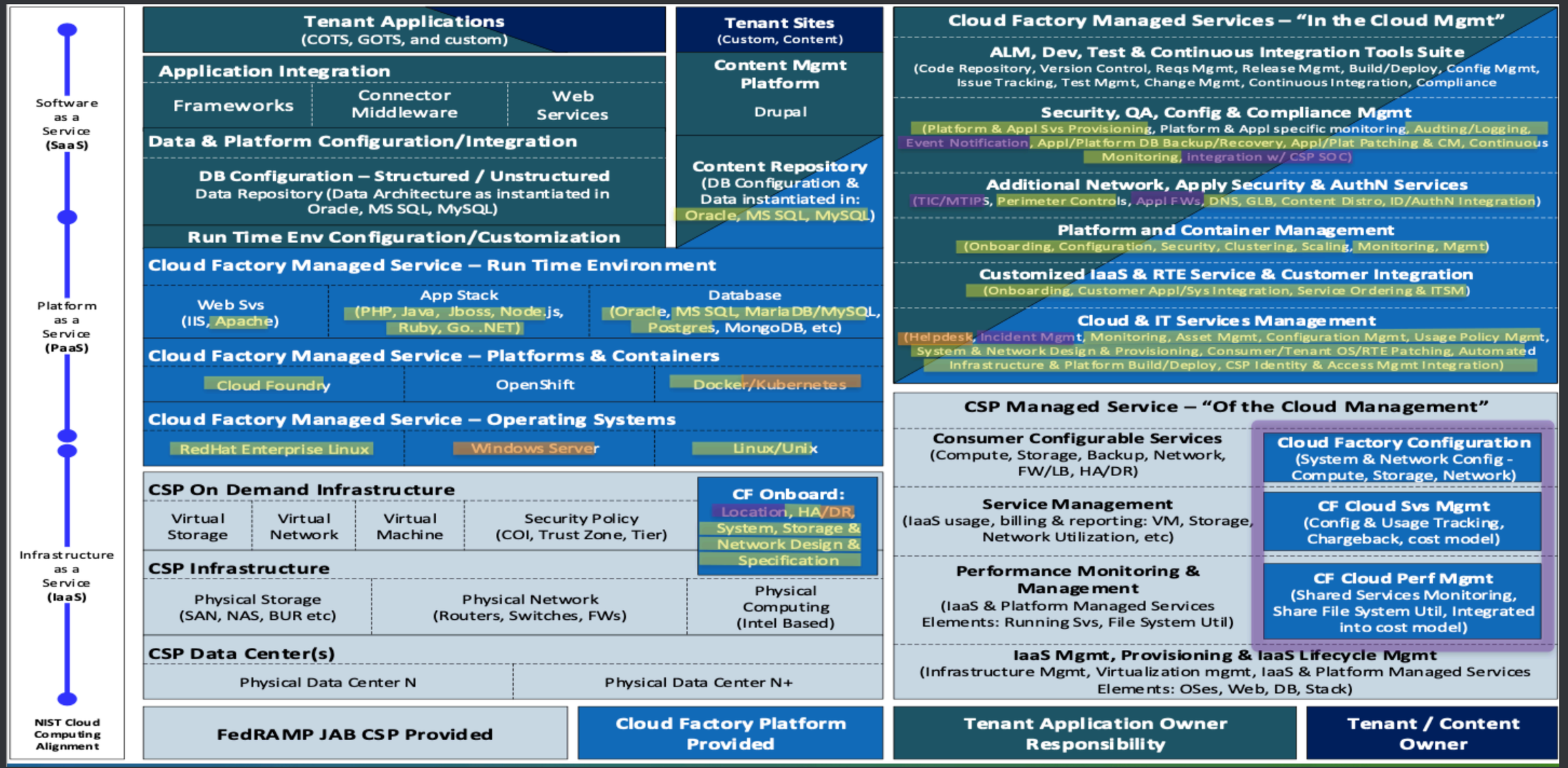
Mnemonic Rules for Eponymous Laws

- SRECon EMEA 2024

Brace yourself...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What I said:

- How many customers do you have?
- Yada, yada, Agile Development, blah, blah, blah, Lean Enterprise, ...

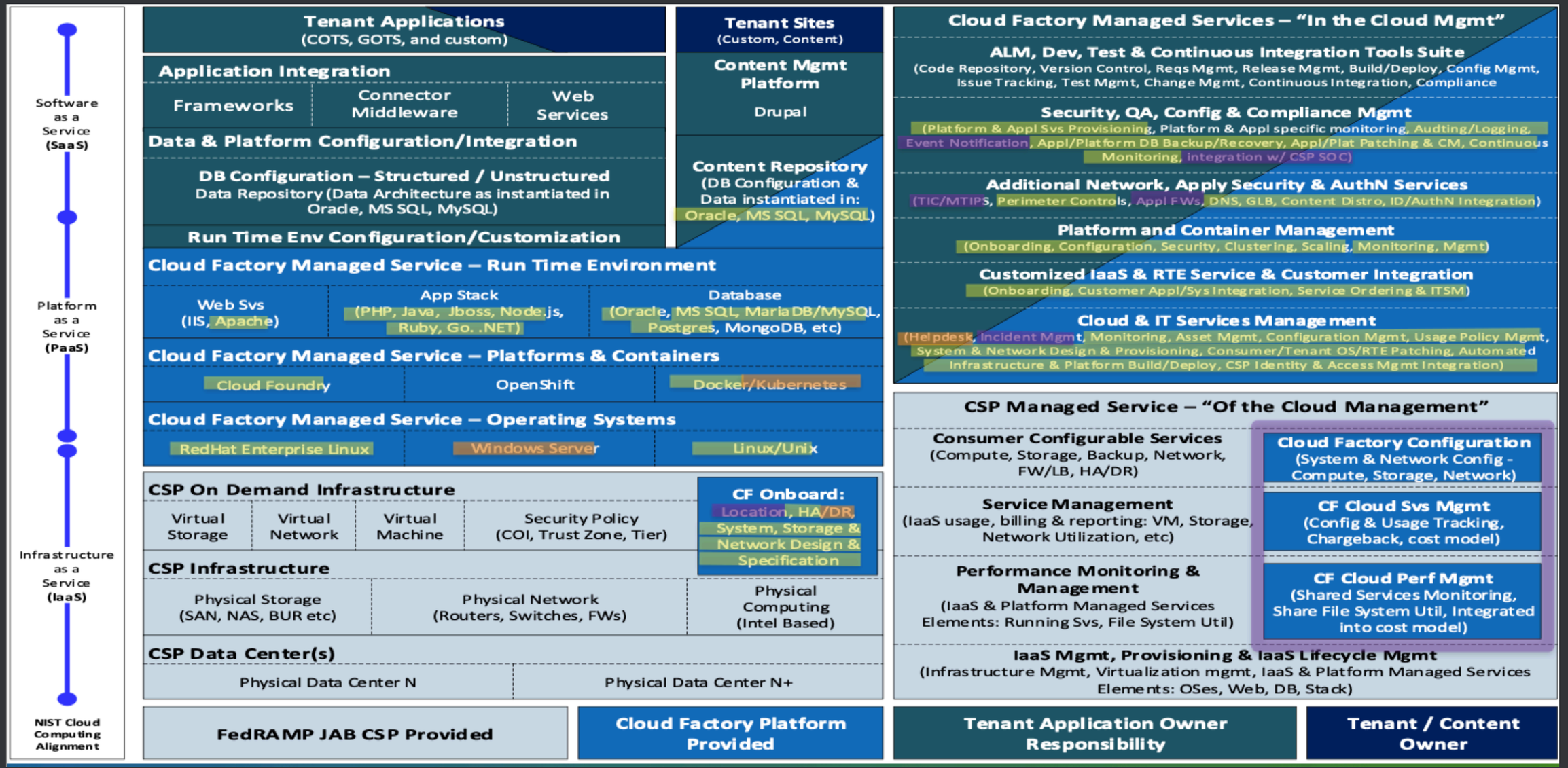
What I needed:

- Eponymous Principle
  - a law named for a person (from Greek eponymos "given as a name")
- Mnemonic Rule:
  - a trick for recall (from Greek mnēmē "memory")

Mnemonic Tricks

"To build a memory ... it has to be a little bit weird"
- Per Sederberg (Ohio State University)

- Good mnemonics are weird, perhaps a little gross, or embarrassing.
- Make them work for you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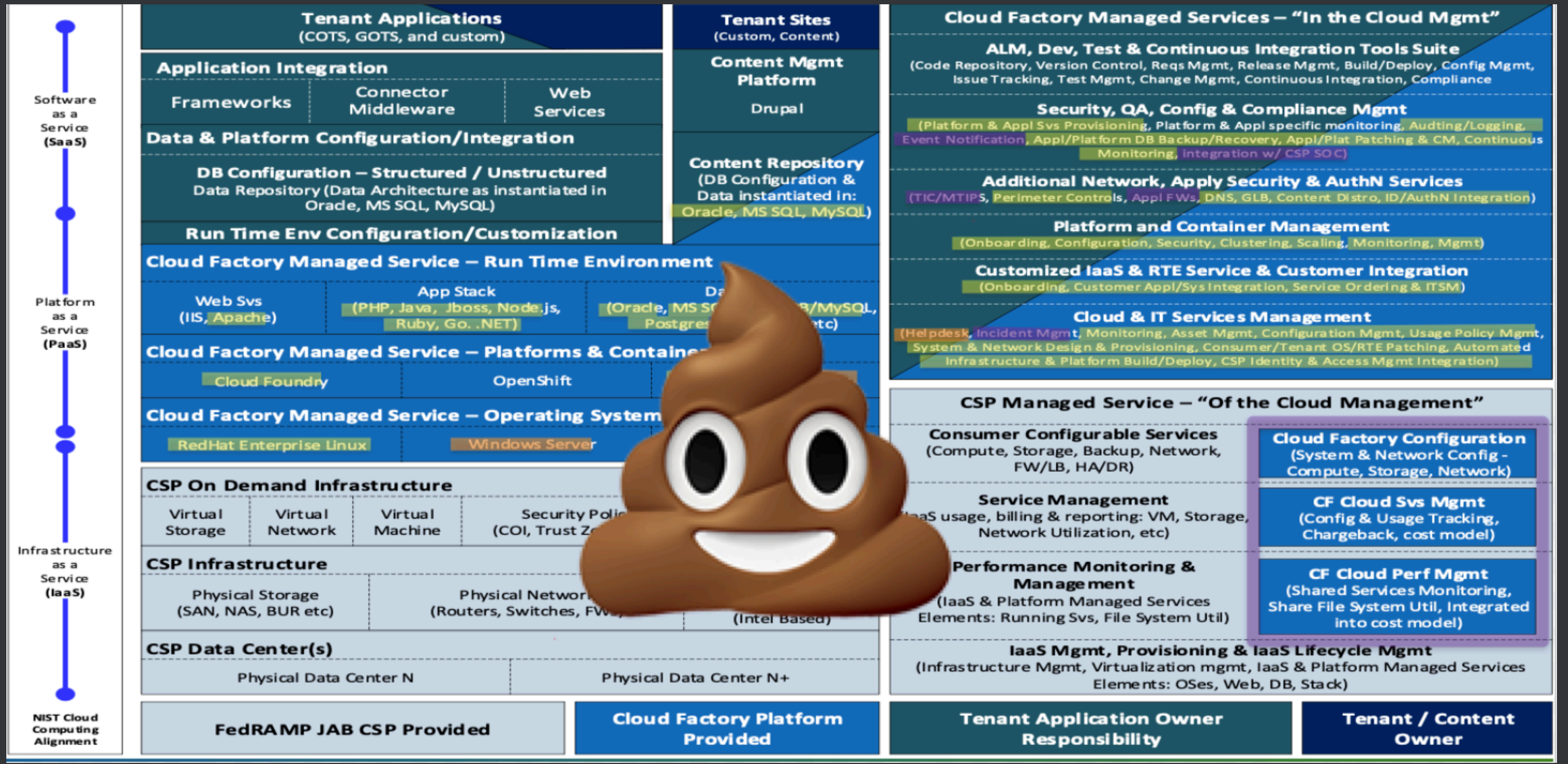
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Evolution of Digestion and 💩

- Worm Digestion:
  - A simple system that works
  - Eat continually, liver produces bile continuously
- Human digestion:
  - A complex systems that works
  - We eat big meals, liver stores bile in the **GALL** bladder
- **Gall**: Mnemonic for …

Gall's Law

- "A complex system designed from scratch never works, and cannot be patched … to make it work. You have to start … with a working simple system."
  - *John Gall, M.D. 1975, General Systemantics*
- Every complex system that works has evolved from a simple system that works.
- Mnemonic: Graphic imagery, digestive system, and **GALL** bladders

Mnemonic Tricks for Eponymous Principles

- Peter Burkholder *(he/him)*
- US Gov (Cloud.gov), Chef Software, ..., Research Labs
- Geophysicist

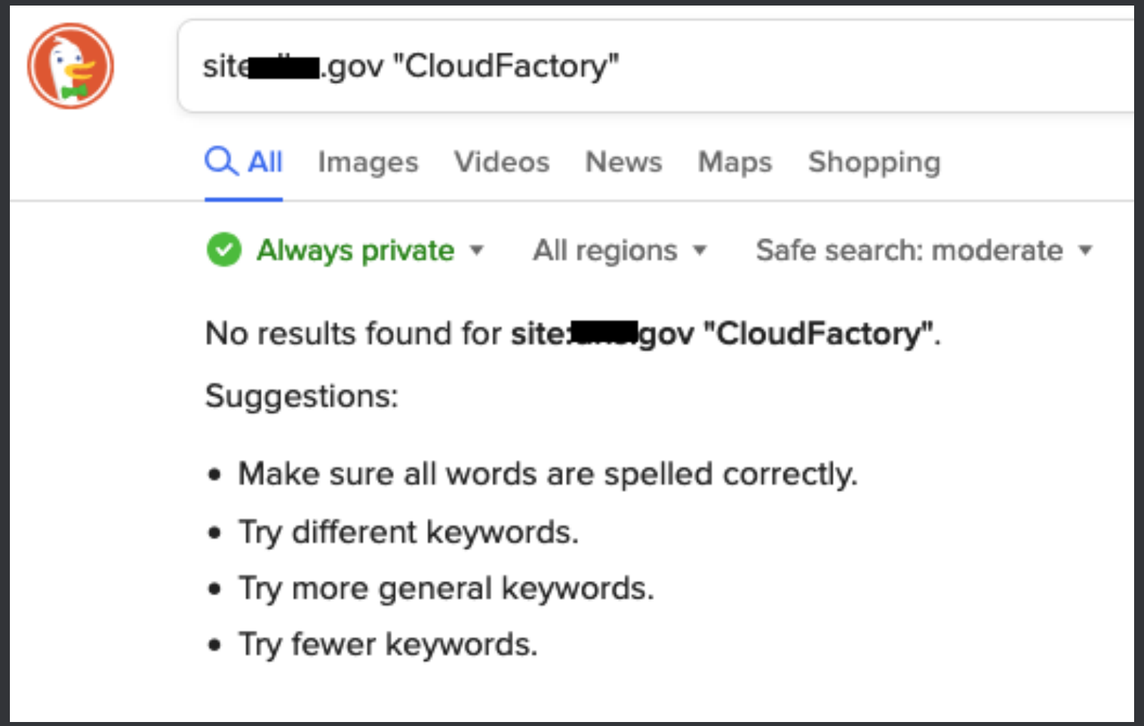
The power of Eponymous Principles

- Newton's Laws
  - Law of inertia, etc.
- Murphy's Law
  - Everything that can go wrong will
- Moore's Law
  - Compute power doubles every two years

What makes for a good eponymous principle?

- True - with empirical evidence
- True - with weight of lived experience
- Predictive or explanatory value

Speaking of predictive value...



Conway's Law

"Organizations which design systems…are constrained to produce designs which are copies of the communication structures of these organizations"

- *Melvin Conway, 1968*
- Or: Your architecture will mirror your org chart
- *Mnemonic*: We **CON**struct systems mirroring the **WAY** we communicate
- Application: … next slide …

The Inverse Conway Maneuver

- Build teams to achieve the desired architecture
- Tech: Used bounded contexts and APIs along team bounds
- Orgs: Consider *Team Topologies* (Skelton & Pais, 2019)

(image: Team Topology cover)

Brooks Law

"Adding [engineers] to a late software project makes it later"

- *Fred Brooks, 1975, The Mythical Man Month*
- Mnemonic: The **BROOK** went over the waterfall
- Why: onboarding time + geometrical growth in communication lines

Javelins Paradox

As the throwing rate of javelineers in ancient Roman armies doubled they went from 1/5 of a brigade to 1/3.

One would expect the number to *decrease* because the same number would already throw TWICE as many.

Jevons' Paradox

As the cost of economically useful commodity decreases, total expenditure on the commodity grows

- *William Stanley Jevons, 1865*
- Mnenomic: Something to do with ancient javelineers
- Examples:
  - 1860s: Coal
  - 1970s: Automobile fuel efficiency
  - 2010s: Cloud spend
- See also: Moore's Law

Pareto Principle

"the vital few and the useful many" (or the 80/20) rule

- *Joseph Juran, inspired by Vilifredo Pareto, 1941*
- Mnemonic: *(under construction)*
- 80% of a project is complete in 20% of the time
- Validity: Power-law distribution in process variation
  - or a *Pareto Distribution*

Pareto Principle (2)

"In the last six months, we've been able to meet the needs of one-half of our users. We can meet the needs of the other half in another six months"

- Can you spot the problem here?

Meme Laws

- ~~True – with empirical evidence~~
- ~~True – with weight of lived experience~~
- Feel true
- ~~Predictive or explanatory value~~
- Build Community

Godwin's Law

- As an online discussion grows longer, the probability it will involve Nazis approaches 1
  . * *Mike Godwin, 1980*
- In online discussions, **Go(o)d** never **Wins**

Mike Godwin
@sfmnemonic

Replying to @DownTwist @Jamie_Foxworthy and 5 others

If you think comparing me to Hitler works, you must be new to the internet.

9:31 AM · Aug 12, 2019 · TweetDeck

Meme Laws

- Cunningham's Law
  - "The best way to get the right answer on the internet is not to ask a question; it's to post the wrong answer."
  - *Ward Cunningham*
  - Mnemonic: Knowledge is COMING HOME when you post the wrong answer
- Hofstadter's Law
  - "It always takes longer than you expect, even when you take into account Hofstadter's Law."
  - *Douglas Hofstatder, 1979* (image: GEB cover)
  - Mnemonic: **Ha! Later...**

Whong's Law

"Every government agency, everywhere is working on a “new system”; It will solve all of their data problems and will be ready to use in 18-24 months."

- *Chris Whong, 2018*
- Mnemonic: Data throng done long? Wrong, says Whong.
- See also: Gall's Law, Pareto Principle

Quiz Time

What law explains this?

To meet the specified contract deadlines,
we've added a DevOps team. But now we're further behind schedule!

Answer:

- Brooks's Law
- Whong's Law
- Conway's Law
-

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Answer:

- **Brooks's Law**
- ~~Whong's Law~~
- ~~Conway's Law~~
- Mnemonic: The **BROOK** goes over the waterfall

Fill in the blank

We have five teams assigned to a system that only has three major components. Time to apply an Inverse _____ Maneuver so we don't end up with five subsystems.

Answer: CONWAY

We have five teams assigned to a system that only has three major components. Time to apply an Inverse **Conway** Maneuver so we don't end up with five subsystems.

- We CONstruct systems the same WAY we're organized

Fill in the blank

This proposed architecture is too complex. We'll have to start with a simpler initial *working* solution, otherwise we're doomed by _____ Law.

Answer: Gall's Law

This proposed architecture is too complex. We'll have to start with a simpler initial *working* solution, otherwise we're doomed by **Gall's Law**.

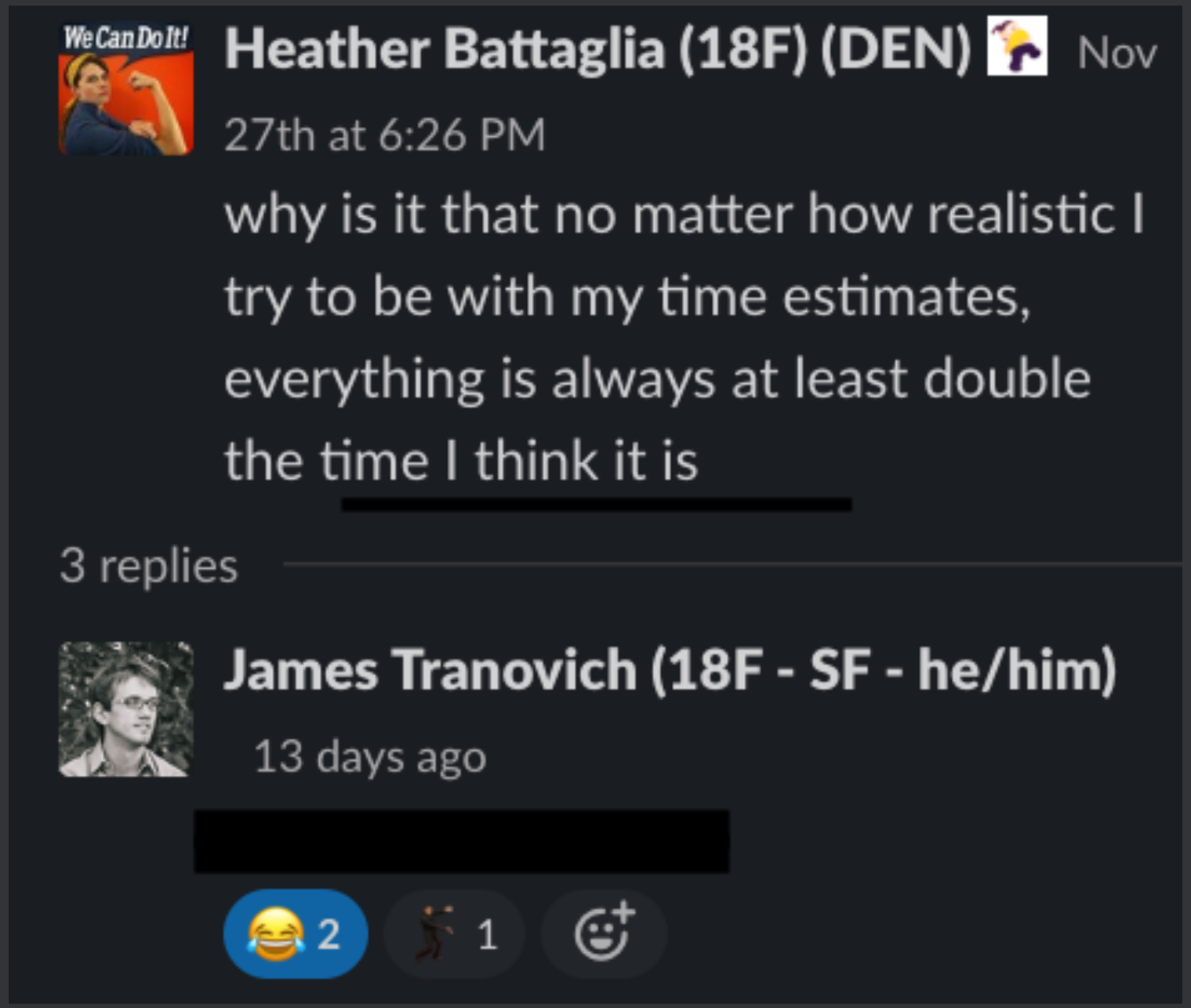
- 💩 architecture -> digestion -> evolution -> Gall bladder

Fill in the blank

We've met the needs of 80% of our users in two sprints, so by the _____ _____ we'll need another _____ sprints for the other 20%.

Answer

We've met the needs of 80% of our users in two sprints, so by **Pareto Principle** we'll need another **eight** sprints for the other 20%.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Nov
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3 replies
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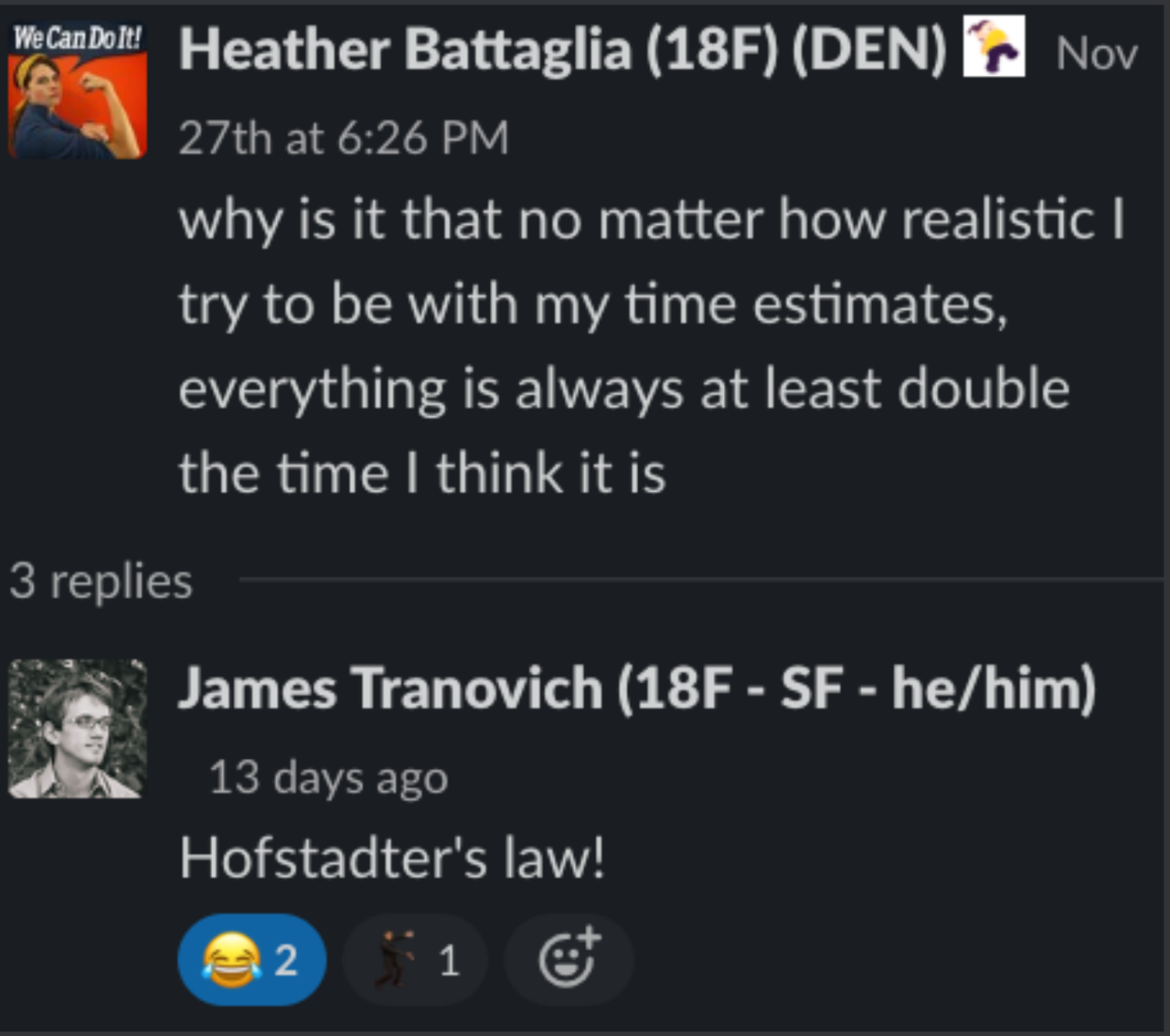
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Thank you

And laws to look forward to in a future version

- G.I. Joe Fallacy
- Dunning-Kruger Effect
- Goodhart's Law
- Hanlon's Razor
- Overton Window
- Metcalf's Law

Resources

- This talk: https://github.com/pburkholder/eponymous-principles
- Laws of Software: https://laws-of-software.com