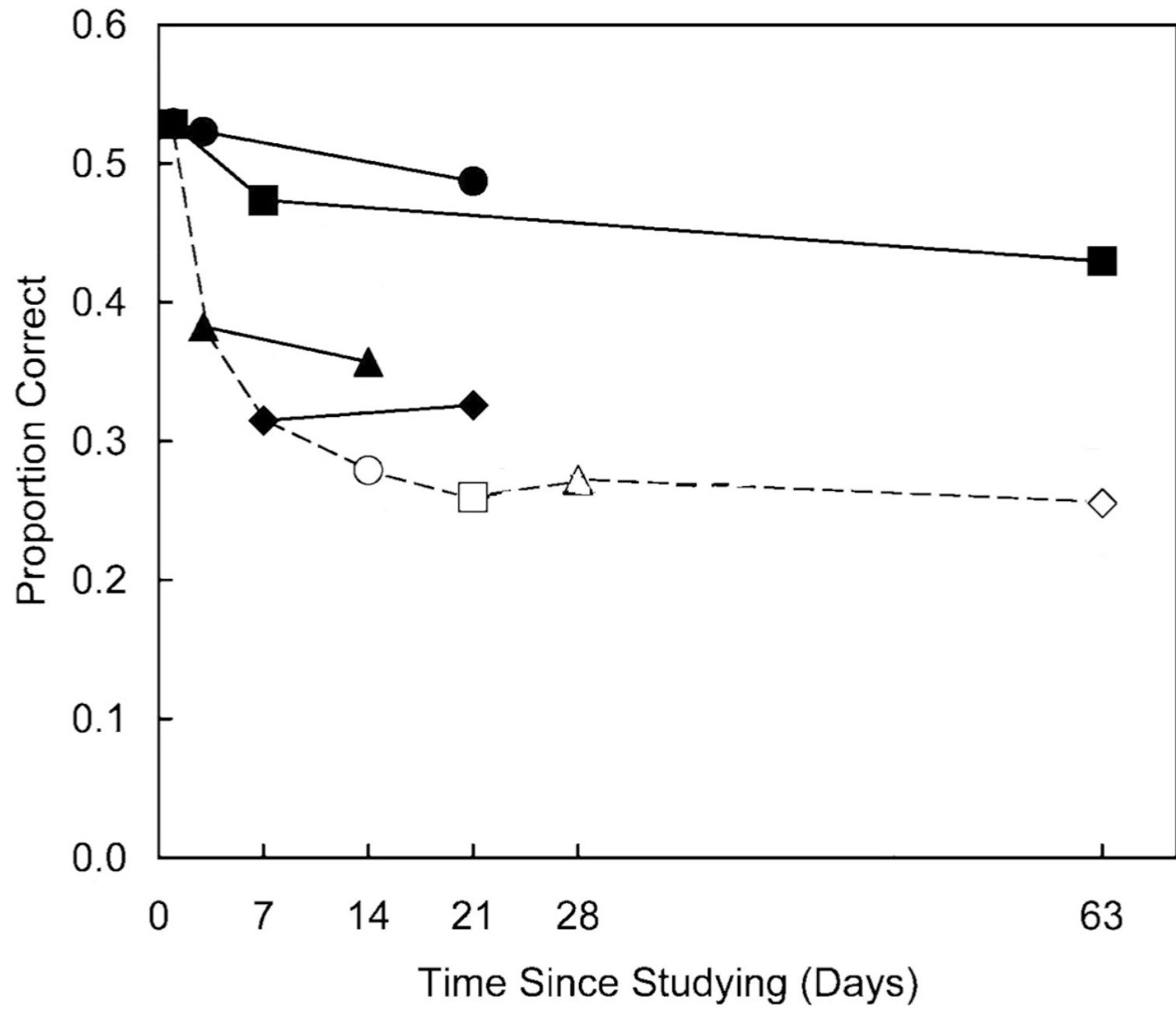
# MAKE IT STICK, 19

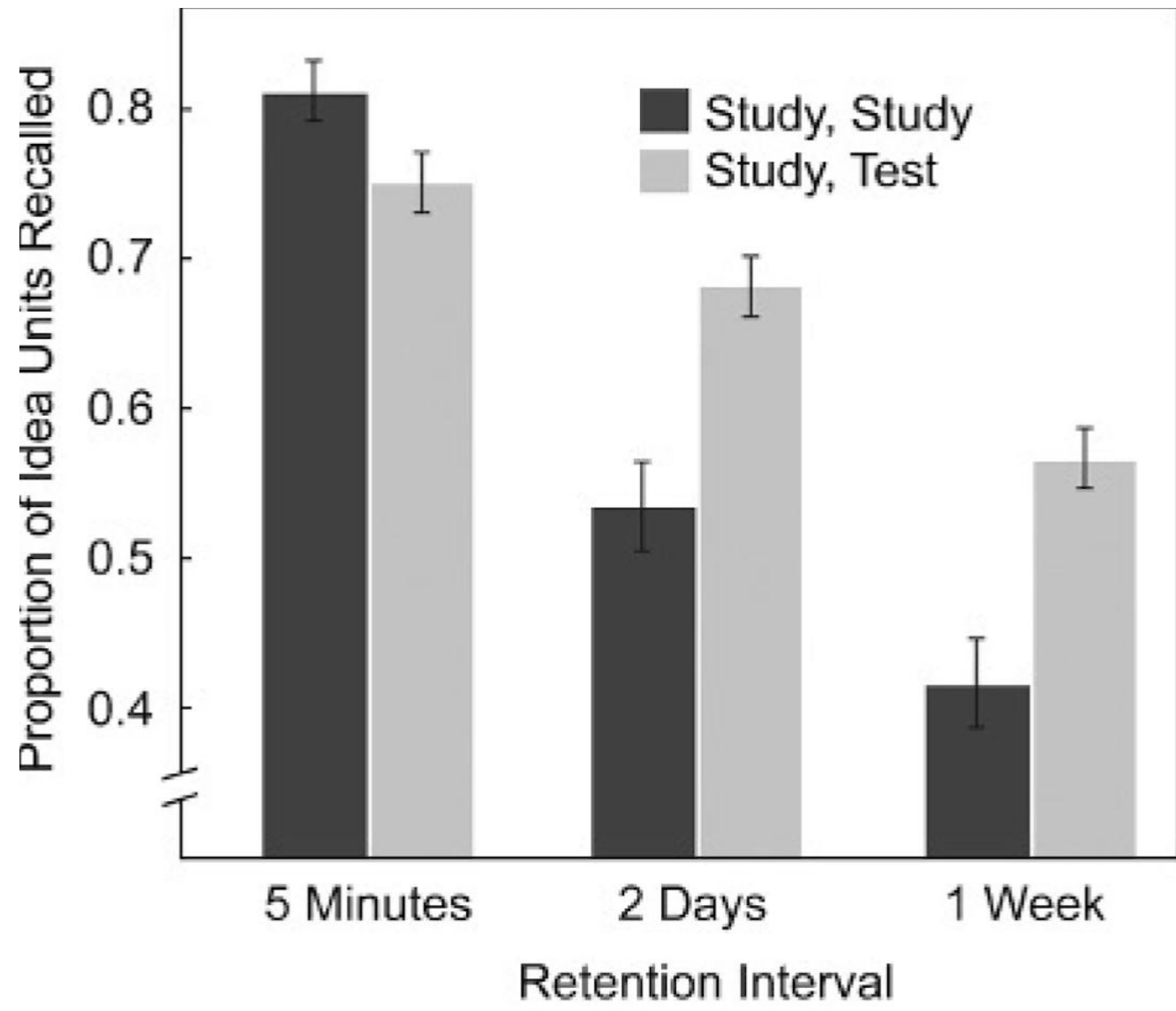
One of the most striking research findings is the power of active retrieval—testing—to strengthen memory, and that the more effortful the retrieval, the stronger the benefit.

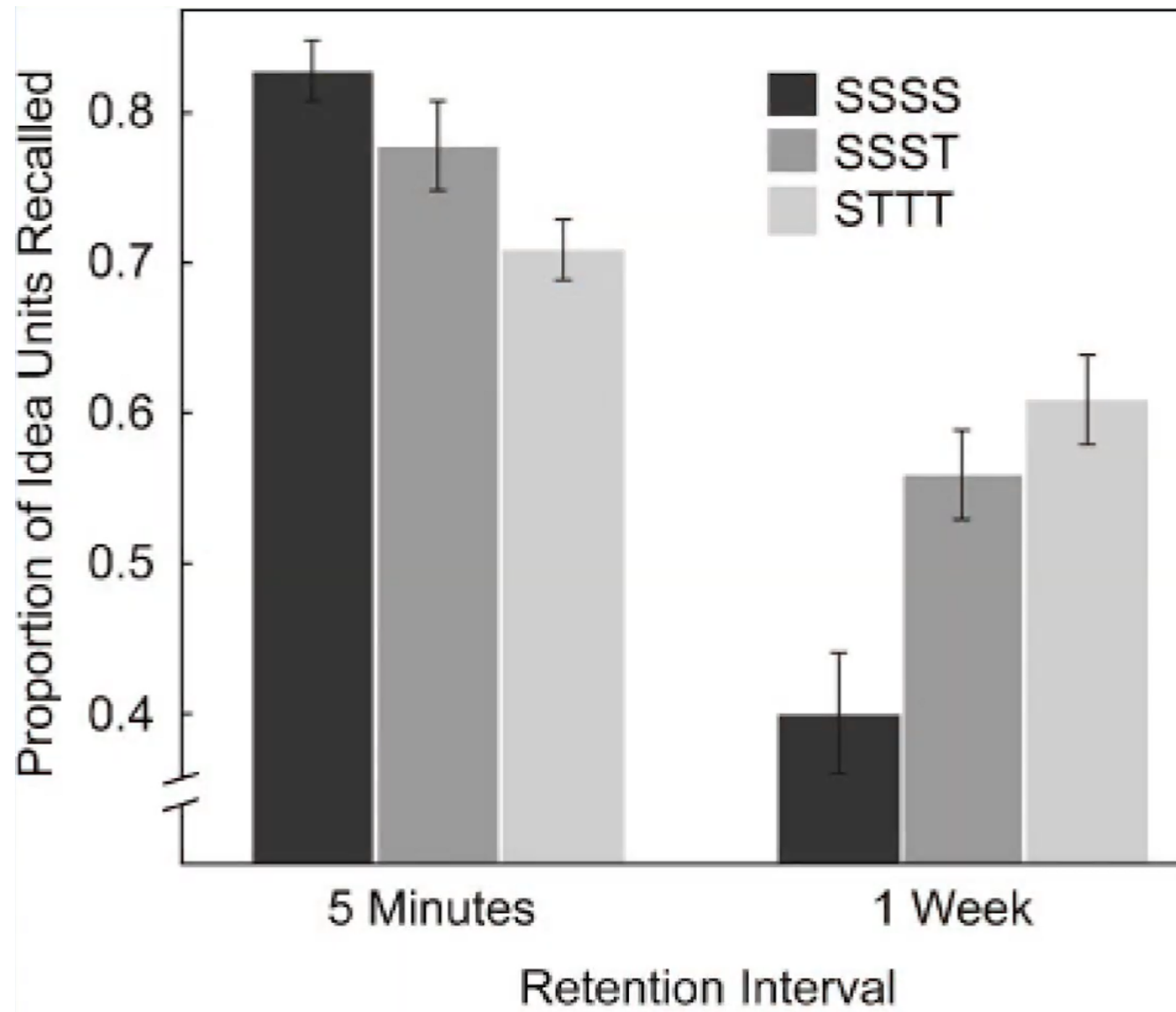
# MAKE IT STICK, 20

Recalling what you have learned causes your brain to reconsolidate the memory, which strengthens its connections to what you already know and makes it easier for you to recall in the future. In effect, retrieval—testing—interrupts forgetting.











# MAKE IT STICK, 43

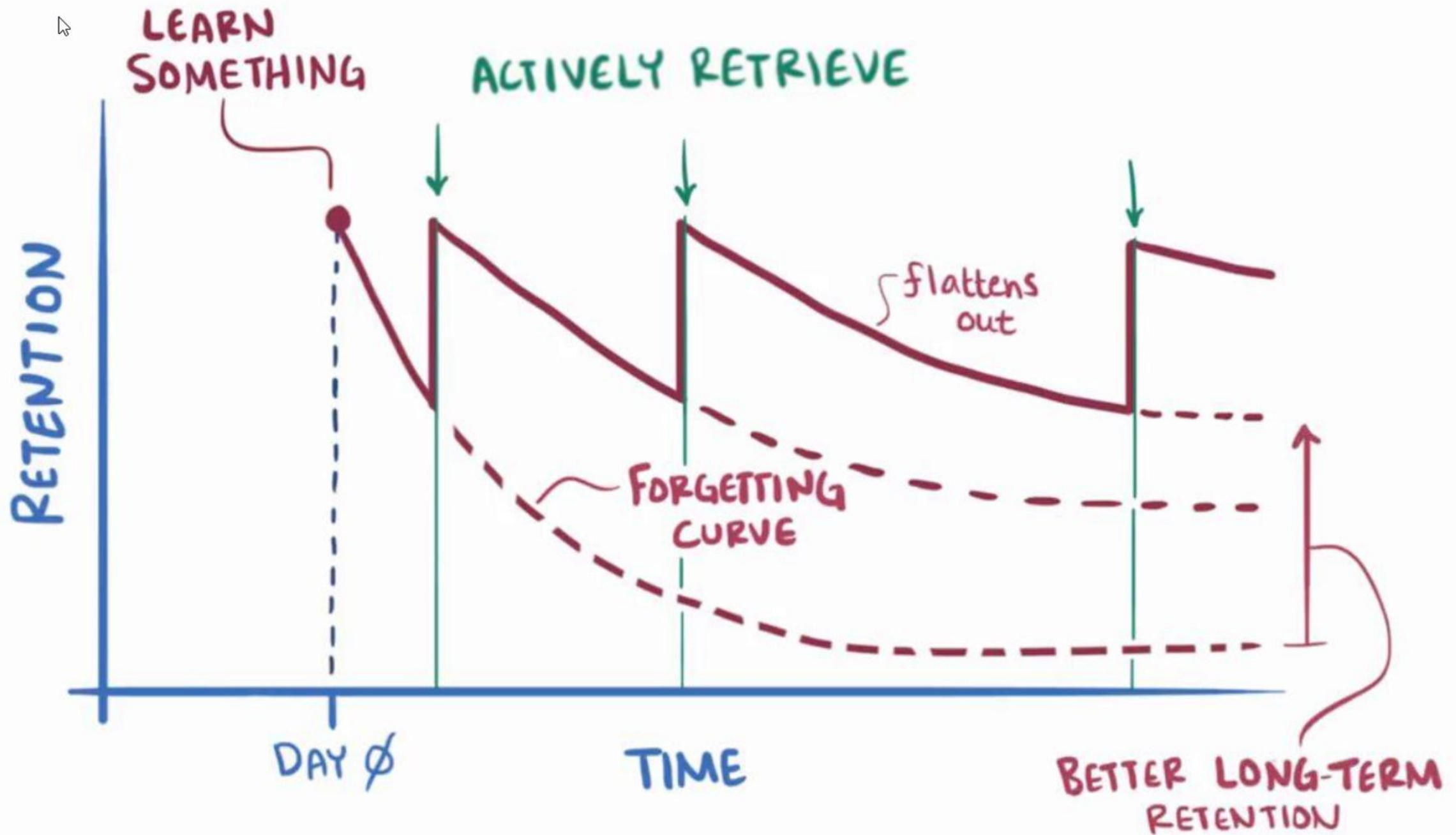
Repeated retrieval not only makes memories more durable but produces knowledge that can be retrieved more readily, in more varied settings, and applied to a wider variety of problems.

# UNCOMMON SENSE TEACHING, 151

When you first learn a concept, your brain is struggling to make the connections. It makes those connections any way it can. Often, the connections aren't necessarily the best configuration of neurons to capture the essence of what you're learning.

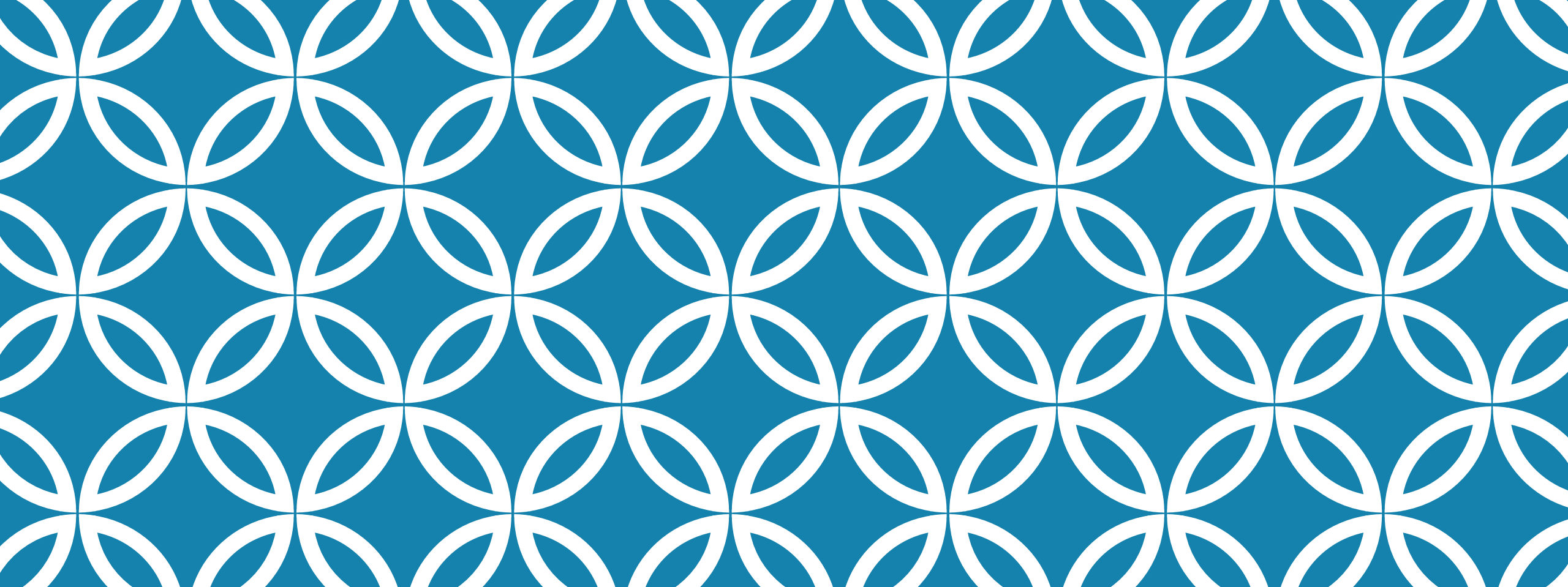
# UNCOMMON SENSE TEACHING, 151

The best way to allow those connections to rearrange themselves and make simpler, better, deeper, stronger connections is to take a break. Then return repeatedly to the concept. Returning over time is the essence of spaced repetition, and underlies the brain's ability to consolidate the information.



## DESIRE OF AGES, 83

“It would be well for us to spend a thoughtful hour each day in contemplation of the life of Christ. We should take it point by point, and let the imagination grasp each scene, especially the closing ones. As we thus dwell upon His great sacrifice for us, our confidence in Him will be more constant, our love will be quickened, and we shall be more deeply imbued with His spirit. If we would be saved at last, we must learn the lesson of penitence and humiliation at the foot of the cross.”



# THE HEART OF THE BEAST

GYC 2025

Next: Henry Molaison

## DESIRE OF AGES, 83

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Next: Tower of Hanoi





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# “PEAK” BY K. ANDERS ERICSSON

## Characteristics of Effective Practice vs. Naïve Practice

1. It has well-defined, specific goals.
2. It is focused.
3. It involves feedback.
4. It requires getting out of your comfort zone.

# “PEAK” BY K. ANDERS ERICSSON

The hallmark of [effective] practice is that you try to do something you cannot do—that takes you out of your comfort zone—and that you practice it over and over again, focusing on exactly how you are doing it, where you are falling short, and how you can get better.

# MIND, CHARACTER, AND PERSONALITY 1, 29

What gives the proper level to the human mind? It is the cross of Calvary. By looking unto Jesus, who is the Author and Finisher of our faith, all the desire for self-glorification is laid in the dust. There comes, as we see aright, a spirit of self-abasement that promotes lowliness and humbleness of mind

## TESTIMONIES TO MINISTERS AND GOSPEL WORKERS, 456

What is justification by faith? It is the work of God in laying the glory of man in the dust, and doing for man that which it is not in his power to do for himself.

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Private

Strictly Private and Confidential.

Bâle, April 24, 1883.

Dear Uriah:

At the present time by reason of my great prostration I am brought to look death in the face. There is one thing that troubles me which I lay before you in the form of a petition. It will fall to your lot to mention my death in the Review. I beg you to make the simplest and briefest statement possible and I solemnly charge you to exclude every word of eulogy. One third of a column of the Review will suffice for all that should <sup>be</sup> said.

I make this request because I fear that your kind regard for me will constrain <sup>you</sup> to say what I do not merit and what ought not to be said. My ~~best~~ <sup>best</sup> acts have had some trace of selfishness in them or have been lacking in love toward God ~~and~~ man. I beseech you therefore by all the affection which you bear me that you will regard this my earnest petition. And will you also transmit this as a private note to Bro. J. H. Waggoner as editor of the Signer that he may know my wishes and act accordingly?

Perhaps God will yet spare my life, but to human sight it seems much more likely that I shall soon be called hence.

I am Yours in Christ

J. N. Andrews

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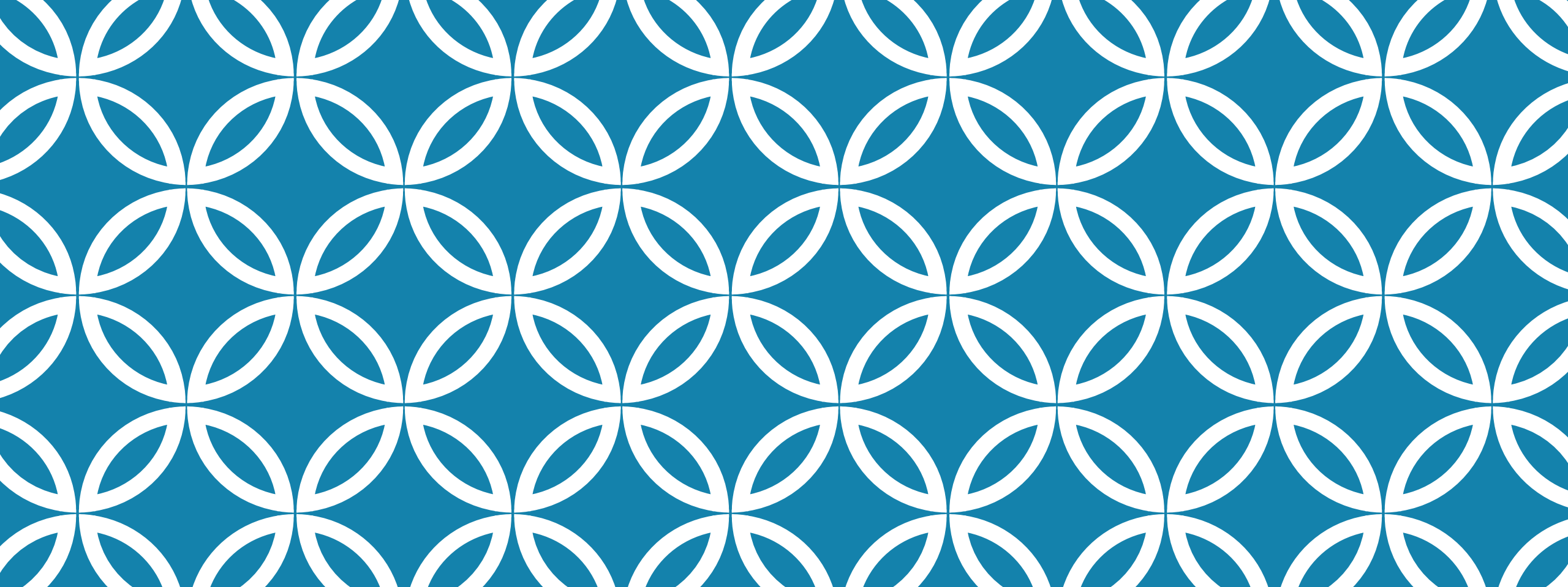
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# HEART OF THE BEAST PT. 2

GYC 2025

Next: Cross Thanks

# DESIRE OF AGES, 660

To the death of Christ we owe even this earthly life. The bread we eat is the purchase of His broken body. The water we drink is bought by His spilled blood. Never one, saint or sinner, eats his daily food, but he is nourished by the body and the blood of Christ. The cross of Calvary is stamped on every loaf. It is reflected in every water spring.

# EMMONS & MCCULLOUGH, 2003

## Two-step Process of Gratitude

- 1) “Recognizing that one has obtained a positive outcome.”
- 2) “Recognizing that there is an external source for this positive outcome.”

# SUMMER ALLEN, PH.D.

There are a number of cognitive factors that can influence how much gratitude a person feels in a certain situation. These include the perceived **intentions of the benefactor**, the apparent **cost to the benefactor**, the perceived **value of the gift/favor to the recipient**, whether the gift/favor was provided by **choice versus obligation**.



# 3 THINGS TO CONTEMPLATE

1. Circumstance
2. Cost on the Cross
3. Consequence

## 4 STYLES OF ATTACHMENT

1. **Anxious** people crave intimacy, are often preoccupied with their relationships, and tend to worry about their partner's ability to love them back (Fight Response).
2. **Avoidant** people equate intimacy with a loss of independence and constantly try to minimize closeness (Flight Response).

## 4 STYLES OF ATTACHMENT

3. The **disorganized** people long for intimacy, but at the same time fear it. They may seek comfort and reassurance from a relationship, but will quickly withdraw again (Freeze Response).

# TORBEN BERGLAND (ADVENTIST REVIEW MAR 2023)

## **The Securely Attached People**

Their primary strategy when distressed is to seek closeness to an attachment figure.

They are typically trusting of others and feel assured that they are not alone in this world. Thus, they are well equipped to manage closeness and distance in day-to-day life.

# ATTACHMENT IN ADULthood (MIKULINER AND SHAVER)

Secure people openly disclose their personal thoughts and feelings to relationship partners (even if they lead to disagreements), expose their vulnerability and need for support even if it leaves them open to disapproval, open their cognitive schemas to new information even though it entails uncertainty and reorganization, explore challenging and changing life circumstances and new experiences, and commit themselves to the personal choices they make in their career and close relationships. They make leaps of trust and faith.