

Economics in 30 Minutes

Part 4: Thinking Tools and Evidence

Vincent Maistre

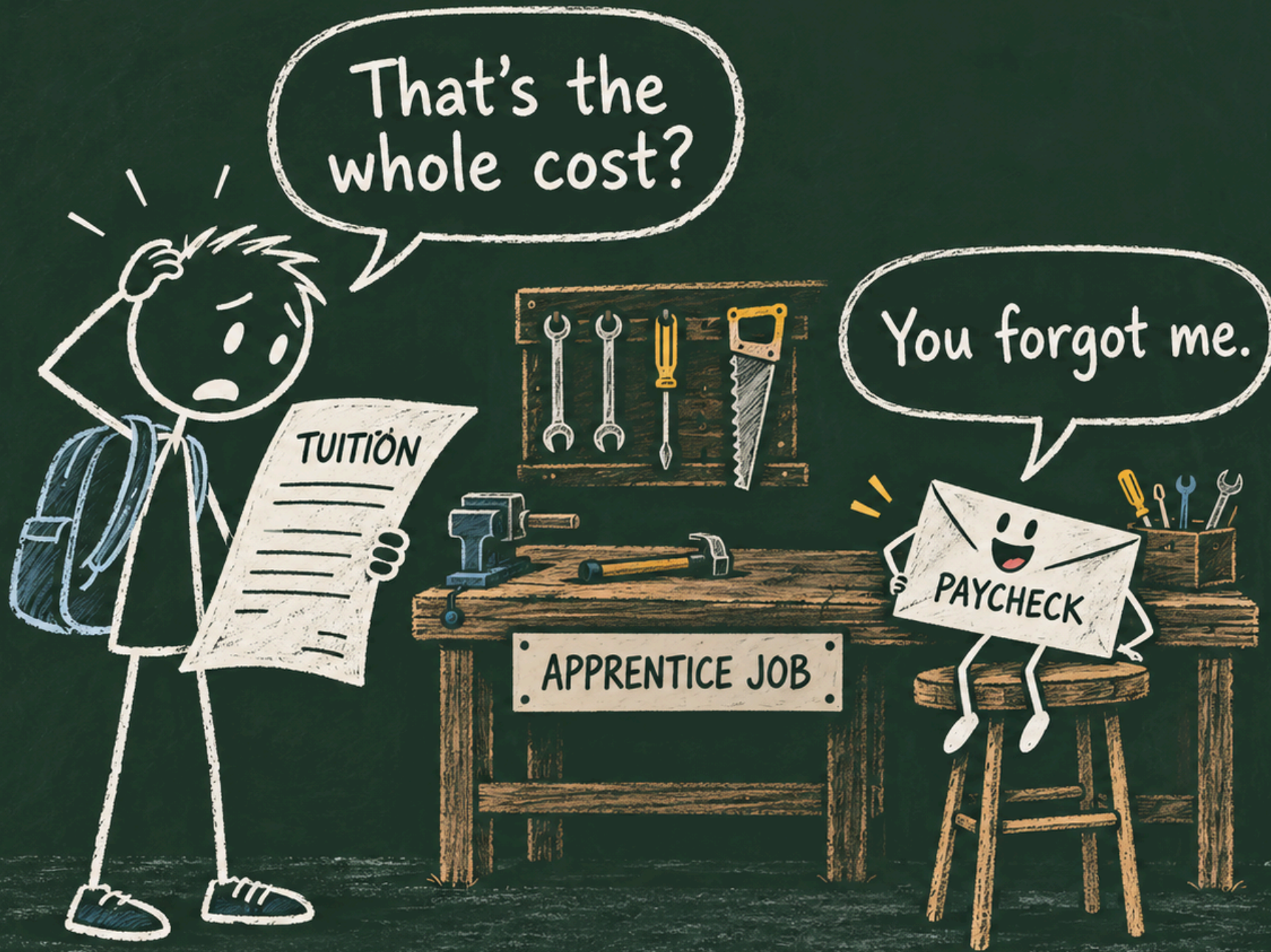
What does college cost?

Tuition and fees.

Books.

Living expenses.

And something that never shows up on a bill.



What counts, and what doesn't

Counts: the best job you gave up.

Doesn't count: rent and food you'd pay anyway.

Counts: the extra rent, if campus costs more.

When the job market weakens, college gets cheaper in the way that matters.

The paycheck you give up is smaller, even if tuition stays the same. (Evidence: companion page.)

Your turn, briefly

*What job would you have had
if you hadn't gone to college?*

Or: what job do you have now?

Was it actually available to you?

What does that do to the cost of college, for you?

Maya and Leo: who does what

Each day, each can fish or pick coconuts. Not both.



Maya

a day of fishing:



4 fish

or a day of coconuts:



2 coconuts



Leo

a day of fishing:



1 fish

or a day of coconuts:



1 coconut

Maya is better at both.

Illustrative numbers.

What does one coconut cost?

Not in dollars. In fish not caught.



A day picks 2 coconuts.

That same day could have caught 4 fish.



A day picks 1 coconut.

That same day could have caught 1 fish.



A coconut costs Maya two fish. It costs Leo one.

Leo has the lower opportunity cost in coconuts. That is his comparative advantage.

Four days on the island

Each alone, two days of each:

Maya 8 fish, 4 coconuts. Leo 2 fish, 2 coconuts.

Island: 10 fish and 6 coconuts.

They specialize: each does more of what they give up less for.

Leo picks coconuts all four days: 4 coconuts.

Maya picks one day, fishes three: 2 coconuts, 12 fish.

Island: 12 fish and 6 coconuts.

Same number of coconuts. Two more fish. Nobody worked a minute longer.



Comparative advantage: same coconut, different price



*Maya is better at both.
Leo still makes the
cheaper coconut.*

*Price it in fish:
Maya gives up 2 to pick one.
Leo gives up 1.*

The worse coconut-picker makes the cheaper coconut.

Maya: 4 fish or 2 coconuts a day. Leo: 1 fish or 1 coconut a day. (Illustrative.)

The island, in full

Maya: 4 fish a day, or 2 coconuts. A coconut costs her 2 fish; a fish costs her $\frac{1}{2}$ coconut.

Leo: 1 fish a day, or 1 coconut. A coconut costs him 1 fish; a fish costs him 1 coconut.

Alone, four days, two of each

Maya 8 fish + 4 coconuts. Leo 2 fish + 2 coconuts. Island: 10 fish, 6 coconuts.

Specialized

Leo: coconuts all four days = 4 coconuts. Maya: one day coconuts (2), three days fish (12).

Island: 12 fish, 6 coconuts. Two extra fish, same hours.

Trade

Both gain at any price strictly between 1 and 2 fish per coconut.

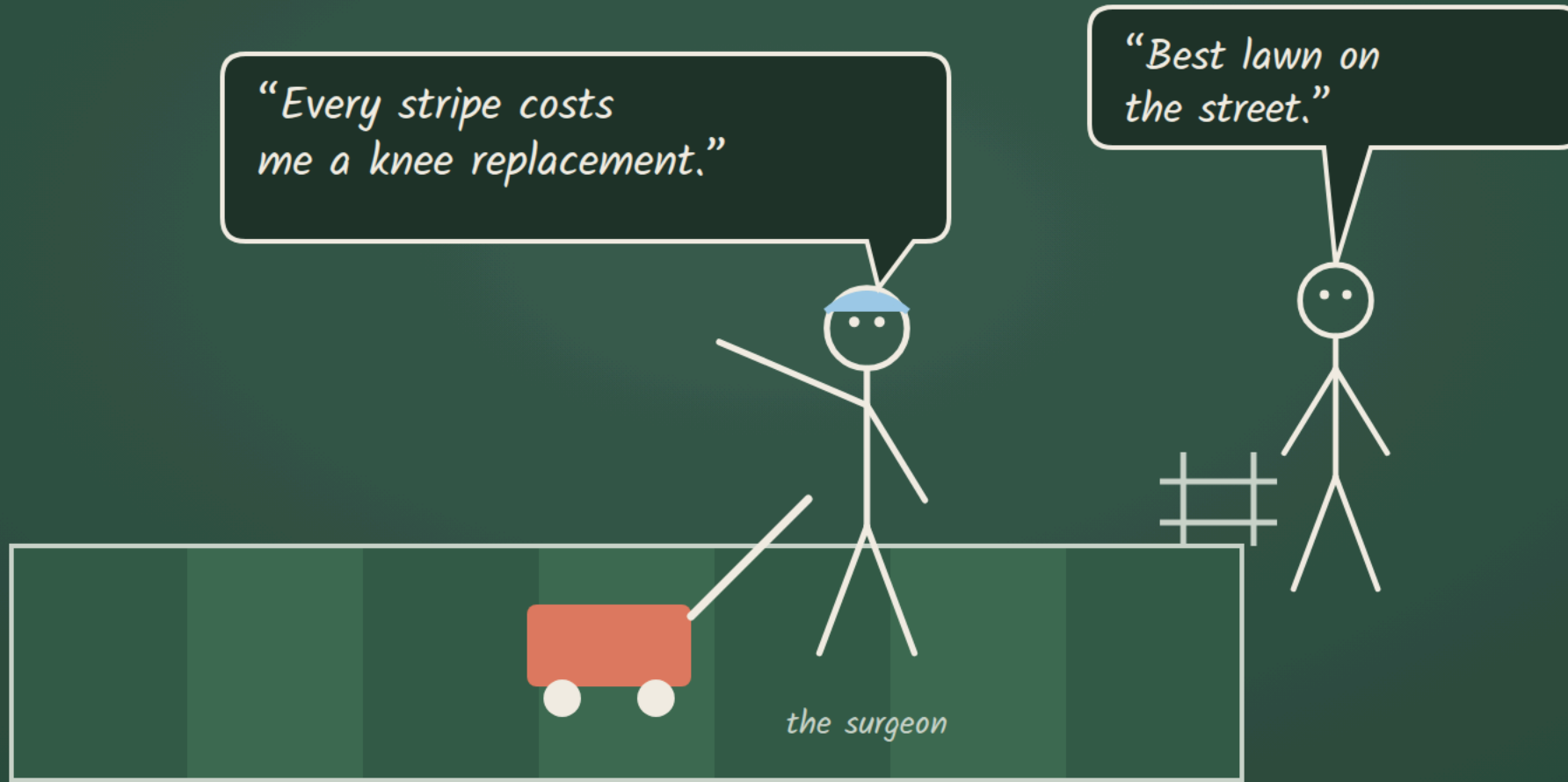
Example: Leo sells 2 coconuts for 3 fish ($1\frac{1}{2}$ each).

Leo ends with 3 fish + 2 coconuts (one fish better). Maya ends with 9 fish + 4 coconuts (one fish better).

At exactly 1 or 2, one of them gains nothing. Outside the range, one refuses. Try $1\frac{1}{4}$ and $1\frac{3}{4}$.

*Comparative advantage isn't about who is better.
It's about who gives up less.*

Best at mowing. Should never mow.



Being better at a job doesn't make it your best use of time.

What matters is what you give up. Hers is the most expensive hour on the street.

Your turn, briefly

*Leo is worse at both jobs,
and his coconut is still the cheaper one.*

Does that feel wrong? Why?

Say what each of them gives up to pick one coconut.



Did this cause that?

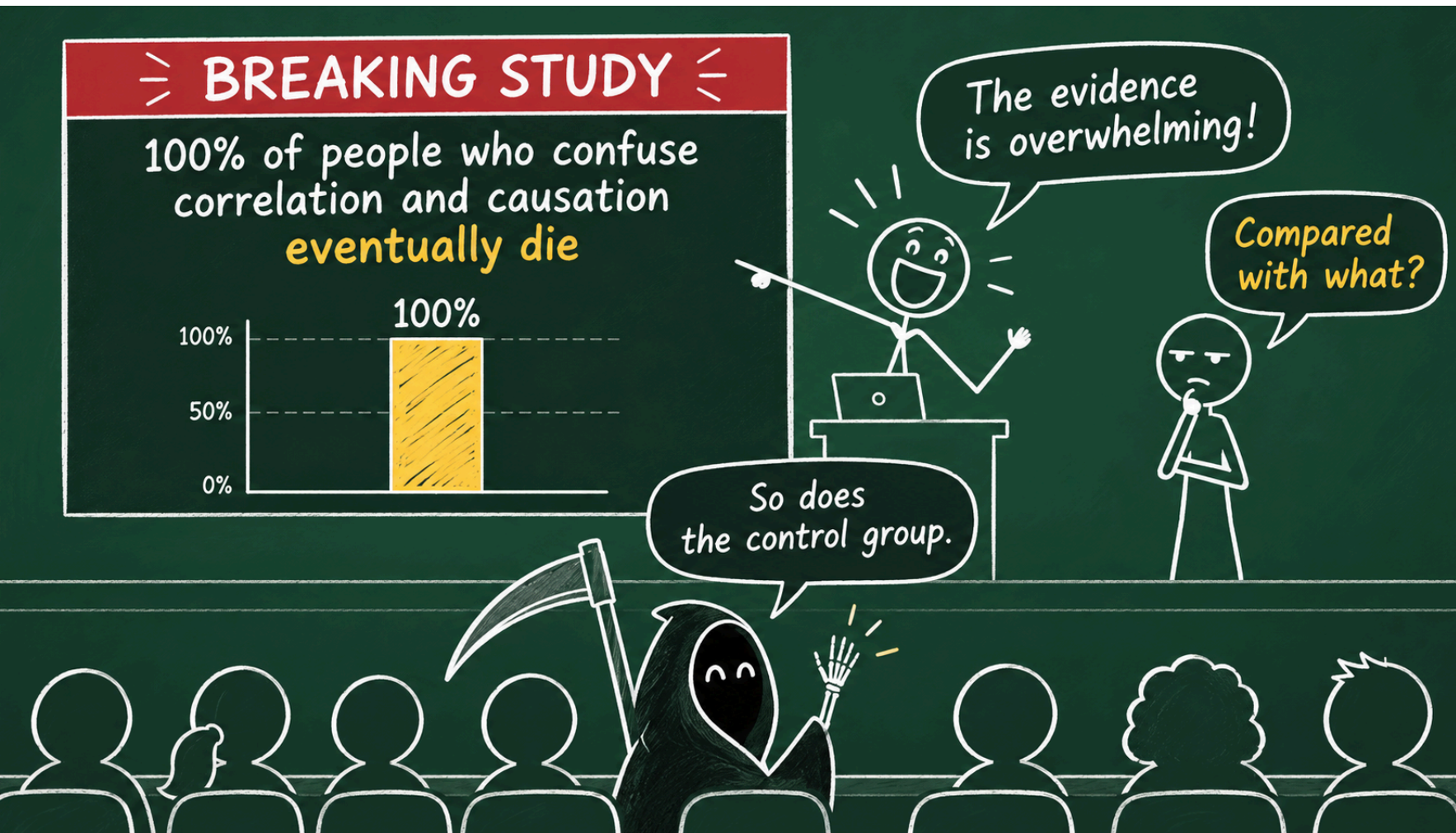
*Remember the happy face: I changed one thing at a time.
The world doesn't.*

Two ways to be wrong

False positive: seeing a cause that isn't there.

False negative: refusing a cause that is there.

Statisticians call these Type I and Type II errors. The names on screen are plainer.



“Most accidents happen near home.”

*So the drive to the corner store is the dangerous one?
Where does most of your driving happen?*

Count crashes per mile, not crashes.

A number without its denominator is a story, not a finding.

False positive

*A real correlation,
the wrong cause.*

*Big fires draw trucks.
Trucks don't make fires big.*

*Ask: what else moves both?
Or which way does it run?*



Your turn, briefly

Ice cream sales and shark attacks rise and fall together.

Should we ban ice cream?

What could make both go up?

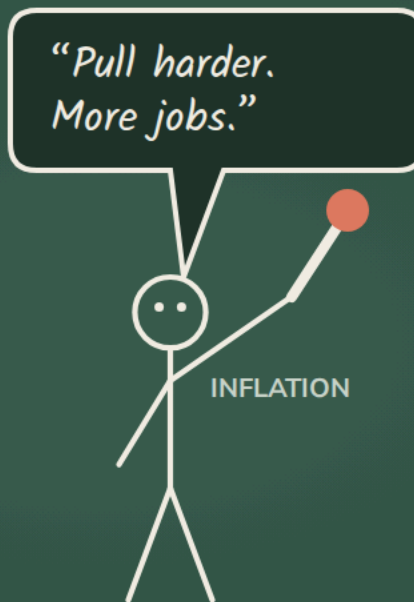
*Name another pair that move together
without one causing the other.*

The Phillips curve: a correlation they tried to steer by

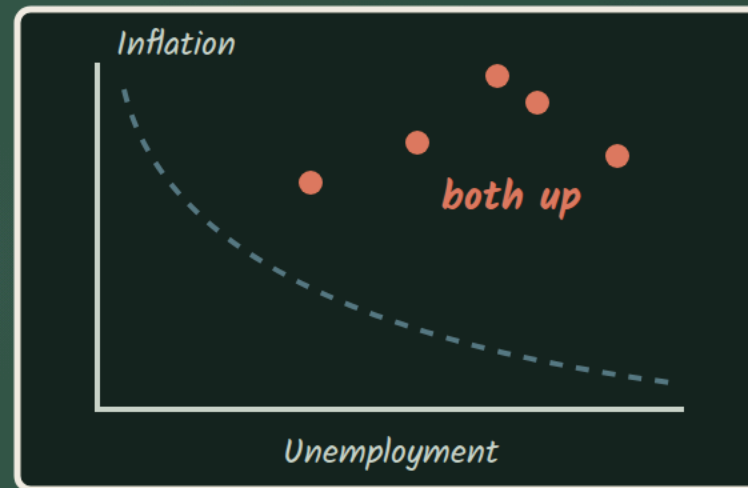
1960s



Push inflation up a little, unemployment comes down. It worked.



1970s



People expected the inflation and raised prices and wages first. The curve moved.

It held — until they leaned on it.

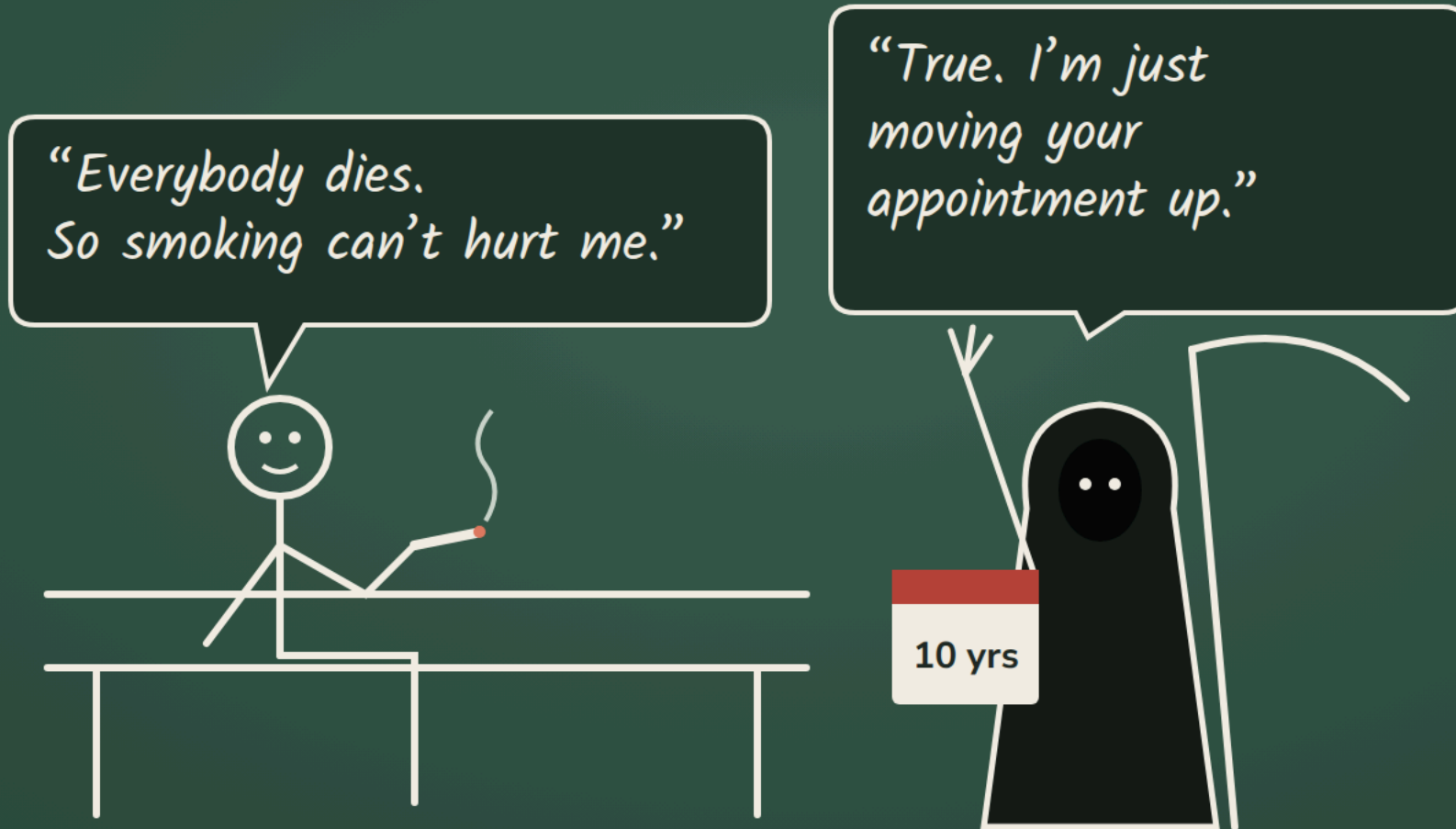
Correlations found under one set of rules can vanish when the rules change.

Friedman and Phelps, 1967–68; Lucas, 1976. U.S. inflation and unemployment both rose in the 1970s.

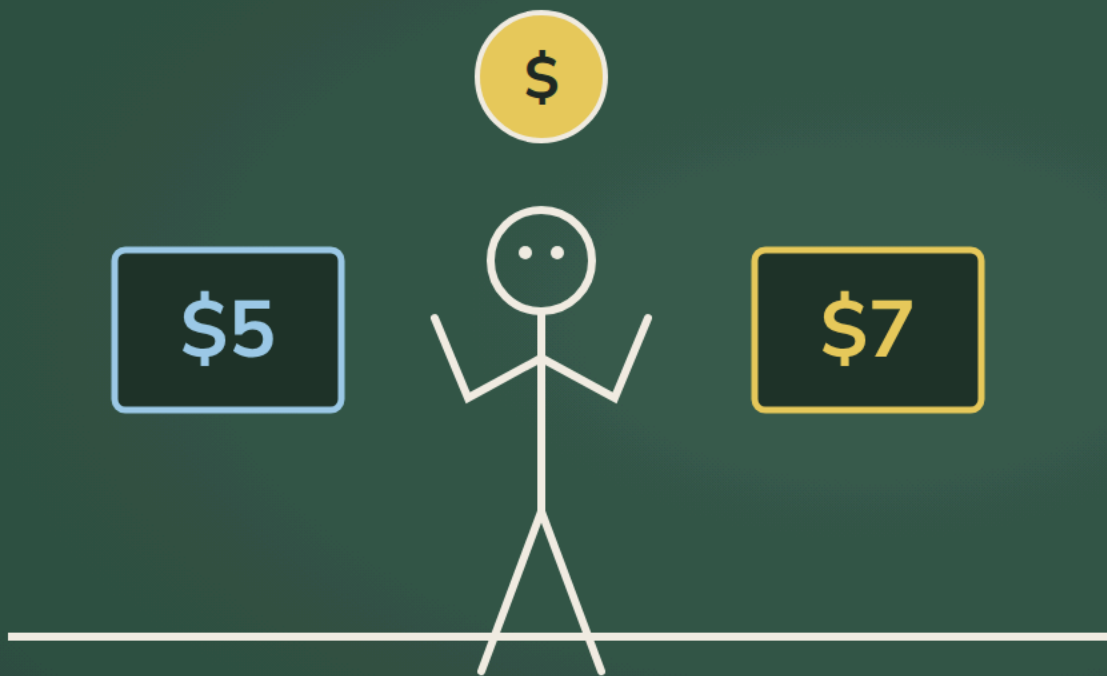
Causation can change risk — or timing.

*Smoking doesn't make death possible.
It makes earlier death more likely.*

*Smokers died about 10 years younger, on average.
Doll et al., BMJ 2004 (50 years of British doctors)*



How do you show a price causes fewer sales?



*Same bar. Same beer. Same crowd.
Each night a coin picks the price. Then count the pints.*

Change one thing. Count.

That is a randomized experiment. Medicine does it with pills. Economics rarely gets to.

Economists run these too

Question

Can a supported job raise later earnings?

Supported Work, 1970s

Does paying more cut medical care?

RAND, 1970s–80s

Does remedial tutoring help?

Balsakhi, India, 2000s

Who was assigned, by chance

Applicants → job offer, or control

Families → different insurance plans

Schools → which grade gets a tutor

What they found

Gains for women long on welfare; none lasting for youth

Less care used, including care that works

Scores up, most for pupils furthest behind; faded later

Results describe these programs and these people.

Did that prove causation?

Powerful evidence, when done well: chance did the assigning, so the groups were alike in everything else, on average.

Still to check: who refused, who dropped out, who affected the other group.

Compare everyone offered with everyone not offered.

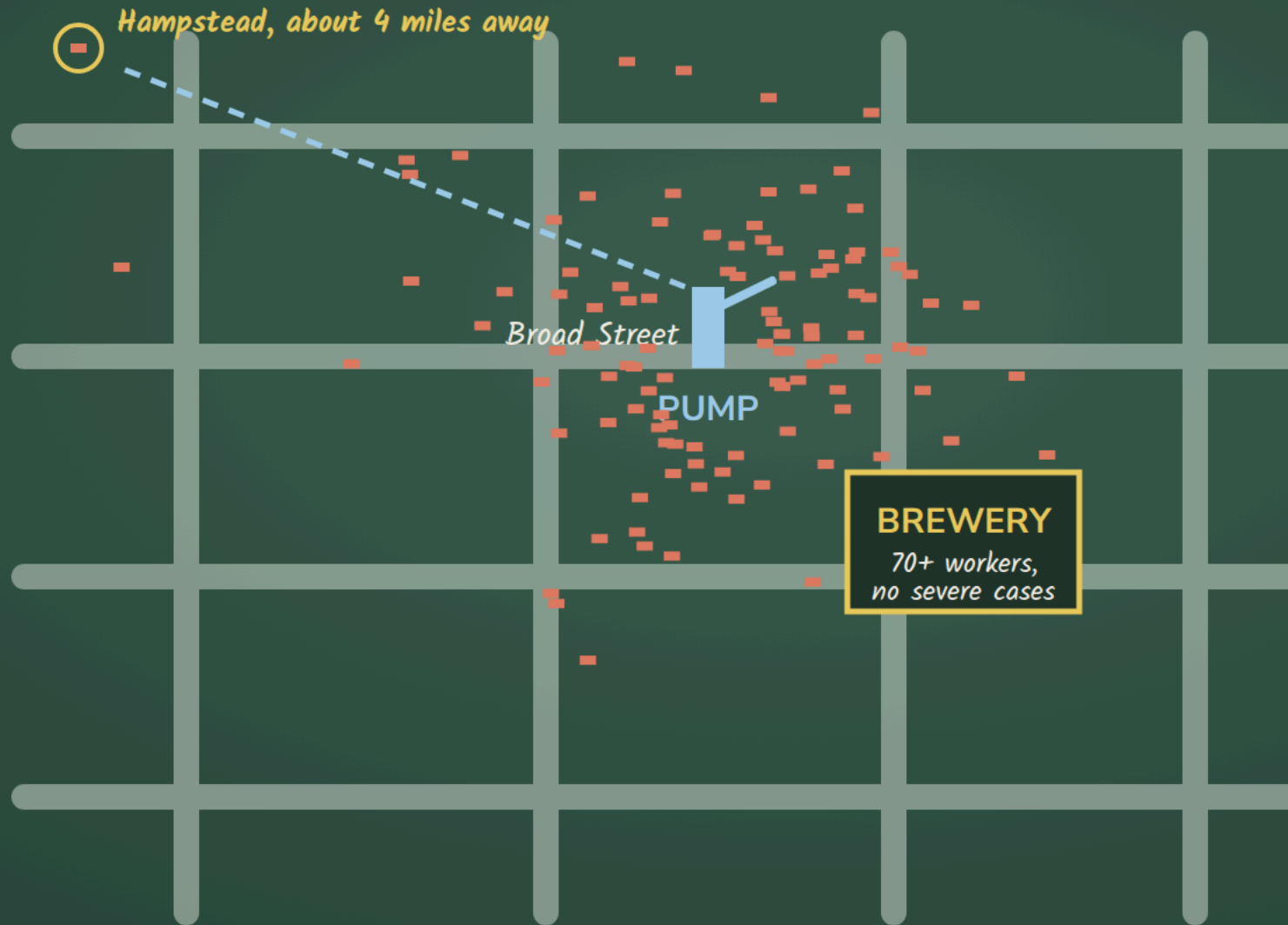
And a result for these people may not carry to other people, or to a program ten times the size.

ODD: PROGRAM
EVEN: CONTROL

Roll again. I wanted him
in the other group.



London, 1854: what was causing the cholera?



Deaths cluster around one pump.

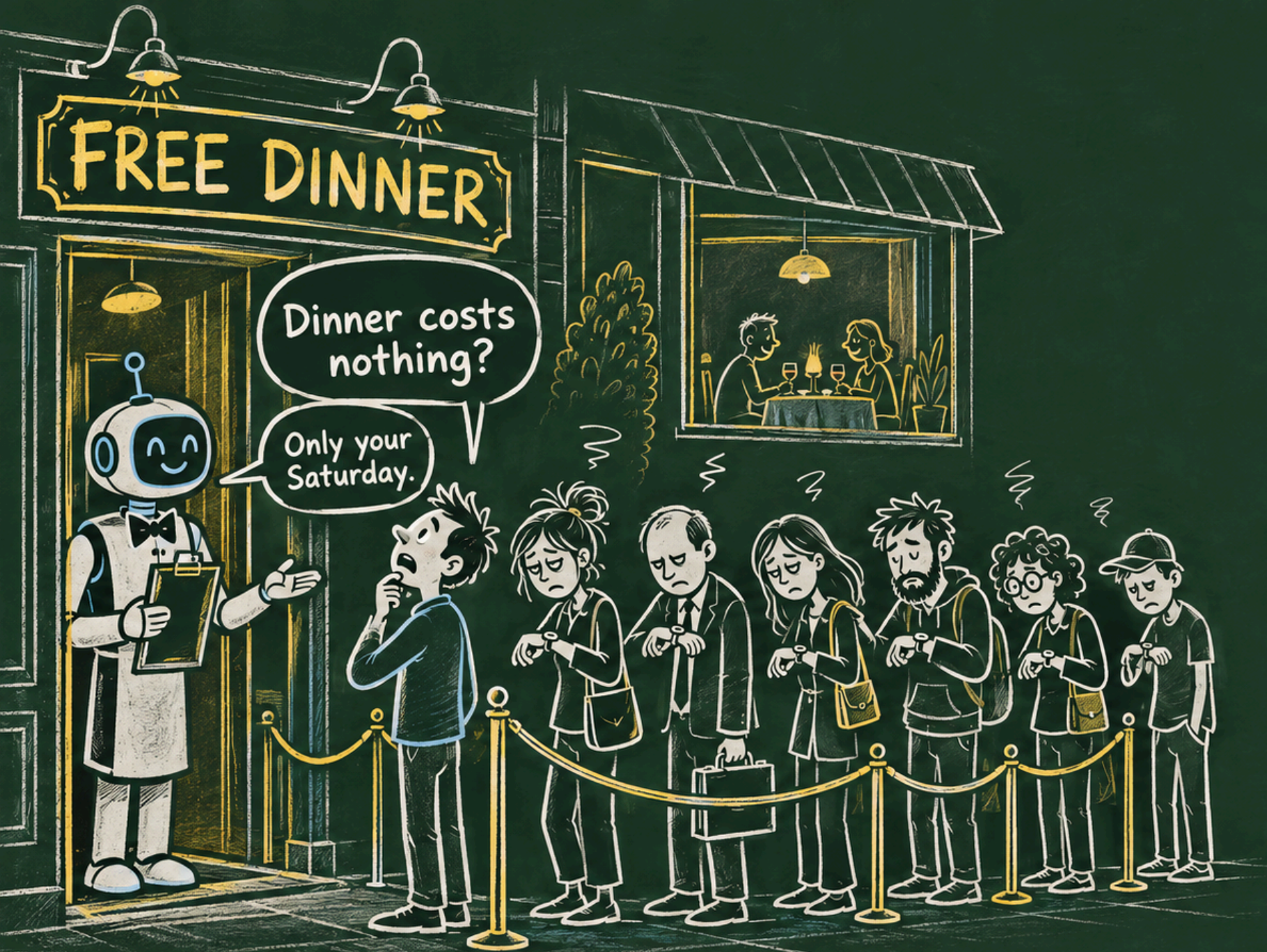
Nearby brewery workers mostly escape. They drank beer, not pump water.

A widow 4 miles away had the water carried to her. She died.

■ = one death (illustrative). Source: Snow, *On the Mode of Communication of Cholera*, 1855

What would happen to similar people, or similar markets, if this one thing were different?

Every one of these is trying to answer that question.



*Economics doesn't necessarily tell you
something you never knew.
It makes you say exactly what you mean.*

Your turn

Pause the video.

Three questions. The first one is from Part 1.

Have your Part 1 answers in front of you if you wrote them down.

Your turn

1

*The 90-percent-cheaper world, again.
Which of your Part I predictions
would you change now?
Which line moved, and in which markets?*

Your turn

2

What is still scarce?

How would it be allocated?

How should it be allocated?

Would is positive. Should is normative.

Your turn

3

*Your own biggest opportunity cost this year.
The best alternative you gave up, rather than the money.
Was it worth it?*

Try the tools on a real choice

*I was paid \$5,000 to teach a college class.
Who got a good deal?*

Next: Teaching Pay. Link in the description.

Companion pages, slides, worksheets: link in the description. © 2026 Vincent Maistre · CC BY 4.0.

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Companion page: [link in the video description](#)