

<DevSum>

Technical Neglect

Kevlin Henney

active
SOLUTION

Agria
Djurförsäkring

VONAGE
Part of Ericsson

RaySearch
Laboratories

Duende

bulbul

SOFTBONIC

Polisen

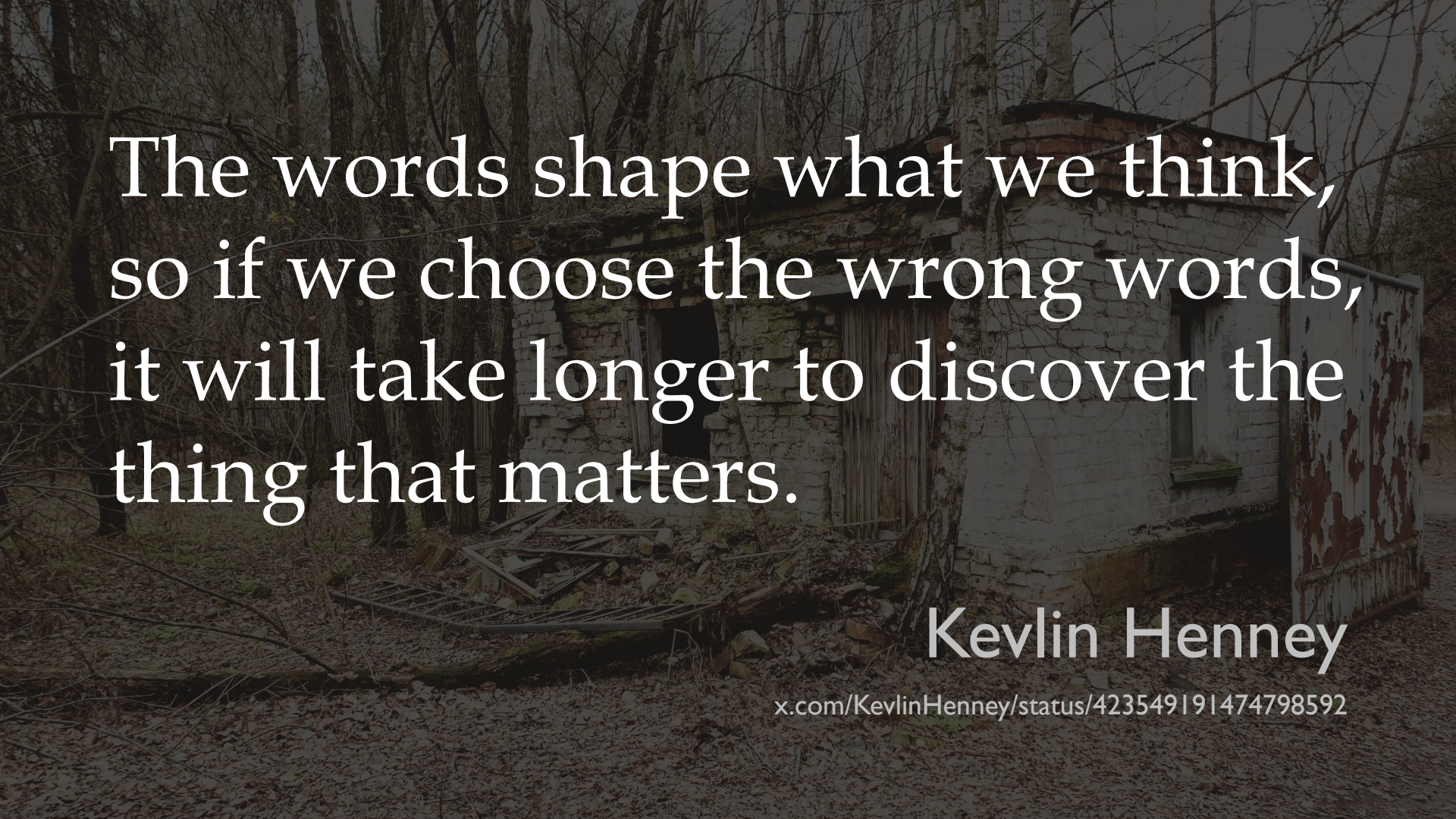
Technical Neglect

Kevlin Henney





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[threads.net/@kevlin.henney](https://www.threads.net/@kevlin.henney)
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sessionize.com/kevlin
about.me/kevlin



The words shape what we think,
so if we choose the wrong words,
it will take longer to discover the
thing that matters.

Kevlin Henney

x.com/KevlinHenney/status/423549191474798592

A photograph of a dilapidated, abandoned building, possibly a small house or shed, situated in a wooded area. The building is constructed of light-colored stone or brick, with significant structural damage and crumbling masonry. The roof is partially collapsed, and debris is scattered on the ground in front of it. A large, rusted metal door stands open on the right side. The surrounding area is filled with bare trees and fallen leaves, suggesting a late autumn or winter setting. The word "cause" is overlaid in large, white, lowercase letters across the center of the image.

cause

A photograph of a small, abandoned building with white-painted brick walls, situated in a wooded area. The building is in a state of significant disrepair, with missing roof tiles, crumbling mortar, and a partially collapsed roofline. A large, rusted metal door stands open on the right side. The surrounding environment is a dense forest of bare trees, and the ground is covered in fallen leaves and debris. The word "effect" is written in a large, white, serif font across the center of the image.

effect

A photograph of a dilapidated, abandoned building in a wooded area. The building is constructed of light-colored stone or concrete blocks, with significant structural damage and crumbling masonry. The roof is partially collapsed, and the walls are crumbling. A large, rusted metal door stands open on the right side. The building is surrounded by bare trees and a ground covered in fallen leaves and debris. The text "technical debt" is overlaid in a large, white, serif font across the center of the image.


technical
debt

The background image shows a small, single-story building in a state of severe disrepair. The structure is built with light-colored bricks or blocks, many of which are missing or crumbling, revealing a darker interior. The roof is partially collapsed, with exposed wooden beams and debris. A large, rusted metal door stands open on the right side. The building is surrounded by bare, leafless trees, and the ground is covered in a thick layer of fallen leaves and twigs, suggesting a late autumn or winter setting. The overall atmosphere is one of abandonment and decay.

technical
neglect





A dark, moody background image of a beach. In the foreground, a piece of weathered driftwood lies on the sand, partially covered by dry grass. The background shows the ocean and a dark sky. The overall tone is somber and contemplative.

As an evolving program is continually changed, its complexity, reflecting deteriorating structure, increases unless work is done to maintain or reduce it.

Meir M Lehman

“Programs, Life Cycles, and Laws of Software Evolution”

A black and white photograph of a small, weathered boat on a grassy beach with the ocean in the background. The boat is tilted and appears to be in poor condition, with some parts missing or broken. The background shows a calm sea and a clear sky.

deteriorating structure

Meir M Lehman

“Programs, Life Cycles, and Laws of Software Evolution”

A black and white photograph of a beach. In the foreground, a small, light-colored boat is partially buried in the sand and grass. The ocean stretches across the middle ground, meeting a dark, overcast sky at the horizon. The overall mood is somber and reflective.

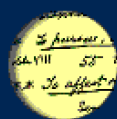
work is done to maintain or reduce it

Meir M Lehman

“Programs, Life Cycles, and Laws of Software Evolution”

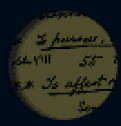
A black and white photograph of a beach scene. In the foreground, a piece of weathered driftwood lies on the sand, partially covered by sparse, dry grass. The middle ground shows the calm surface of the ocean meeting the shore. The background is a clear, light-colored sky. The word "maintenance" is overlaid in a large, white, serif font across the center of the image.

maintenance



Oxford English Dictionary

OXFORD UNIVERSITY PRESS



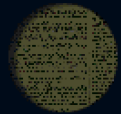
Oxford



English

metaphor

Dictionary

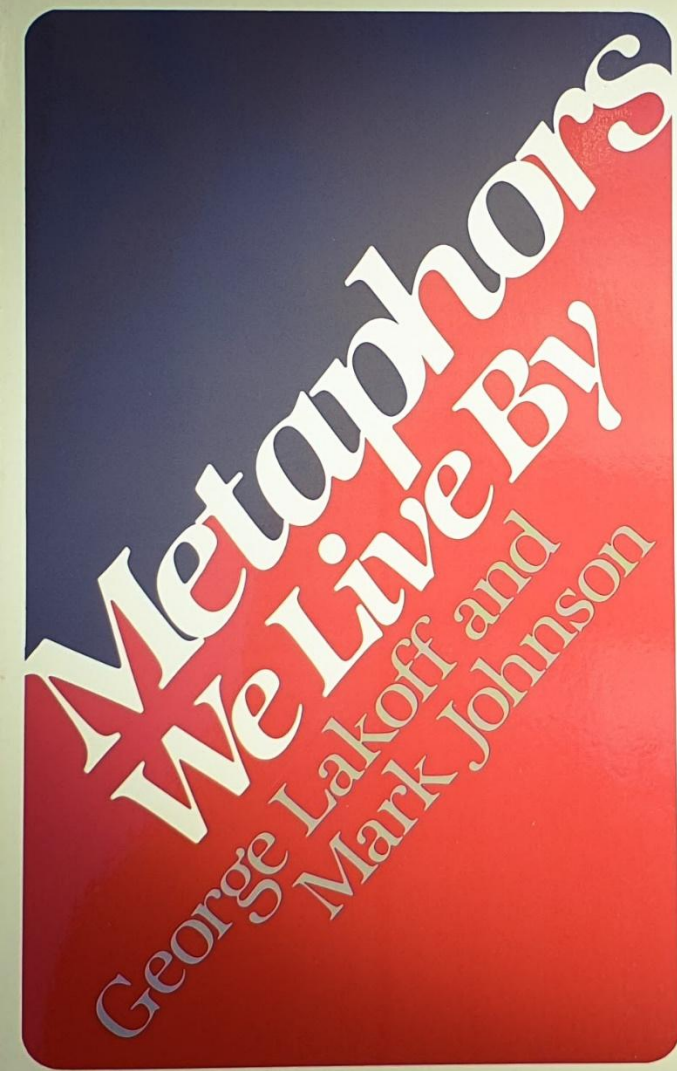


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The figure of speech in which a name or descriptive term is transferred to some object different from, but analogous to, that to which it is properly applicable.

μεταφορα

transfer



The essence of metaphor
is understanding and
experiencing one kind of
thing in terms of another.

TIME IS MONEY

ARGUMENT IS WAR

ARGUMENTS ARE BUILDINGS

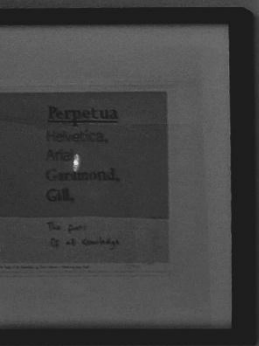
HAPPY IS UP; SAD IS DOWN

LOVE IS A JOURNEY



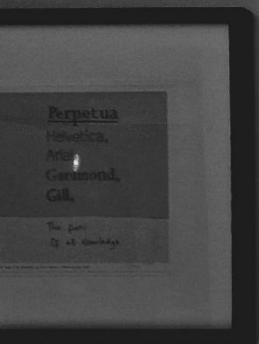






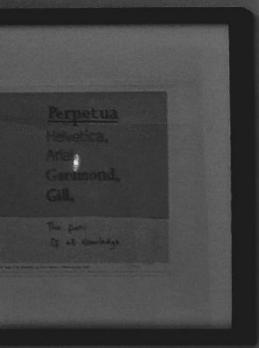
View





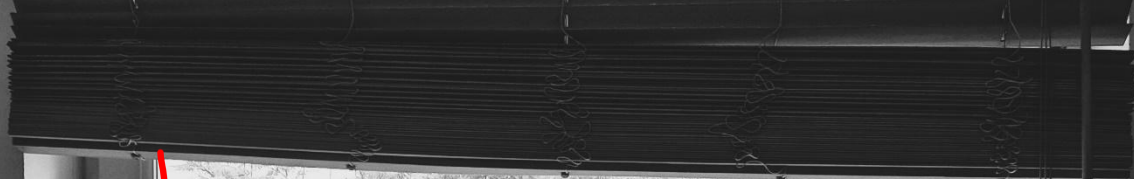
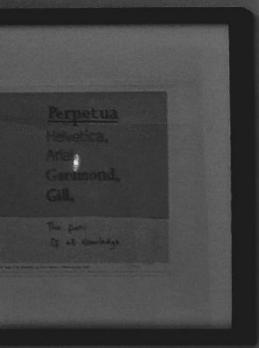
Motel





Close





Resize?



Blind?



It will never map its target perfectly
— a metaphor is a conceit not an
identity.

Kevlin Henney

“On Exactitude in Technical Debt”

oreilly.com/radar/on-exactitude-in-technical-debt

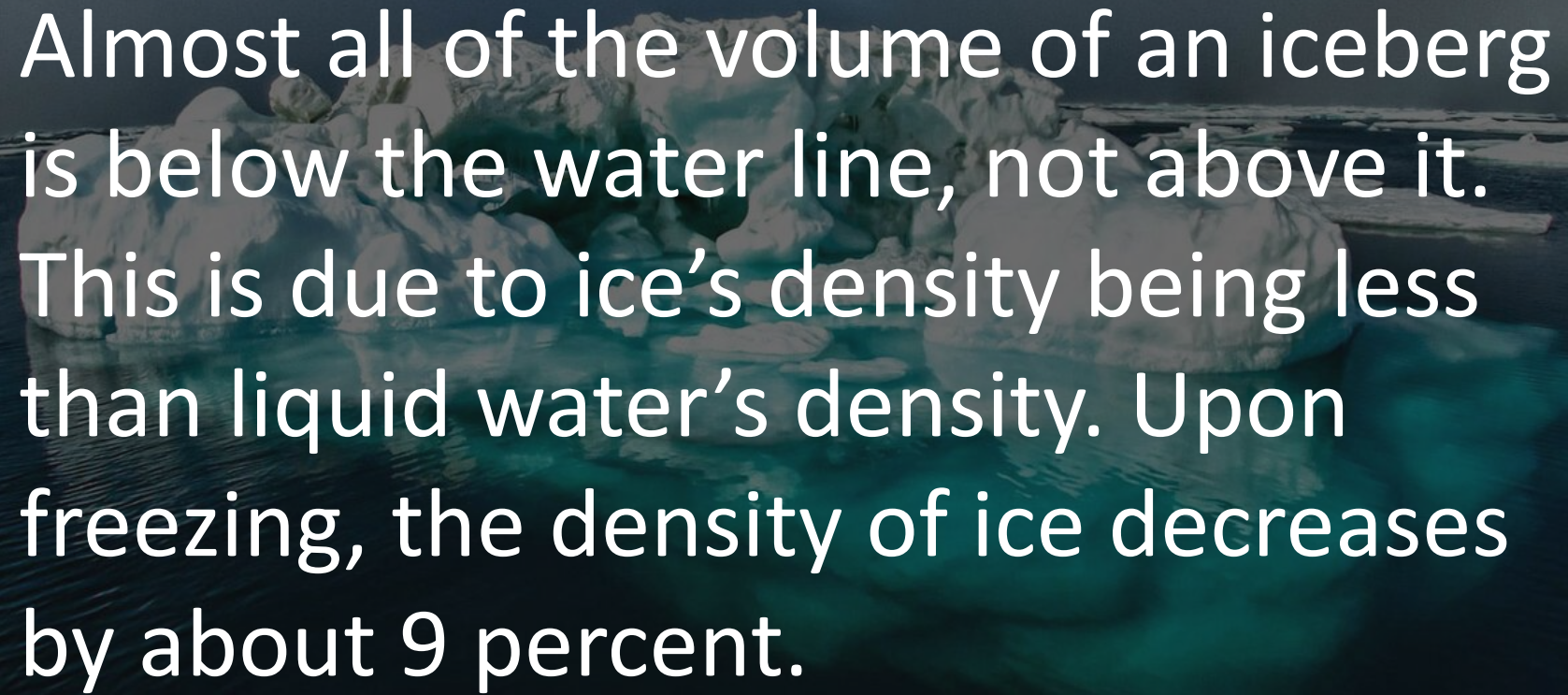
To be considered good, a metaphor has to offer a number of points of useful correspondence with what is being described.

Kevlin Henney

“On Exactitude in Technical Debt”

oreilly.com/radar/on-exactitude-in-technical-debt



A large iceberg floats in the ocean, with its massive, jagged base submerged below the water line and only a smaller, more rounded portion visible above. The water is dark blue, and the sky is overcast. The text is overlaid on the image in a white, sans-serif font.

Almost all of the volume of an iceberg is below the water line, not above it. This is due to ice's density being less than liquid water's density. Upon freezing, the density of ice decreases by about 9 percent.

The Iceberg Illusion

Success
is an
iceberg

SUCCESS!

WHAT PEOPLE
SEE

Persistence



Failure



Sacrifice



Disappointment



WHAT PEOPLE
DON'T SEE

Dedication



Hard work



Good habits



@sylvia duckworth

Environmental setting:
Structure and carer
interactions

Behaviour and emotions

Surface

Beliefs: My kids are waiting for me at the school gates. I have
got to collect them

Drug related issues: Drug interactions, side effects

Mental health status: Anxiety, mood, psychosis

Mental health status: Anxiety, mood, psychosis

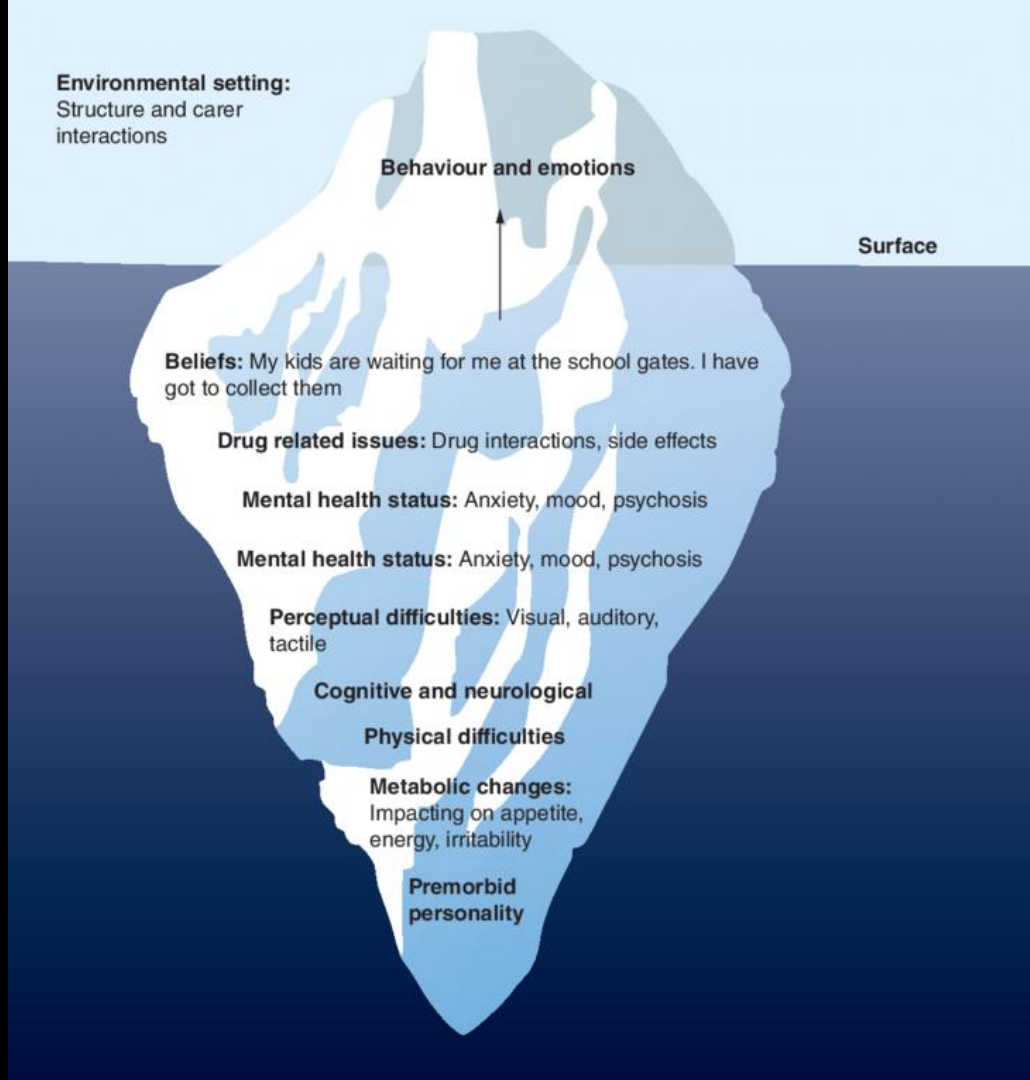
Perceptual difficulties: Visual, auditory,
tactile

Cognitive and neurological

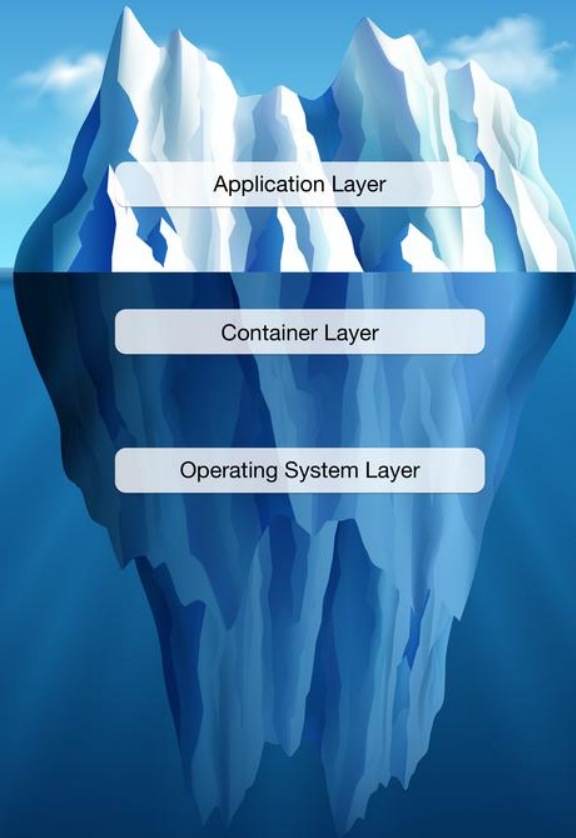
Physical difficulties

Metabolic changes:
Impacting on appetite,
energy, irritability

**Premorbid
personality**



The DevSecOps Iceberg

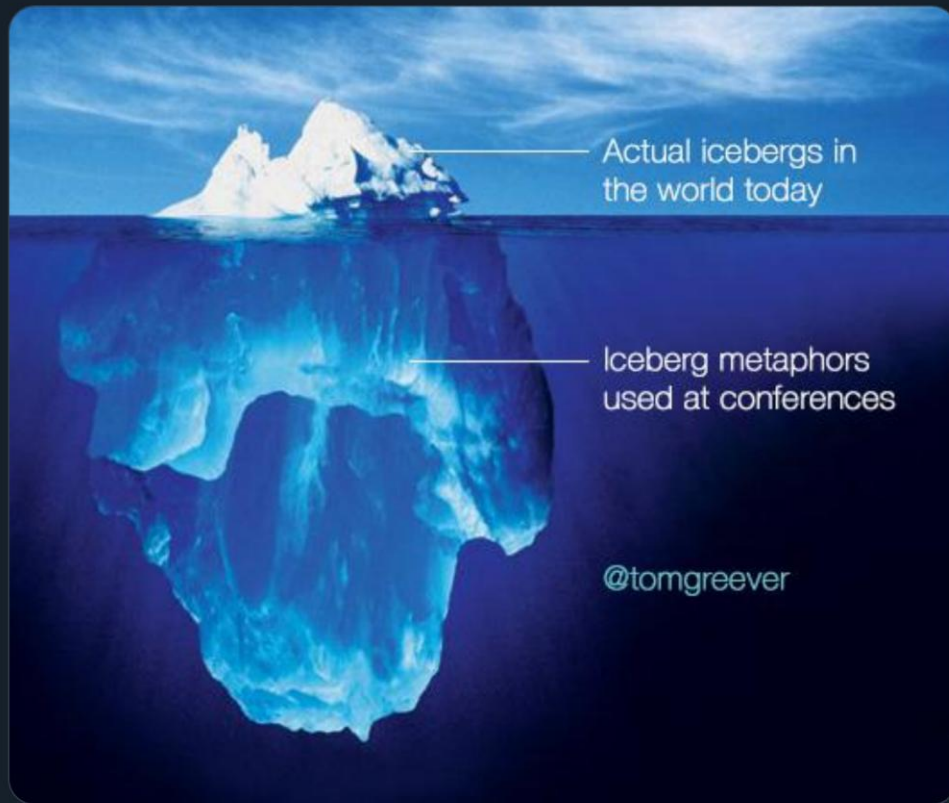




tomgreever

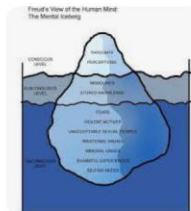
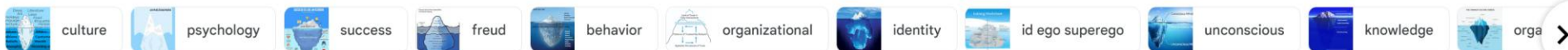
@tomgreever

There are more iceberg metaphors than there are actual icebergs.

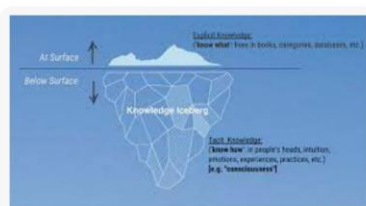


12:03 AM · Jun 2, 2015

x.com/tomgreever/status/605494853254811648



Mike Cardus
Icebergs and how met...



David Loewen
tip of the icebergs": Clichéd metaphors ...



R⁶ ResearchGate
An iceberg metaphor for ...



Altair
Motivational Iceberg Poster ...



R⁶ ResearchGate
The iceberg metaphor | Down...



Simply Psychology
Freud's Theory of the Unconscious Mind ...



Psychology Today
An Iceberg Is Not a G...



American Institute for Stuttering
Stuttering metaphors explained



University Blogs - Missouri State University
Idiom: Tip of the Iceberg ...



Adobe Stock
Iceberg Metaphor Images – Browse 1,448 ...



David Loewen
tip of the icebergs": Clichéd ...



theLaBB
The Iceberg Illusion & Why Mistakes ...



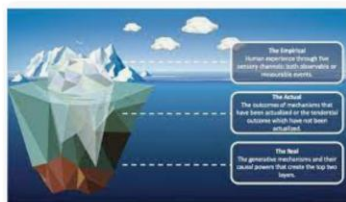
Elena Dasgupta-Tsinikas, LCSW
The Iceberg: A Metaphor for Healing



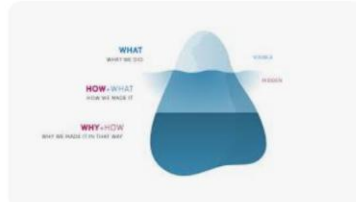
Simply Psychology
Freud's Theory of th...



VectorStock
Personal iceberg metaphor Royal...



R⁶ ResearchGate
An Iceberg metaphor explaining the ...



Medium
The Iceberg of How. A model to help ...



R⁶ ResearchGate
iceberg analogy. Adapted wi...

Another quality of a good metaphor is that it should not have too many obvious points of conflict.

Kevlin Henney

“On Exactitude in Technical Debt”

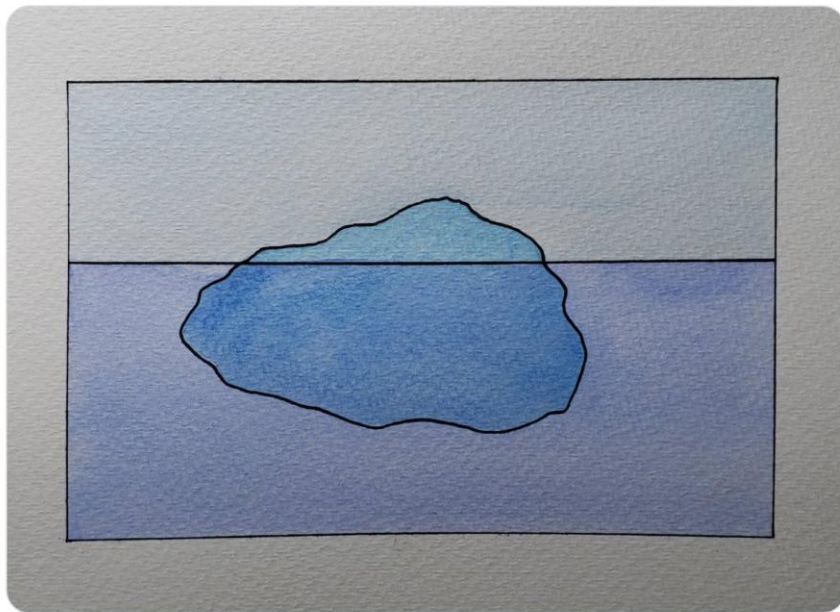
oreilly.com/radar/on-exactitude-in-technical-debt

Megan Thompson-Munson

@GlacialMeg

Today I channeled my energy into this very unofficial but passionate petition for scientists to start drawing icebergs in their stable orientations. I went to the trouble of painting a stable iceberg with my watercolors, so plz hear me out.

(1/4)



1:18 AM · Feb 19, 2021

x.com/GlacialMeg/status/1362557149147058178

280

4.3K

19K

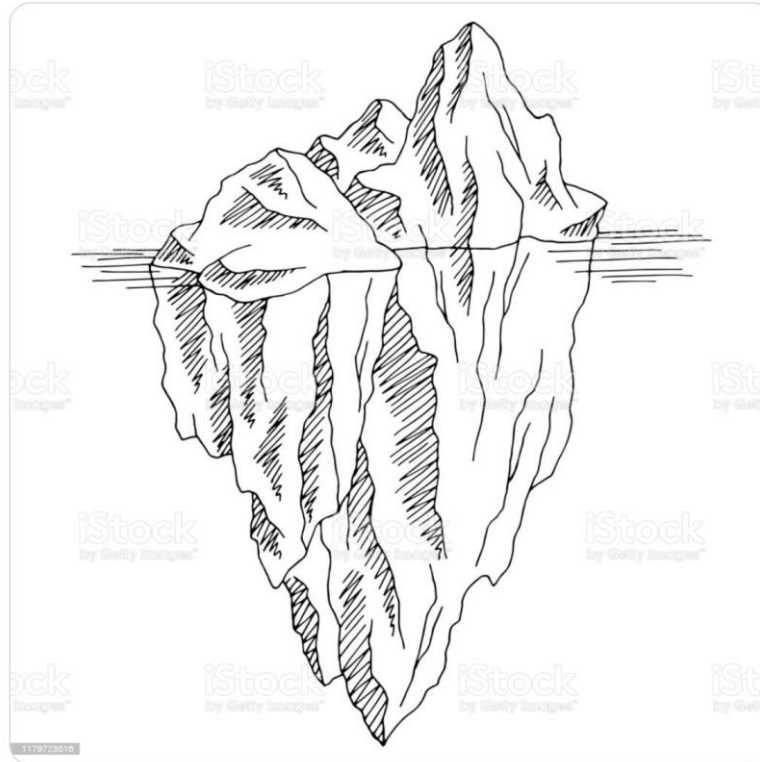
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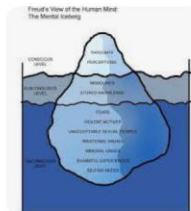
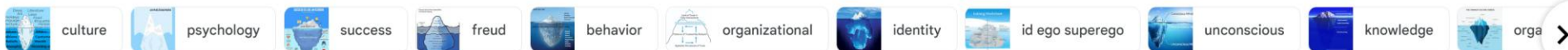


Megan Thompson-Munson
@GlacialMeg

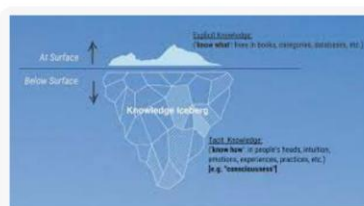
The "classic" image of an iceberg is usually some kind of ice cream cone-shaped hunk of ice with 90% of it below the water's surface and 10% above (source: every iceberg stock photo on the internet).

(2/4)





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Icebergs and how met...



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tip of the icebergs": Clichéd metaphors ...



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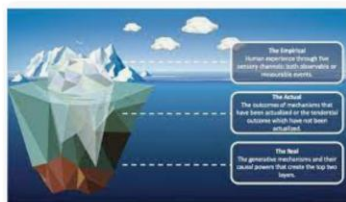
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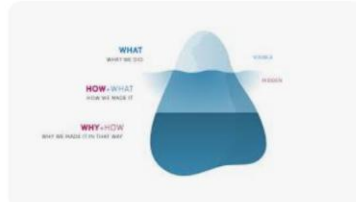
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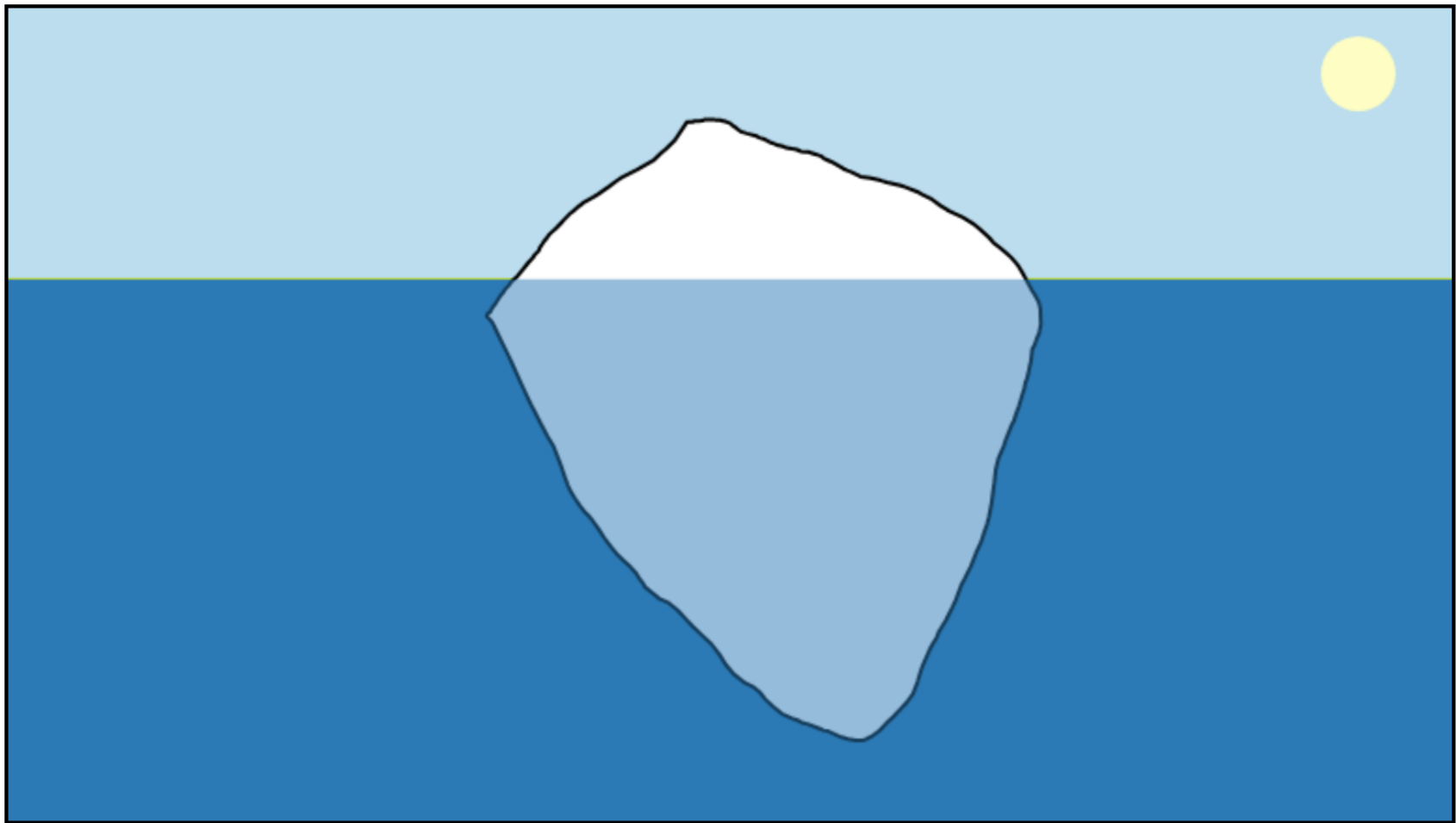
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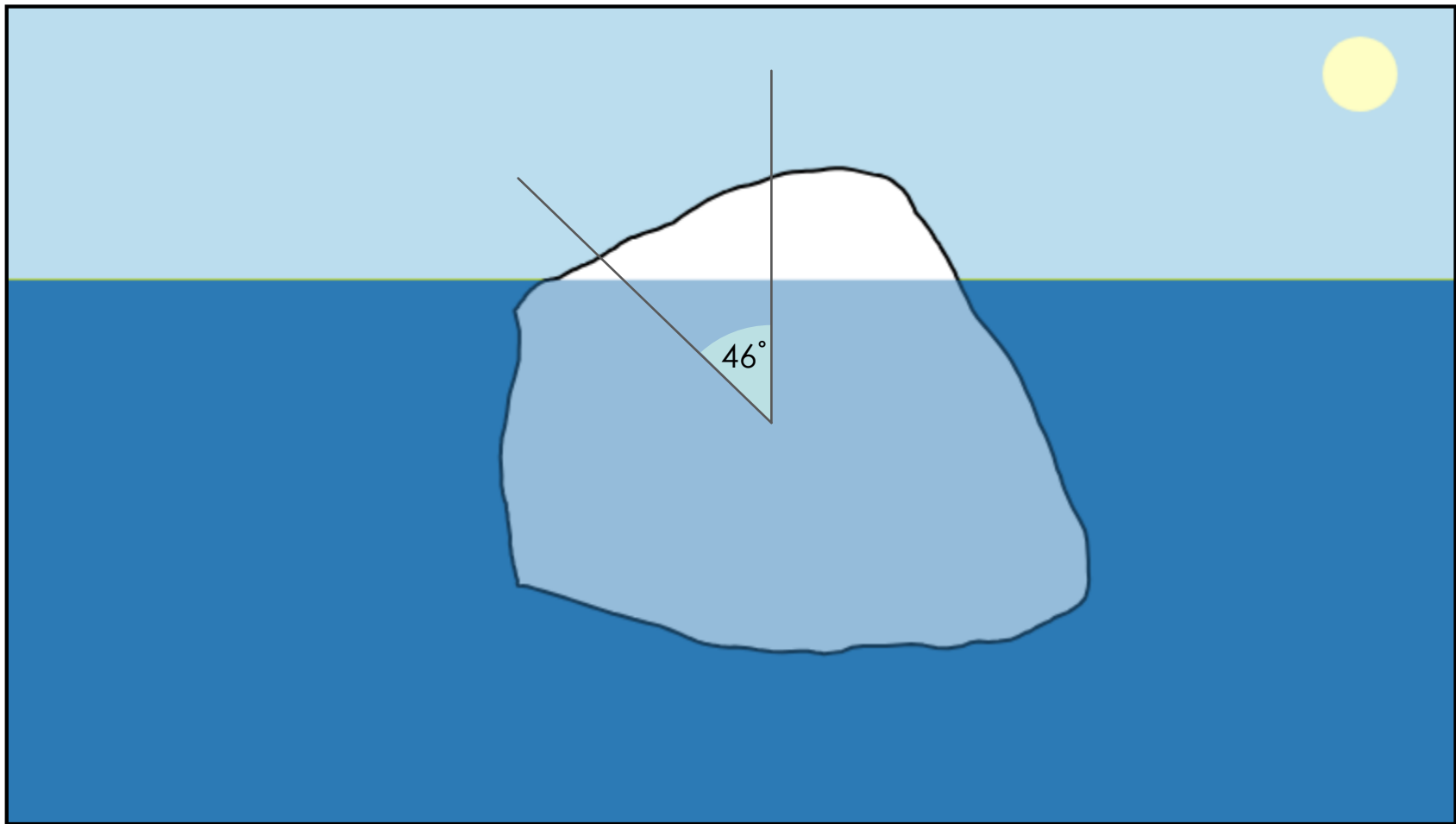


Medium
The Iceberg of How. A model to help ...



R⁶ ResearchGate
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The third quality of a metaphor that makes it effective is familiarity to its audience.

Kevlin Henney

“On Exactitude in Technical Debt”

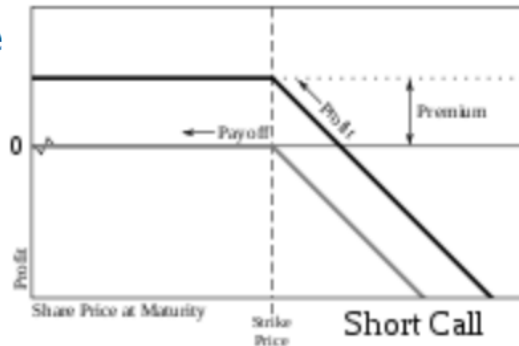
oreilly.com/radar/on-exactitude-in-technical-debt

Bad code isn't Technical Debt, it's an unhedged Call Option

Jul 23rd, 2010 by [steve.freeman](#).

I'd been meaning to write this up for a while, and now Nat Pryce has written up the [140 character version](#).

This is all [Chris Matts](#)' idea. He realised that the problem with the "Technical Debt" metaphor is that for managers debt can be a good thing. Executives can be required to take on more debt because it makes the finances work better, it might even be encouraged by tax breaks. This is not the same debt as your personal credit card. Chris came up with a better metaphor, the *Call Option*.

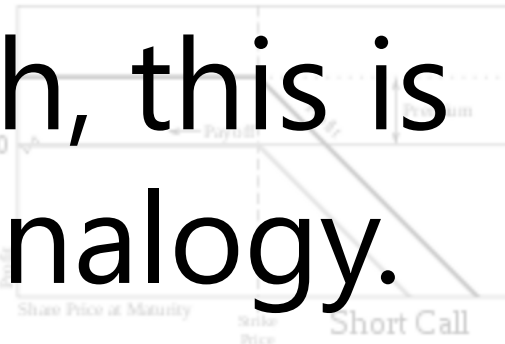


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legacy

✓ PRONUNCIATION ✓ SPELLINGS ✓ ETYMOLOGY ✓ QUOTATIONS

Find

legacy, *n.*legacy, *v.*legal, *a.*

legalese

legalism

legalist

legalitarian, *a.*

legality

legalize, *v.*legalized, *ppl. a.*legally, *adv.*

legalness

legantine, *a.*

legar

legatarian, *a.*legatary, *a. and n.*legate, *n.*¹

Children of alumni were over 2½ times as likely to be admitted as those without such a connection. **2002** *Philadelphia* Oct. 4/2 'Being a legacy and having dad donate a million bucks isn't even a guarantee.' So, how *do* you get into Penn?

Draft partial entry September 2007

► *attrib.* Chiefly *Computing*. Designating software or hardware which, although outdated or limiting, is an integral part of a computer system and difficult to replace. Also in extended use.

1989 *Industry Week* 20 Nov. 46 A migration mechanism enabling the automated conversion of legacy databases and application systems to the integration platform. **1993** *Computer Weekly* 14 Oct. 34/6 Too many IT people ossify with the IT they are comfortable with—they become legacy people, and that's dangerous. **1998** *Byte* (U.K. ed.) June 89/1 The project consists of about 25 legacy FORTRAN codes glued together by Perl. **2005** *Computer Weekly* 29 Nov. 26/1 IT organisations should not dismiss these applications as useless legacy artifacts, destined for rip-and-replace.

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X SORTED BY DATE

Back

Lost for words

Copy

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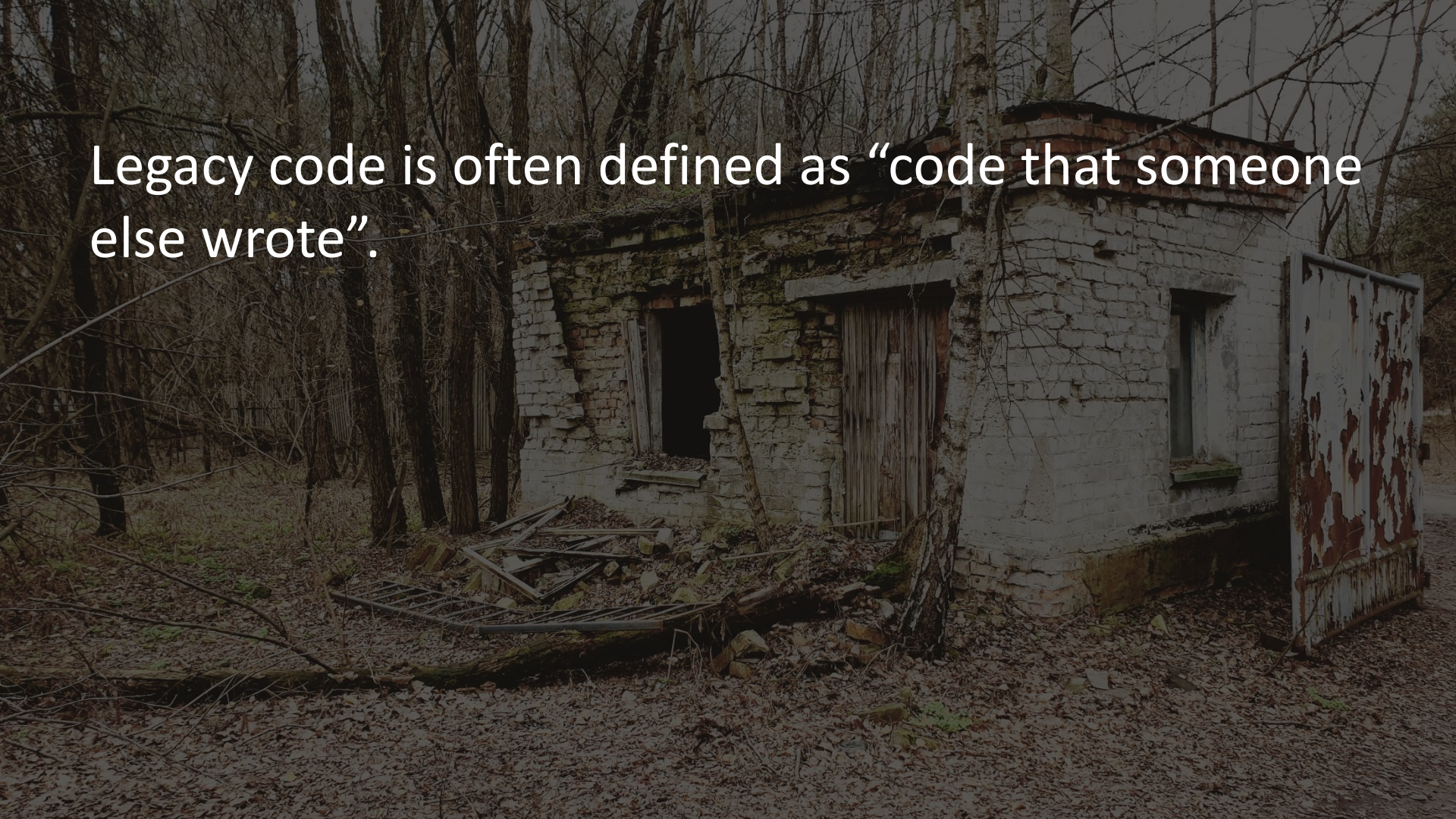
Mark

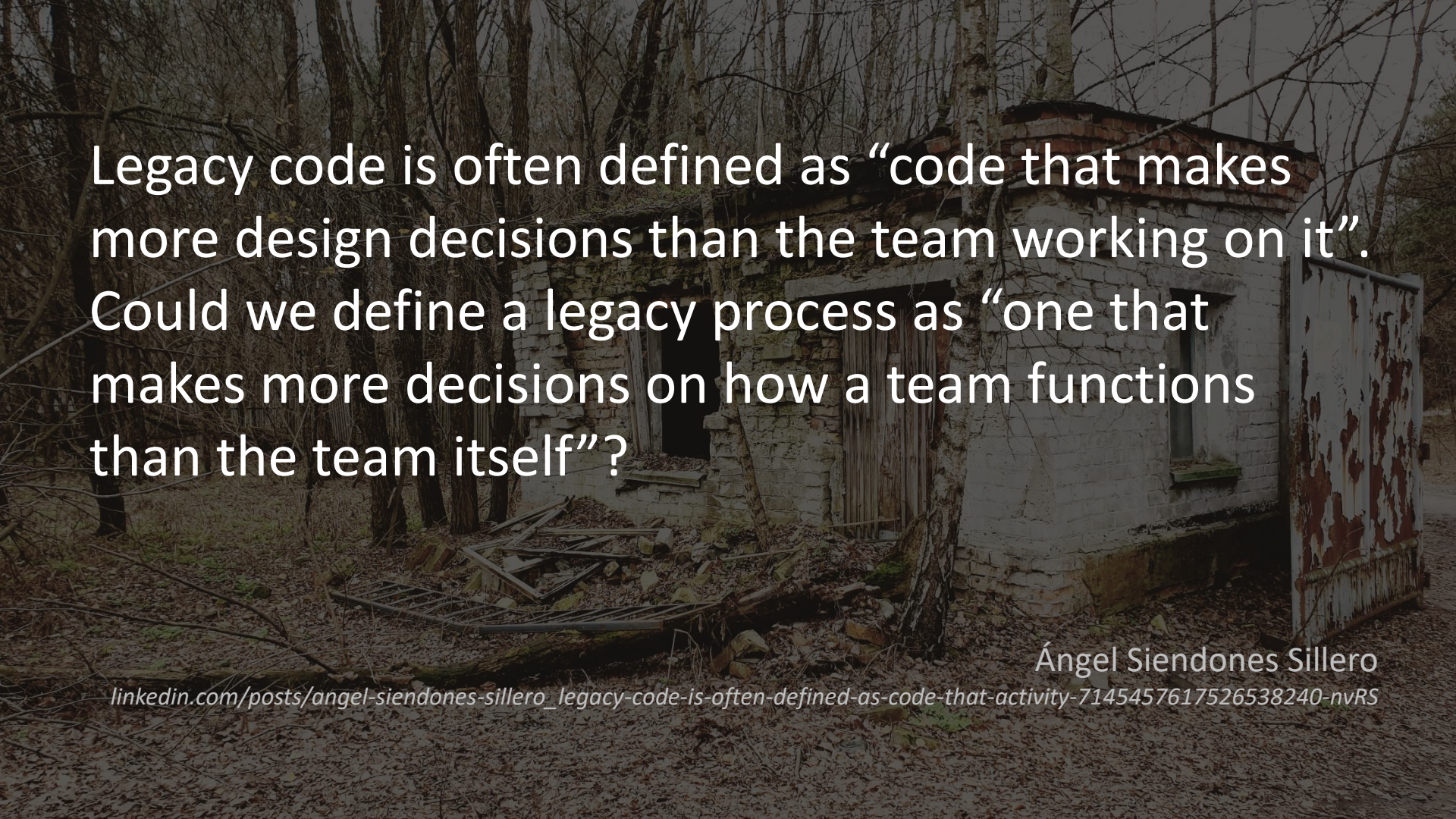
Find in entry

↑

↓

Legacy code is often defined as “code that someone else wrote”.





Legacy code is often defined as “code that makes more design decisions than the team working on it”. Could we define a legacy process as “one that makes more decisions on how a team functions than the team itself”?

Ángel Siendones Sillero

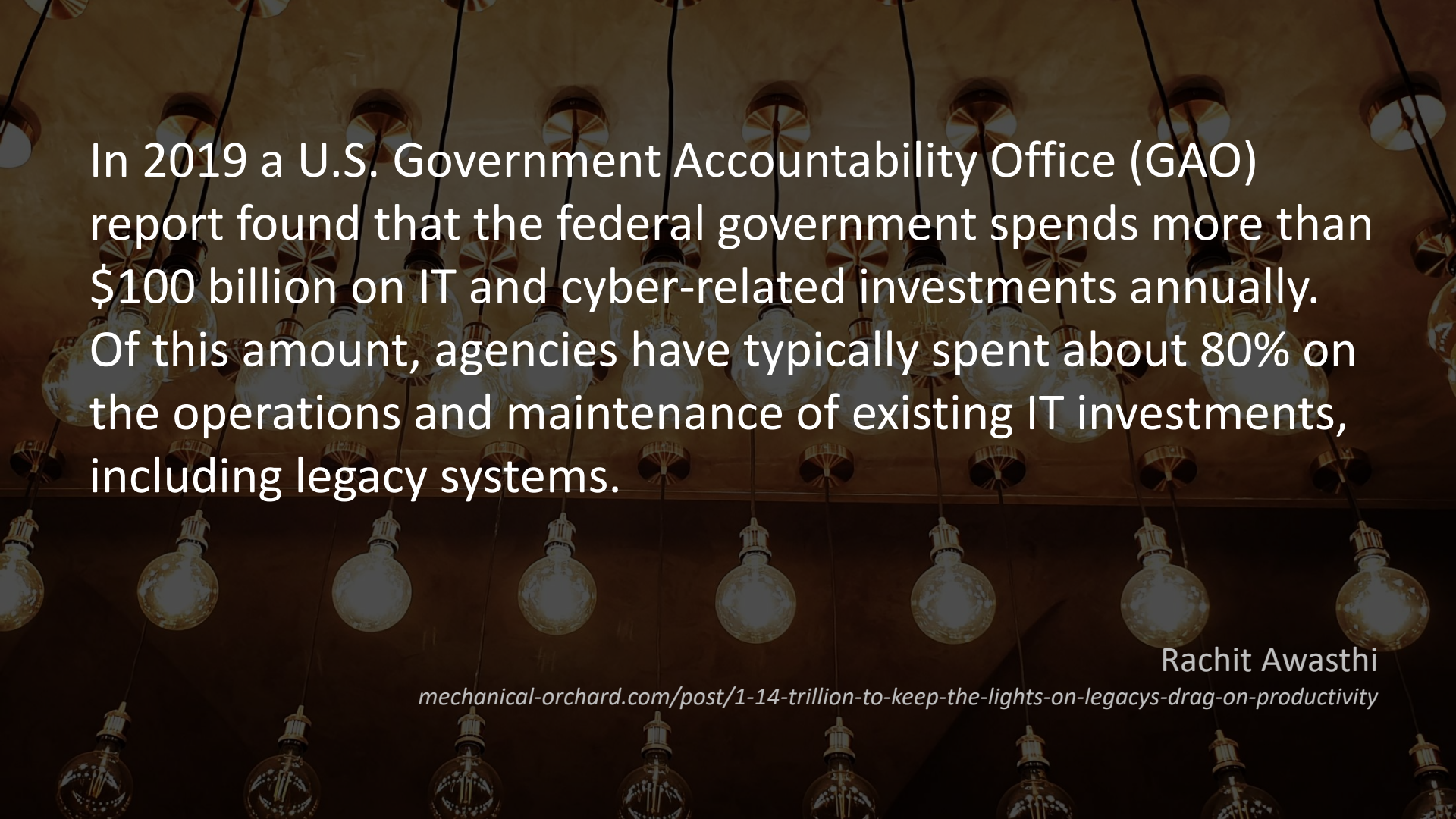
[linkedin.com/posts/angel-siendones-sillero_legacy-code-is-often-defined-as-code-that-activity-7145457617526538240-nvRS](https://www.linkedin.com/posts/angel-siendones-sillero_legacy-code-is-often-defined-as-code-that-activity-7145457617526538240-nvRS)



\$1.14 Trillion to Keep the Lights on: Legacy's Drag on Productivity

Rachit Awasthi

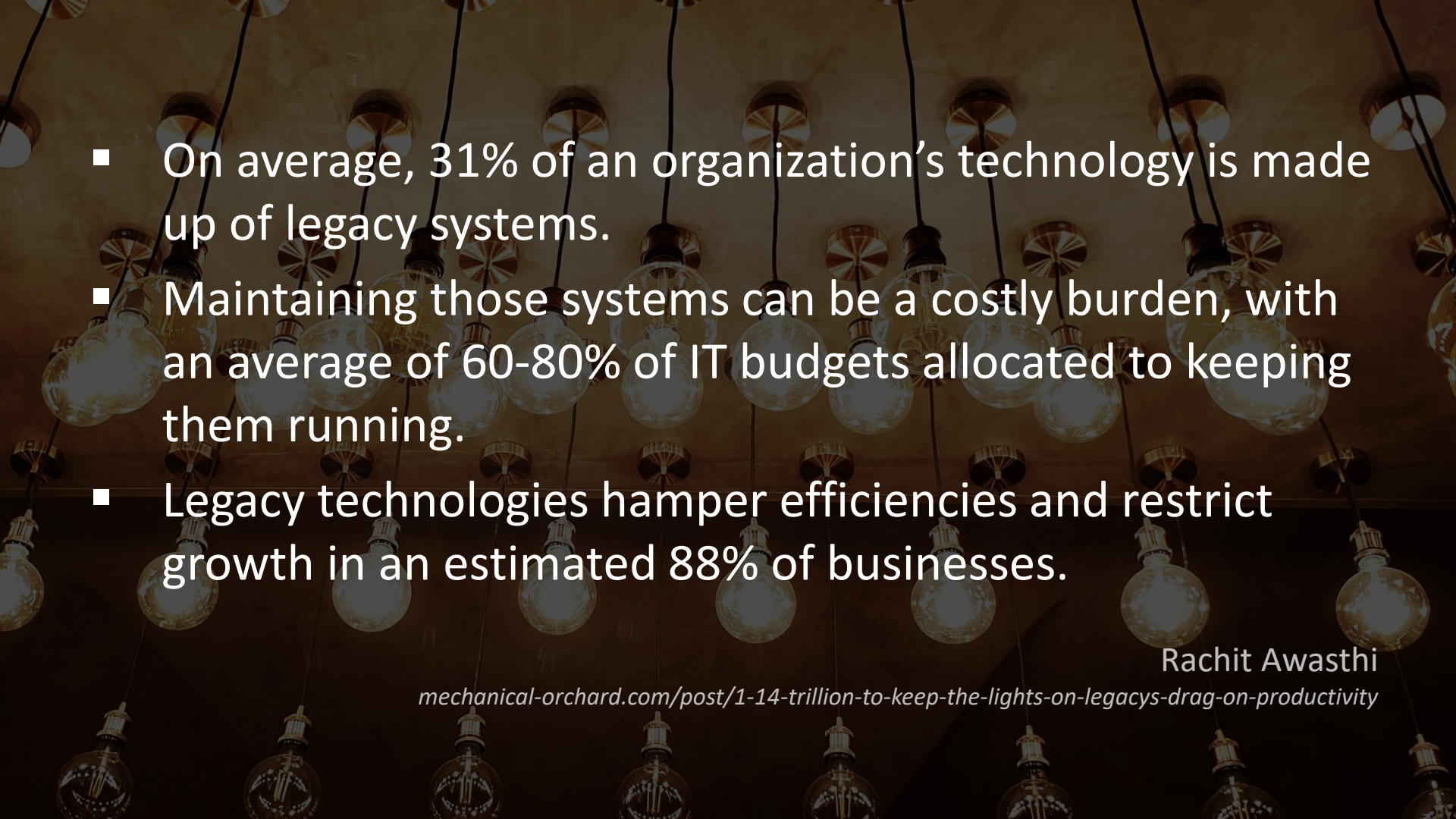
mechanical-orchard.com/post/1-14-trillion-to-keep-the-lights-on-legacy-s-drag-on-productivity



In 2019 a U.S. Government Accountability Office (GAO) report found that the federal government spends more than \$100 billion on IT and cyber-related investments annually. Of this amount, agencies have typically spent about 80% on the operations and maintenance of existing IT investments, including legacy systems.

Rachit Awasthi

mechanical-orchard.com/post/1-14-trillion-to-keep-the-lights-on-legacys-drag-on-productivity

- 
- On average, 31% of an organization's technology is made up of legacy systems.
 - Maintaining those systems can be a costly burden, with an average of 60-80% of IT budgets allocated to keeping them running.
 - Legacy technologies hamper efficiencies and restrict growth in an estimated 88% of businesses.

Rachit Awasthi

mechanical-orchard.com/post/1-14-trillion-to-keep-the-lights-on-legacys-drag-on-productivity

creation of legacy code



Kevlin Henney

@kevin@mastodon.social

The practical consequence of using LLMs to generate code is that many developers will find they have unwittingly moved themselves into a role they were probably trying to avoid: they have automated the creation of legacy code and have redefined their job role as debugging and fixing such code.

Apr 03, 2023, 18:30 · 🌐 · Web · ↻ 442 · ★ 583

mastodon.social/@kevin/110136069252675177

Coding on Copilot

Coding on Copilot

*2023 Data Shows Downward Pressure on
Code Quality*

Coding on Copilot

*2023 Data Shows Downward Pressure on
Code Quality*

150m lines of analyzed code + projections for 2024

We find disconcerting trends for maintainability.

Code churn — the percentage of lines that are reverted or updated less than two weeks after being authored — is projected to double in 2024 compared to its 2021, pre-AI baseline.

150m lines of analyzed code + projections for 2024

We further find that the percentage of “added code” and “copy/pasted code” is increasing in proportion to “updated,” “deleted,” and “moved” code.

In this regard, code generated during 2023 more resembles an itinerant contributor, prone to violate the DRY-ness of the repos visited.

AI Copilot Code Quality

*Evaluating 2024's Increased Defect Rate
via Code Quality Metrics*

211m lines of analyzed code + projections for 2025

AI Copilot Code Quality

Developers seem to view AI as a means to *write more code*, faster.

Through the lens of “does more code get written?” common sense and research agree: *resounding yes*. AI assistants do *beget more lines*.

AI Copilot Code Quality

Developers seem to view AI as a means
to *write more code*, for

Through the lens “Does more code get
written?” common sense and research
agree: *resounding* assistants do
beget more lines.



AI Copilot Code Quality

The data in this report contains multiple signs of eroding code quality.

Evaluating 2024's Increased Defect Rate via Code Quality Metrics

The frequency of copy/pasted lines in commits grew 6% faster than our 2024 prediction.

211m lines of analyzed code + projections for 2025

AI Copilot Code Quality

Meanwhile, the percent of commits with duplicated blocks grew even faster.

Evaluating 2024's Increased Defect Rate via Code Quality Metrics

2024 was the first year that “Copy/Pasted” frequency beat “Moved” line frequency among the 211 million changed lines we’ve analyzed over the past five years.



Kevlin Henney

@KevlinHenney

One of the great things about languages with modern IDE support is that, thanks to refactoring tools, legacy code is a thing of the past! Unlike older with languages, developers never have to experience long methods, rambling classes, poor identifier names, complex logic, etc.



Kevlin Henney

@KevlinHenney



x.com/KevlinHenney/status/1397190734336376846



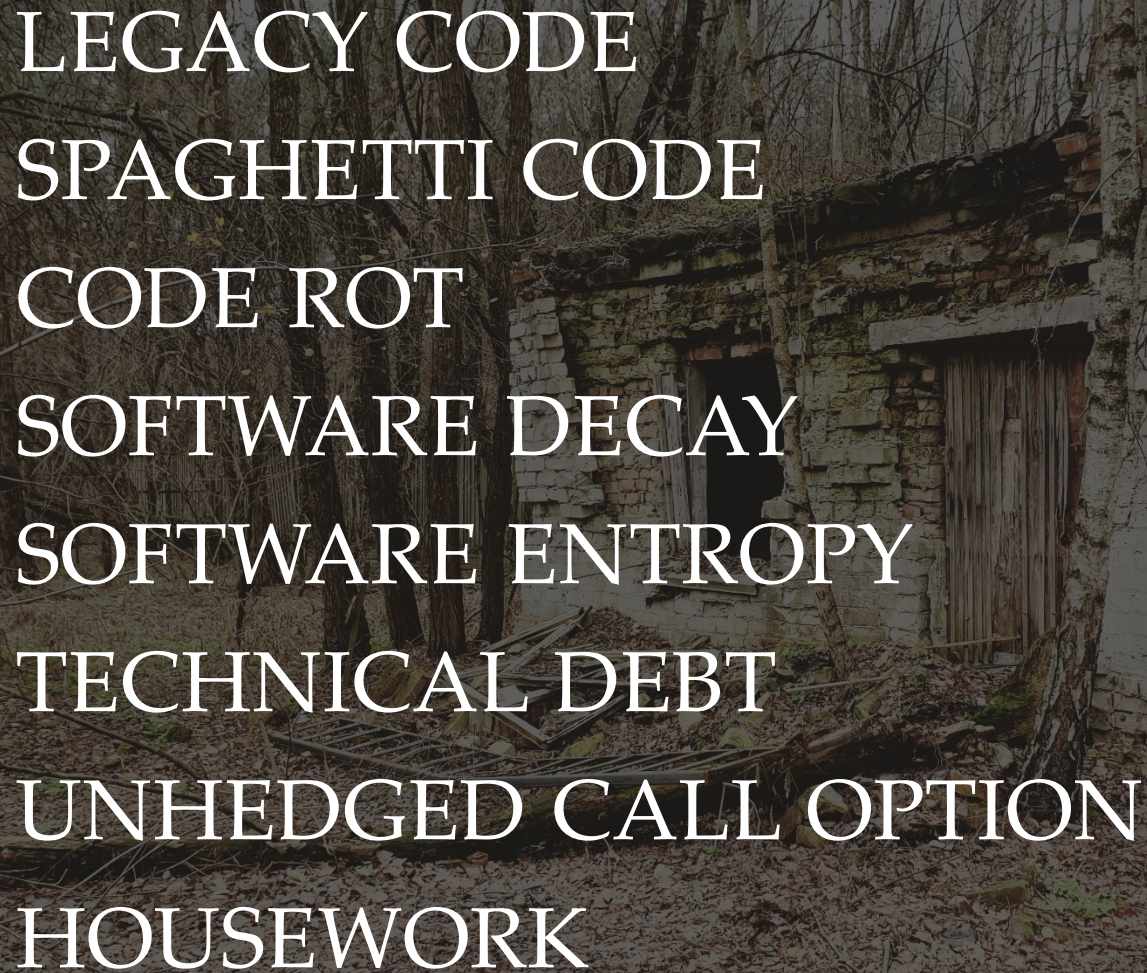
Kevlin Henney

@KevlinHenney

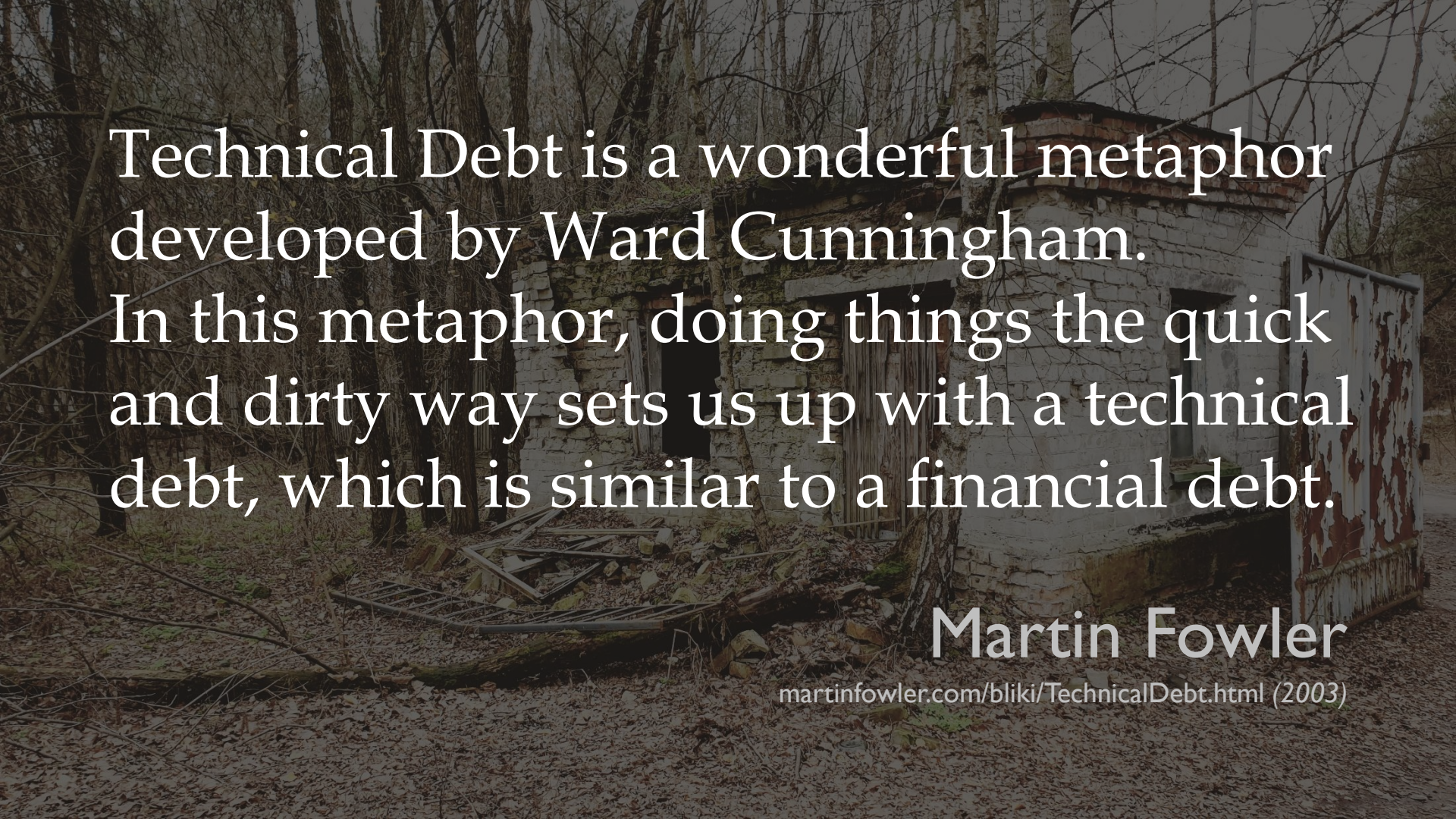


x.com/KevlinHenney/status/1397190765550391304





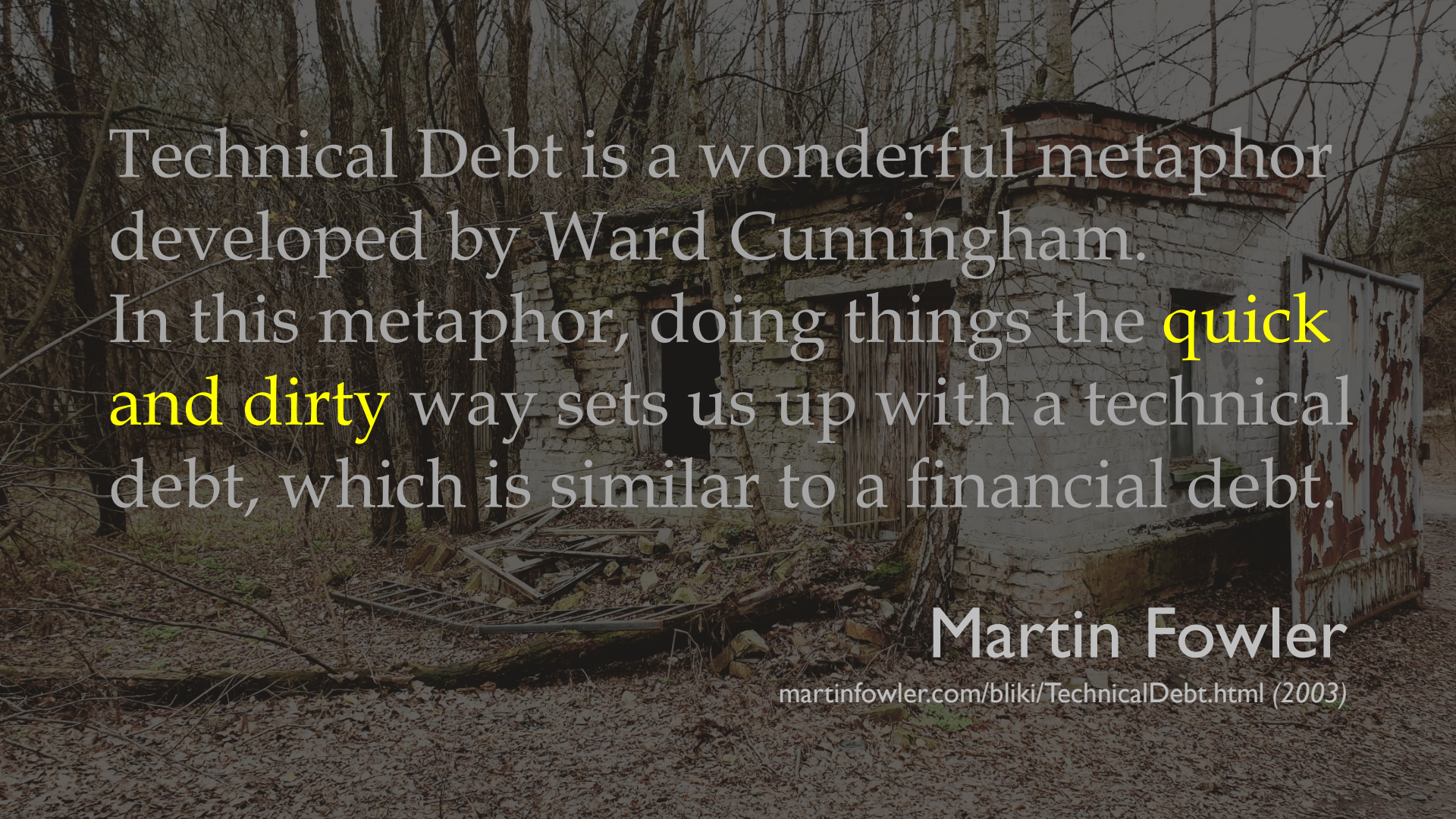
LEGACY CODE
SPAGHETTI CODE
CODE ROT
SOFTWARE DECAY
SOFTWARE ENTROPY
TECHNICAL DEBT
UNHEDGED CALL OPTION
HOUSEWORK



Technical Debt is a wonderful metaphor developed by Ward Cunningham. In this metaphor, doing things the quick and dirty way sets us up with a technical debt, which is similar to a financial debt.

Martin Fowler

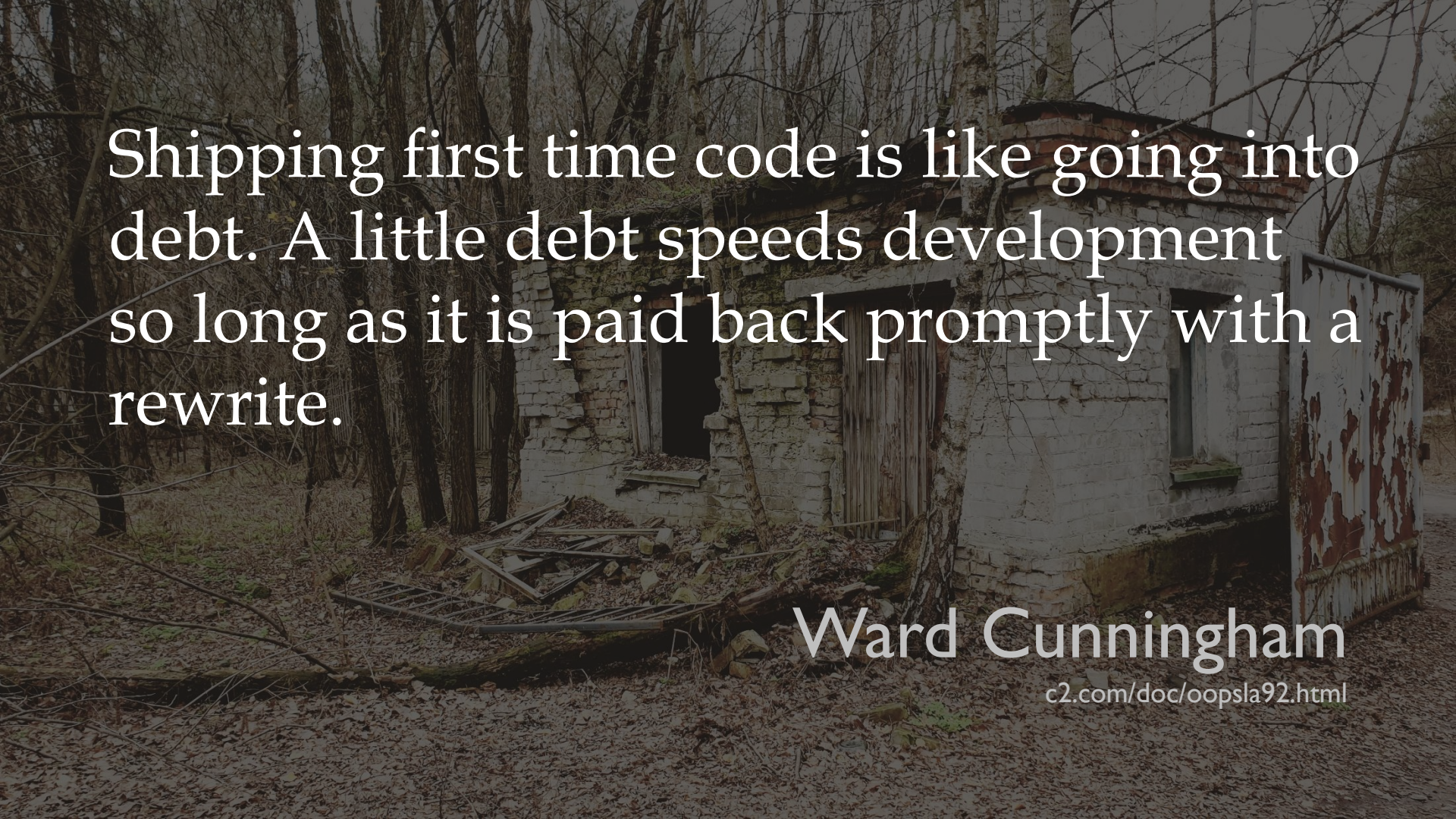
martinfowler.com/bliki/TechnicalDebt.html (2003)



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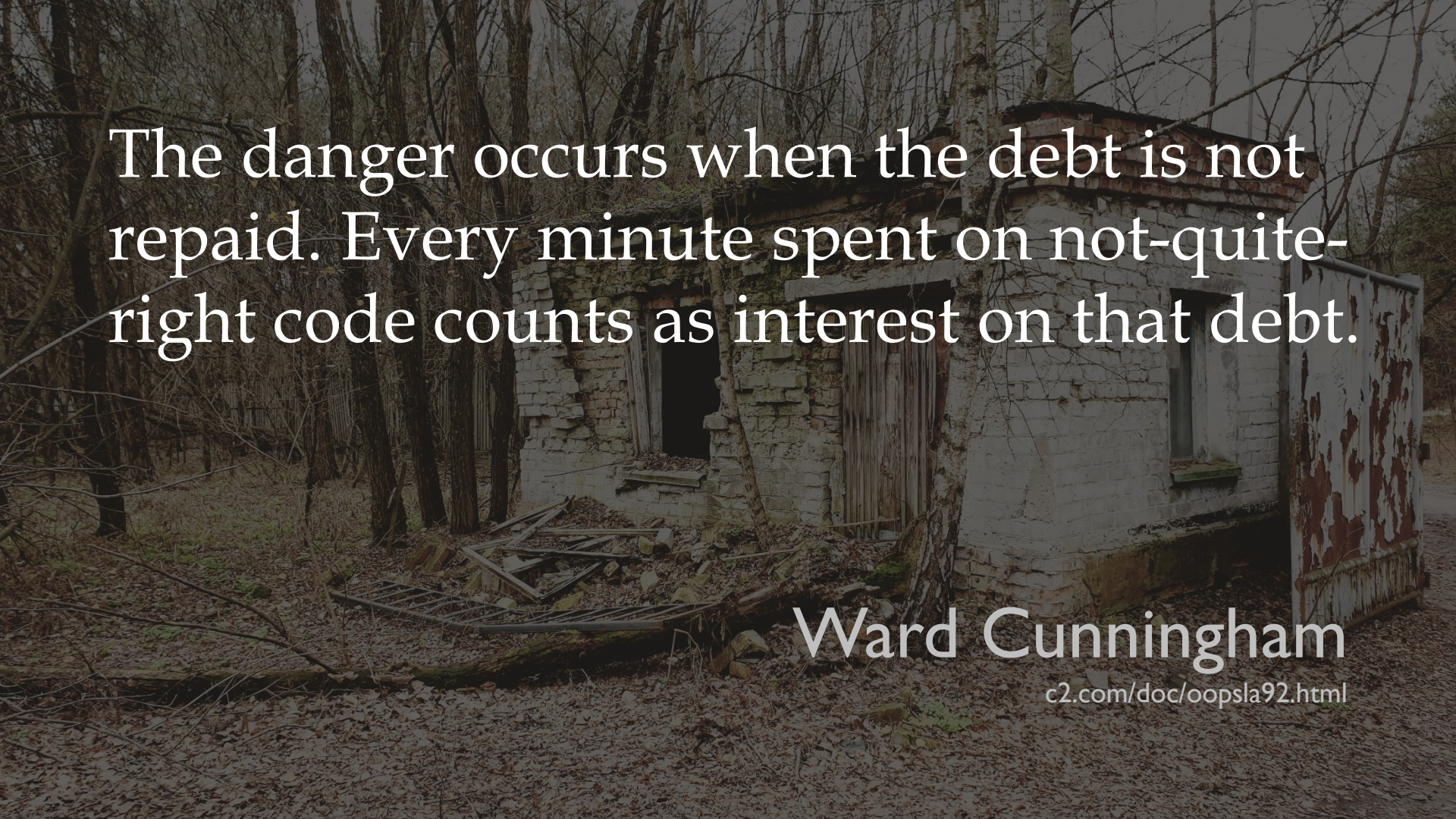
martinfowler.com/bliki/TechnicalDebt.html (2003)



Shipping first time code is like going into debt. A little debt speeds development so long as it is paid back promptly with a rewrite.

Ward Cunningham

c2.com/doc/oopsla92.html



The danger occurs when the debt is not repaid. Every minute spent on not-quite-right code counts as interest on that debt.

Ward Cunningham

c2.com/doc/oopsla92.html

In modern English, “debt” refers to money you owe. In the Middle Ages, the word had a broader and more moral meaning. Coming from the Old French *dette* and Latin *debitum*, it described an obligation or duty — whether financial, moral, or spiritual. It wasn’t just about owing money but about fulfilling one’s responsibilities.

“Words that Changed their Meaning Between the Middle Ages and Modern Times”

medievalists.net/2024/12/words-changed-meaning-middle-ages/

Although we know that by definition no metaphor is perfect, there are two common ways in which the metaphor is misapplied: assuming technical debt is necessarily something bad; equating technical debt with a financial debt value.

Kevlin Henney

“On Exactitude in Technical Debt”

oreilly.com/radar/on-exactitude-in-technical-debt

A photograph of a small, abandoned building in a wooded area. The building is made of light-colored bricks or blocks, many of which are missing or crumbling. The roof is partially collapsed, and there is a large pile of debris, including wood and metal, in front of it. A rusted metal door stands open to the right. The surrounding area is filled with bare trees and fallen leaves, suggesting a late autumn or winter setting. The text "technical debt" is overlaid in a large, white, serif font across the center of the image.

technical
debt

The background image shows a small, two-story building in a state of severe disrepair. The walls are made of light-colored bricks or blocks, many of which are missing or crumbling, revealing a darker interior. The roof is partially collapsed, with some red brick visible at the top. A large, rusted metal door stands open on the right side. The building is surrounded by bare trees and a ground covered in fallen leaves and debris, suggesting a late autumn or winter setting. The overall atmosphere is one of neglect and abandonment.

unmanaged
technical
debt



Kevlin Henney

@KevlinHenney

If a codebase has unmanaged technical debt, there are a number of things that are likely to be harder than necessary:

- Staff retention
- Security
- Compliance
- Defects
- Development
- Tracking changing markets, requirements, technologies, etc.
- ...

1:27 PM - Mar 21, 2018



62



55 people are talking about this

TIME IS MONEY



That is the message of the technical debt metaphor: it is not simply a measure of the specific work needed to repay the debt; it is the additional time and effort added to all past, present, and future work that comes from having the debt in the first place.

Kevlin Henney

“On Exactitude in Technical Debt”

oreilly.com/radar/on-exactitude-in-technical-debt



Yvonne Lam

@yvonnezlam

My theory of tech debt is that housework is the correct metaphor for the thing we call tech debt, but we can't use it because tech has been made up of people who don't do housework, or manage housework being done.

9:13 PM · Mar 29, 2021



4.9K



76

x.com/yvonnezlam/status/1376628481878990852



Isabella Beeton



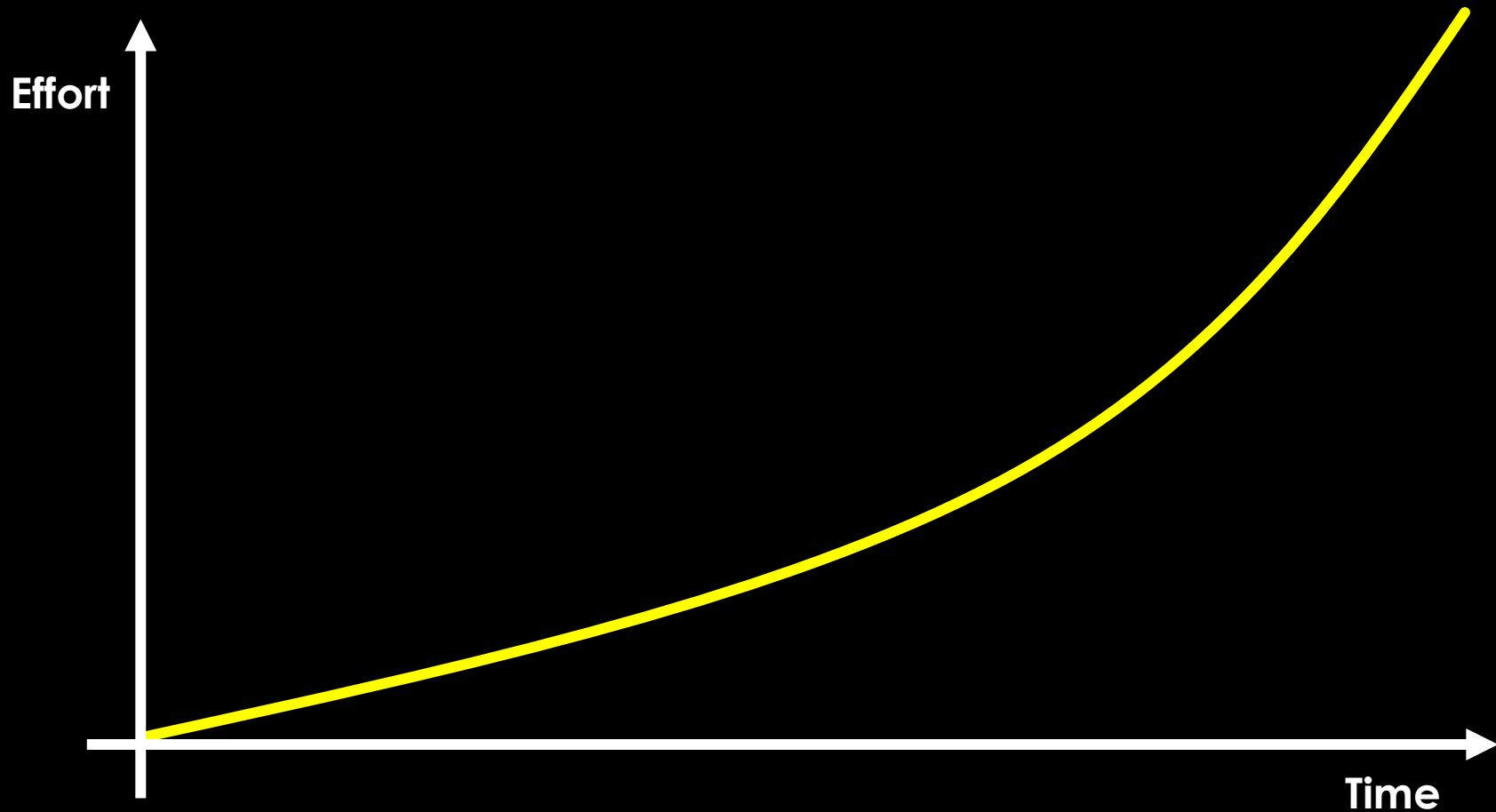
There is no work like early work.

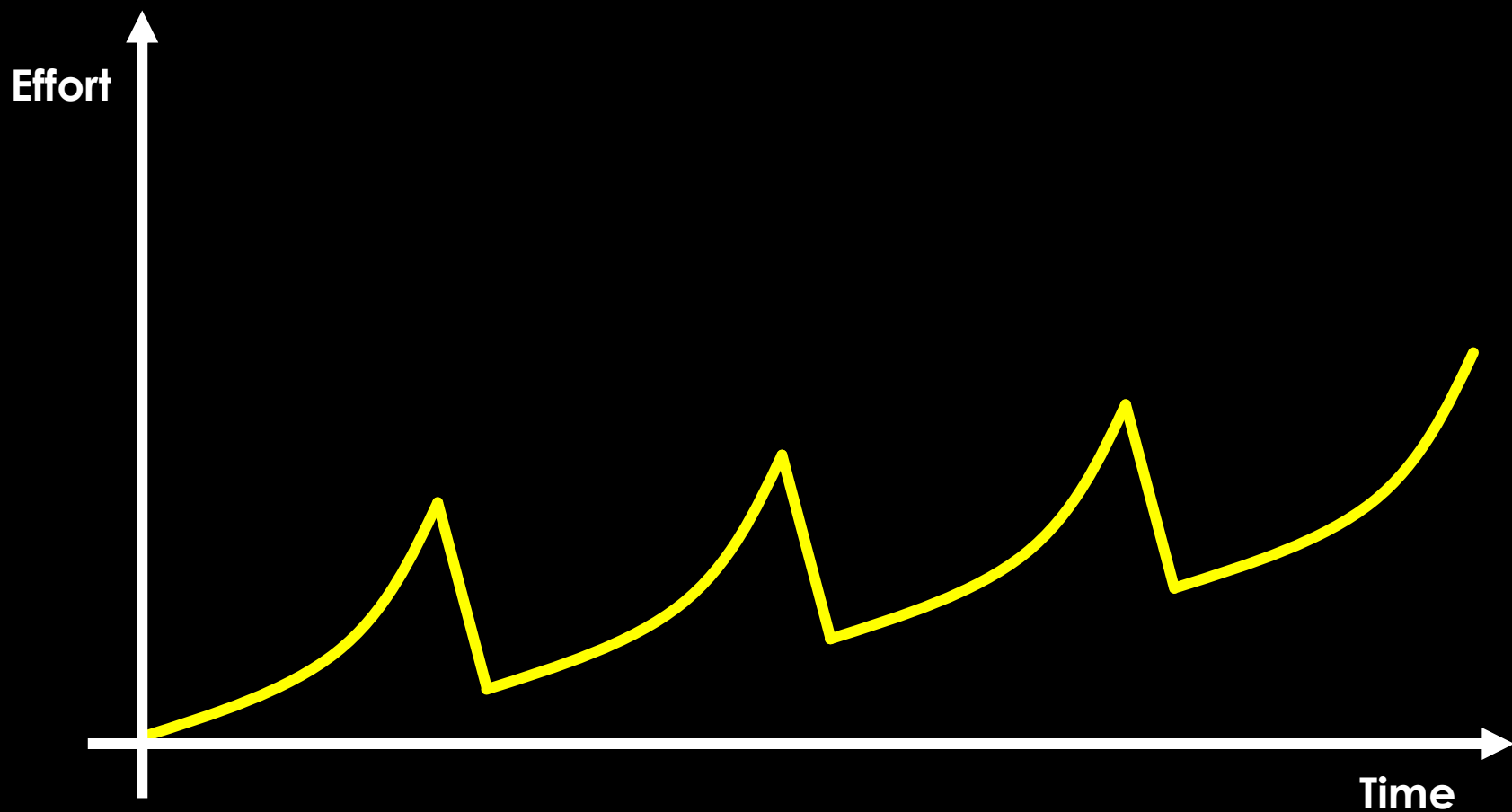
Clear as you go.

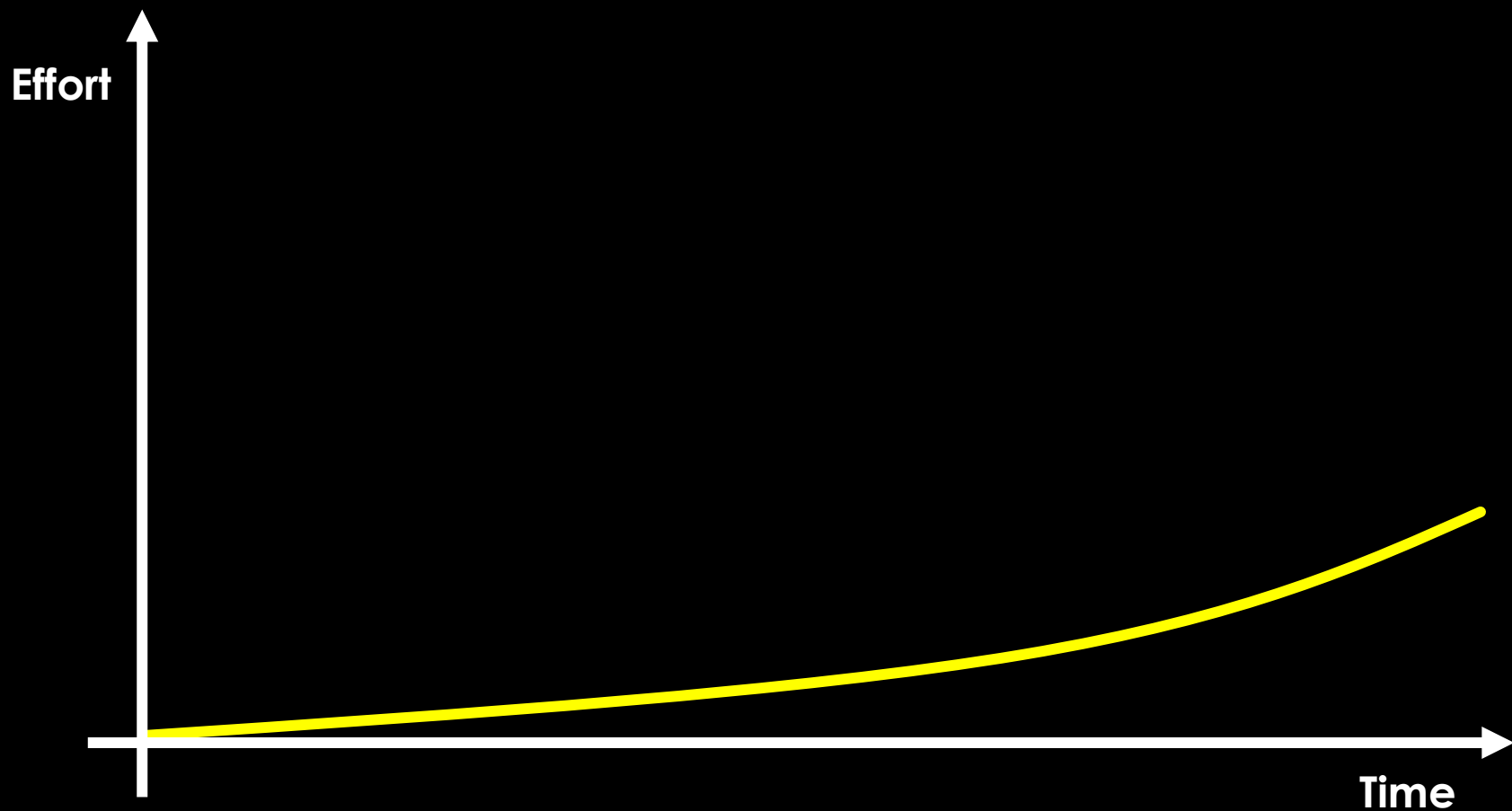
Muddle makes more muddle.

Not to wash plates and dishes soon
after using makes more work.

Isabella Beeton







A black and white photograph of a beach scene. In the foreground, a piece of weathered driftwood lies on the sand, partially covered by sparse, dry grass. The middle ground shows the calm surface of the ocean meeting the shore. The background is a clear, light-colored sky. The word "maintenance" is overlaid in a large, white, serif font across the center of the image.

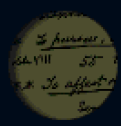
maintenance

A black and white photograph of a beach scene. In the foreground, a small, light-colored boat is partially buried in tall, dry grass on the left side. The beach extends to the right, meeting the ocean. The water is calm with gentle ripples. The sky is a uniform, dark grey. The word "action" is written in a large, white, serif font, centered horizontally and partially overlapping the beach and the boat.

action

A black and white photograph of a small, abandoned boat on a grassy beach. The boat is tilted and appears to be in poor condition, with some parts missing or broken. It is surrounded by tall, dry grass. In the background, the ocean stretches to the horizon under a clear sky. The word "inaction" is overlaid in large, white, serif font across the center of the image.

inaction



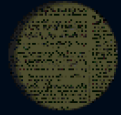
Oxford



English

neglect

Dictionary



OXFORD UNIVERSITY PRESS

Want of attention to what ought to be done; the fact of leaving something undone or unattended to; negligence.

Value demand represents the demands customers make for the things they want, things that are of value to them.

Failure demand is demand caused by a failure to do something or do something right.

John Seddon

Freedom from Command & Control — A better way to make work work



How we spend our
days is, of course, how
we spend our lives.

Annie Dillard