Tools to Think Properly in the Age of AI

100 MENTAL MODELS, ONE PRACTICE AT A TIME



UNDERCURRENT · MMXXVI

WHAT REACHES YOU?

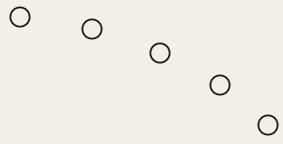
Notice

Most thinking errors start before the reasoning starts: in what got noticed, in what felt salient, and in what never entered the frame.

13 models · pages 16–36 · follow the path

WARM-UP · ONE DOT

Mark one place this question already applies in your week.



01 Map is not the territory
page 16

02 Availability heuristic
page 18

03 Anchoring
page 19

04 Framing
page 20

05 Selective attention
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06 Salience
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07 Contrast effect
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08 Priming
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09 Narrative fallacy
page 27

10 Survivorship bias
page 29

11 Visibility bias
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12 Signal vs noise
page 32

13 Abstraction ladder
page 34

THE STAGE

Not a reading list: a route. Start at 01, stop when one lands.

THE MARK

One dot is enough. You are not performing attention; you are locating it.

THE DOOR

Every model ends in a mark only you can make. The machine check is at the foot of each page.

☐ ONE DOT PLACED

Enter notice.

MODEL 01 · CONCEPT

Map is not the territory

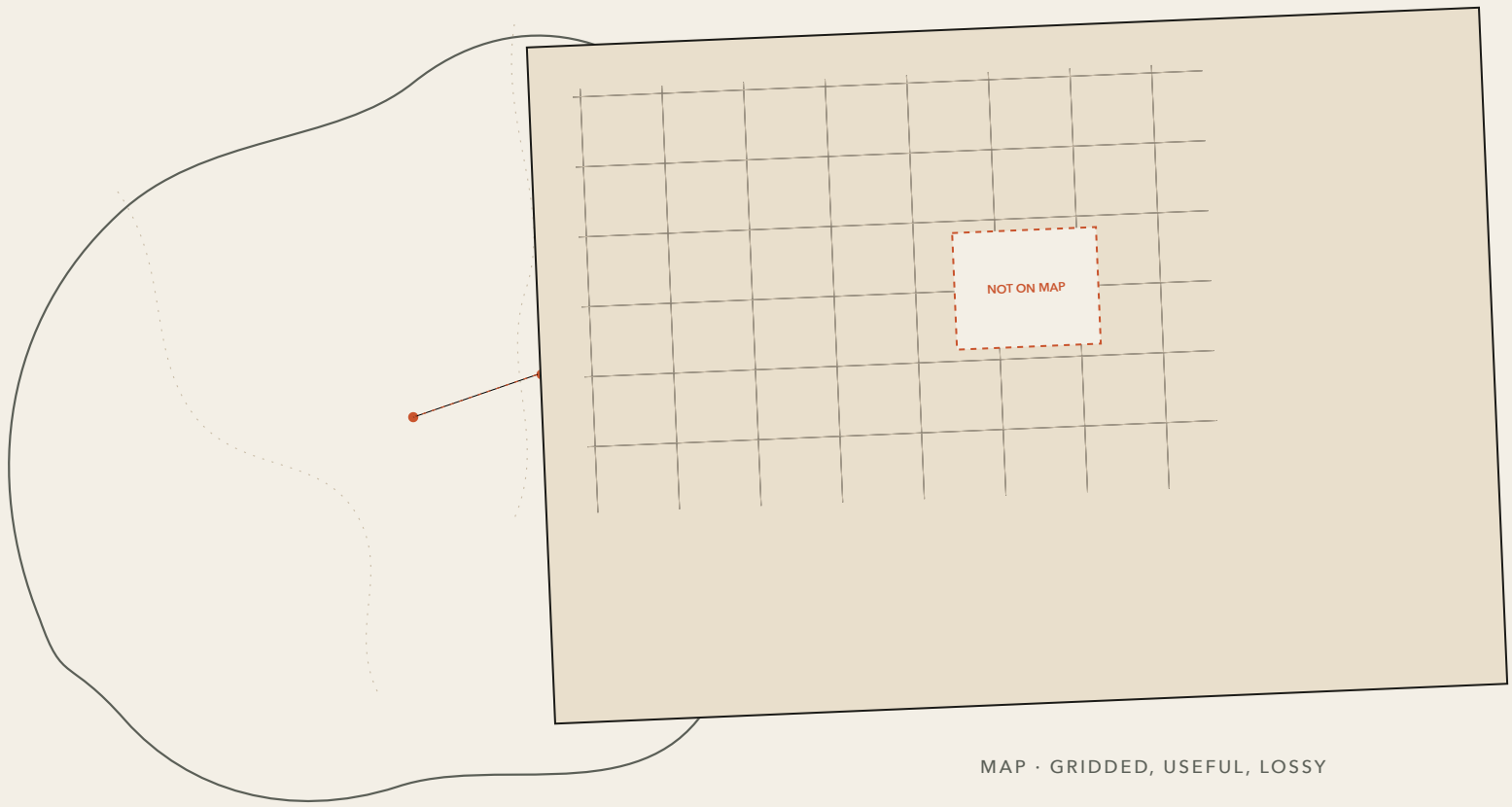
Every representation leaves part of the world out; a map, a model or a summary is not the thing it describes.

WHY NOW

AI produces fluent summaries and models of a situation while the assumptions that shaped them stay hidden.

WATCH FOR

It cannot tell you which omission matters in a particular case; that needs domain judgement.



MAP · GRIDDED, USEFUL, LOSSY

the bay the map leaves out

TERRITORY · CONTINUOUS, UNNAMED

PURPOSE

What was this map built to do?

OMISSION

What can it not show you?

TEST

Which missing piece would change the decision?

ONE OMISSION I WILL CARRY TO P17

NEXT

p17 draws the decision map.

Name the loss before you name the decision.

ONE WORD FOR THE LOSS

STAGE 02 · MODEL

THIRTEEN TOOLS

What shape is the situation?

BRAIN TARGET · STRUCTURAL MAPPING & CAUSAL SIMULATION

A model is a simplification you can work with: parts, relations, loops and constraints, seen before you argue about the answer.

IN THIS STAGE

Thirteen tools for seeing structure before you argue. Put a dot beside the one you will enter first.

FIG. 1 – THE MODEL STAGE, IN ORDER

01 First principles p38

02 Second-order thinking p40

03 Stocks and flows p42

04 Feedback loops p44

05 Bottleneck p46

06 Leverage points p48

07 Emergence p51

08 Network effects p54

09 Power laws p56

10 Homeostasis p57

11 Fermi estimation p58

12 Margin of safety p61

13 Circle of competence p62

The model I enter first: write its number in the dot.

THE 13 TOOLS SIT INSIDE ONE LOOP · EACH RETURNS TO NOTICE

☐ ONE MODEL CHOSEN

* *Enter model.*

MODEL 01 · FIRST PRINCIPLES CONCEPT

First principles

BRAIN TARGET · STRUCTURAL MAPPING & CAUSAL SIMULATION

Reduce a claim to its basic components and rebuild from what is actually established.

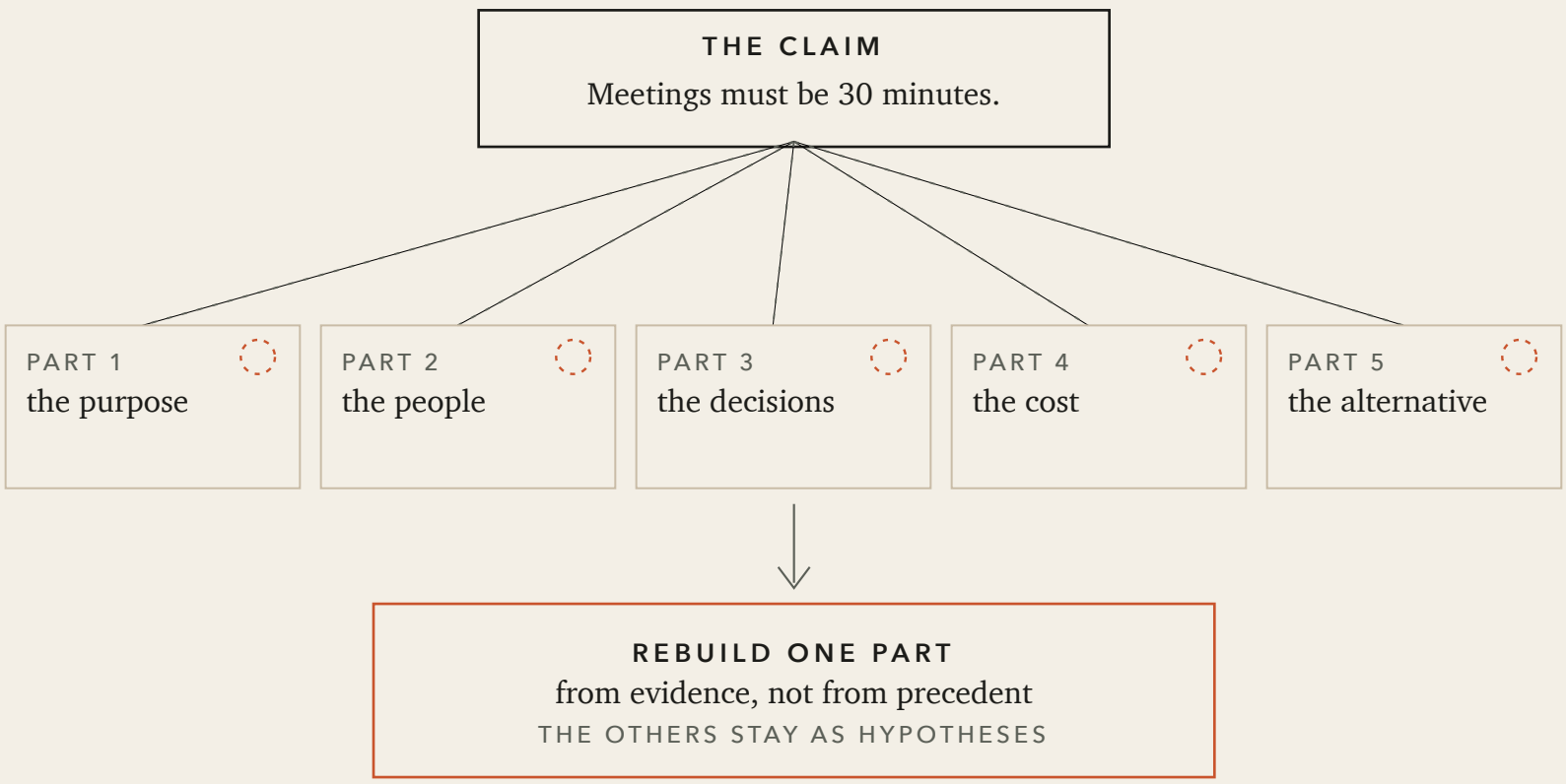
WHY NOW

AI is strong at assembling precedents, so first-principles work is the part that has to be done deliberately.

WATCH FOR

Costly and error-prone where fundamentals are unclear; most decisions should lean on precedent.

FIG. 1 – CIRCLE THE PART YOU WOULD REBUILD FIRST



WORKED MICRO-EXAMPLE

Claim: a good meeting is a short meeting.
Rebuilt part: decisions need enough time to be made, not the shortest possible slot.

THE CLAIM IS NOT DESTROYED; ONE PART IS PUT ON A FIRMER FOOTING.

THE TEST OF THE PAGE

A CLAIM STAYS A HYPOTHESIS UNTIL ONE PART IS REBUILT FROM EVIDENCE.

☐ ONE PART CIRCLED

* *Rebuild one part; leave the rest in view.*

MODEL 27 · 100

Base rates

DEFINITION

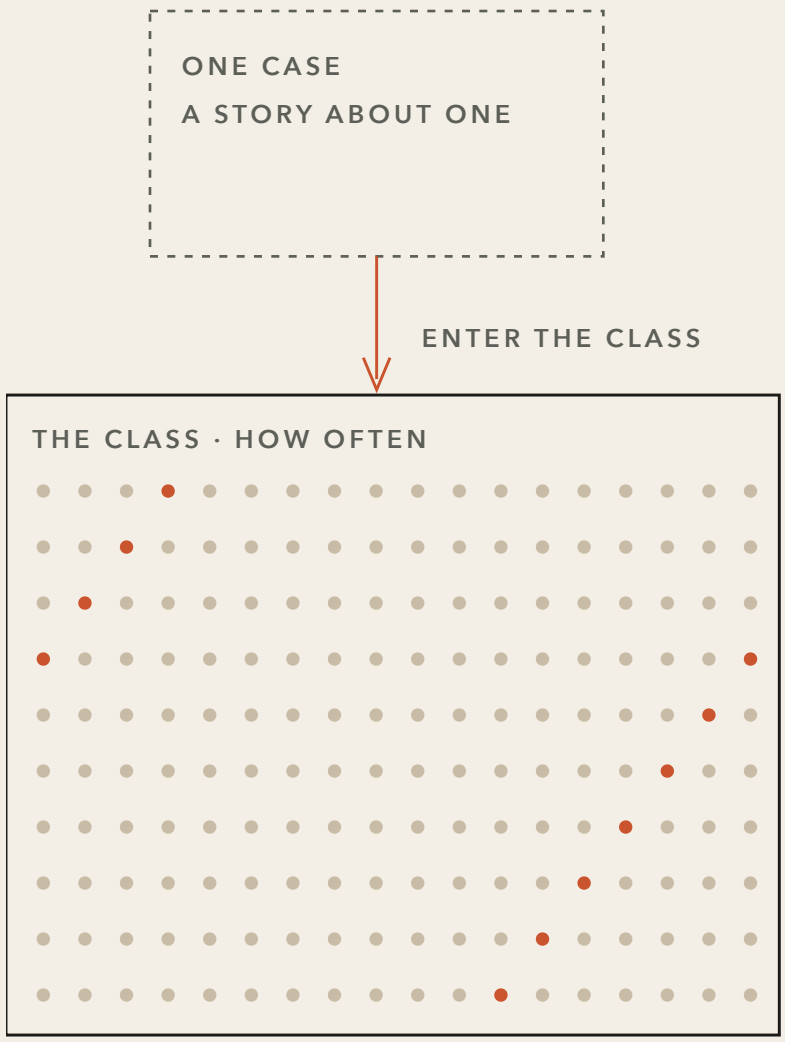
Start with how often something happens in the reference class before the story.

WHY IT MATTERS NOW

AI is fluent at case narratives and weak at showing the reference class, so base rates need separate work.

WATCH FOR

Choosing the right reference class is the hard part and can be done to suit a conclusion.



THE MOVE · NAME THE CLASS, THEN THE RATE

THE CLASS I WOULD USE

BASE RATE %

☐ CLASS AND RATE WRITTEN

WHAT WOULD CHANGE MY RATE

MACHINE CHECK

ASK

Ask for the reference class it used and the base rate it implies.

MARK

- ▫ RIGHT
- ▫ MISSES
- ▫ INVENTS

KEEP

Keep · one sentence that stays human

BRAIN TARGET · EVIDENCE DISCRIMINATION & CALIBRATION

☐ ONE CLASS NAMED, ONE RATE MARKED

A case is not a class.

MODEL 27 · 100

Base rates

THE MOVE

Write the reference class and base rate for one prediction; compare with the AI's answer.

MY PREDICTION

THE REFERENCE CLASS

THE BASE RATE I EXPECT

WHAT THE CASE ADDS

THE ANSWER IT GAVE

WHAT I CHANGE AFTER COMPARING

☐ RIGHT ☐ MISSES THE CLASS

MACHINE CHECK

ASK

Ask for the reference class and the base rate for the same prediction.

MARK

- ▫ RIGHT
- ▫ MISSES
- ▫ INVENTS

KEEP

Keep · one sentence that stays human

BRAIN TARGET · EVIDENCE DISCRIMINATION & CALIBRATION

☐ ONE CLAIM TESTED, ONE CONFIDENCE MARKED

CONFIDENCE AFTER

○ ○ ○ ○ ○

Let the class speak first.

JUDGE · MODEL 01/12

BRAIN TARGET · MORAL SALIENCE & POWER ANALYSIS

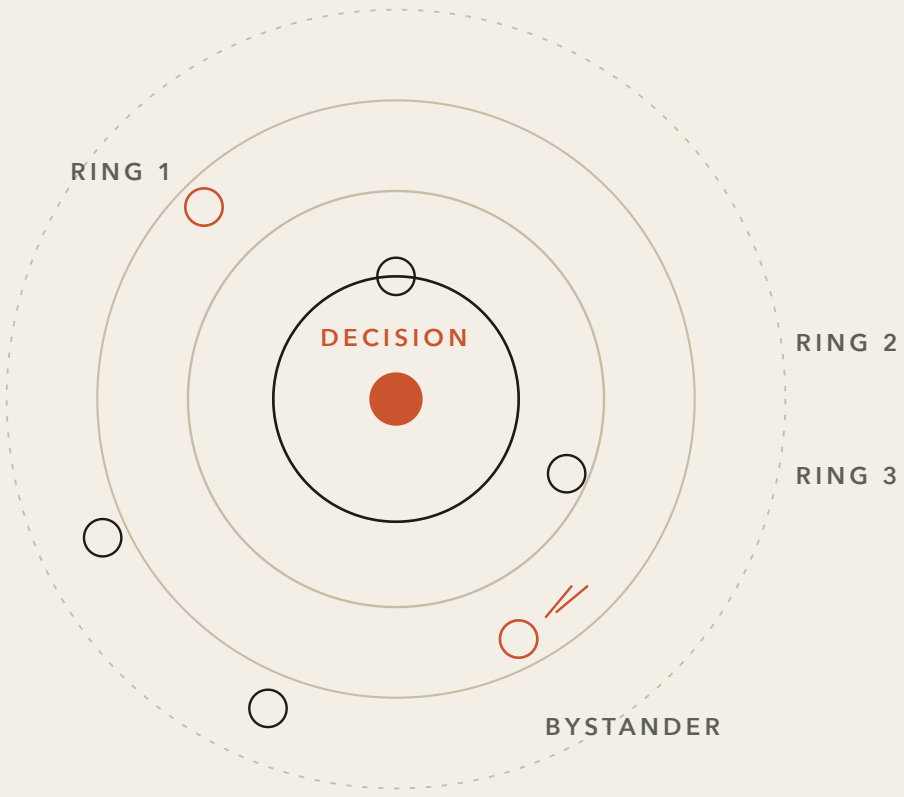
Externalities

DEFINITION

A decision pushes a cost or benefit onto someone who did not choose it.

WHY NOW

AI systems create data, attention and labour externalities that their users never see or pay for.



WATCH FOR

Measurement and attribution of external effects are contested.

WHY IT PAYS

Makes visible who bears the cost of a choice, which is where governance problems start.

THE MOVE AHEAD

Map one decision's spillover; mark who pays and who chose.

WHAT THIS PAGE TRAINS · MORAL SALIENCE & POWER ANALYSIS

ONE PLACE THIS ALREADY APPLIES IN MY WEEK

· NEXT: VEIL OF IGNORANCE

* *The cost is in the room. Name it.*

CO-WORK · MODEL 01/12

BRAIN TARGET · TRUST CALIBRATION & VERIFICATION

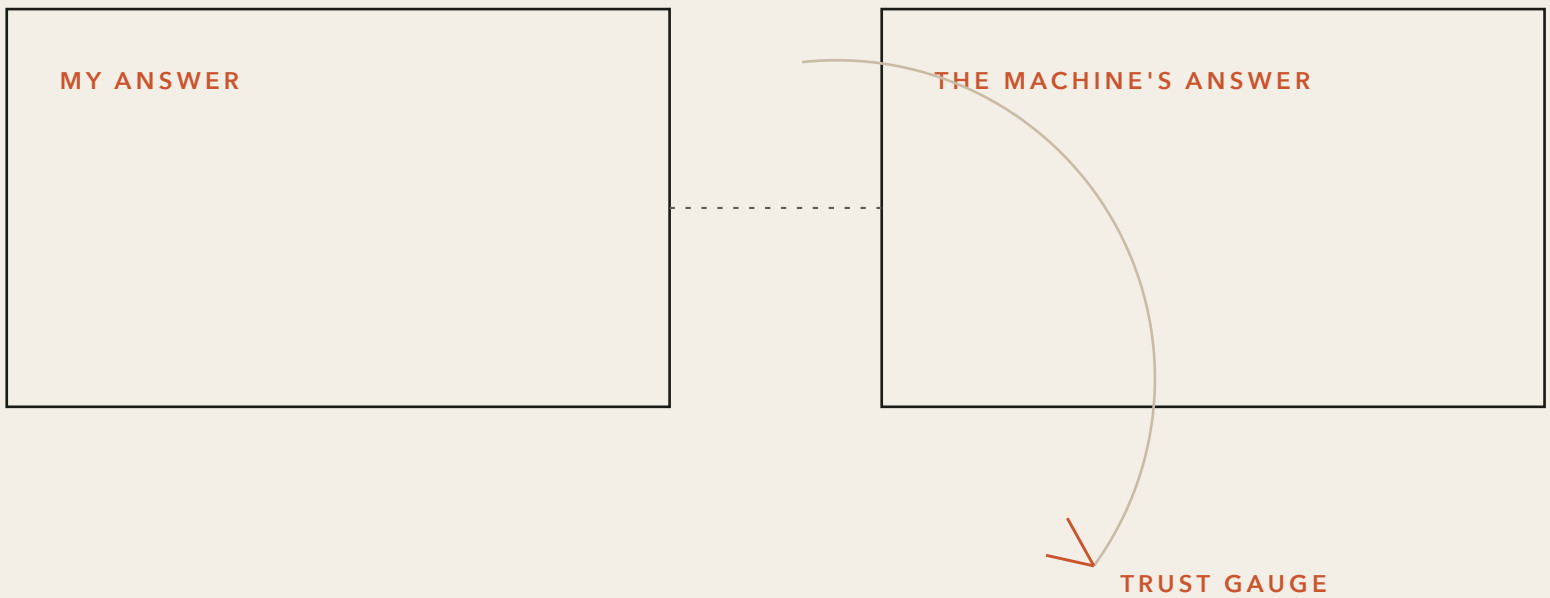
Automation bias

DEFINITION

People over-trust automated suggestions, especially when the output looks authoritative.

WHY NOW

Fluent generative output makes automation bias more likely and the review loop more important.





answer first

WATCH FOR

Verification is costly and cannot scale to every output.

WHY IT PAYS

Makes the case for verification routines before the output is acted on.

THE MOVE AHEAD

Answer a question yourself, then compare with AI; mark every change you made only because of the model.

WHAT THIS PAGE TRAINS · TRUST CALIBRATION & VERIFICATION

ONE PLACE THIS ALREADY APPLIES IN MY WEEK

· NEXT: ALGORITHM AVERSION

* *Count the changes the machine made.*

CO-WORK · MODEL 01/12

BRAIN TARGET · TRUST CALIBRATION & VERIFICATION

Automation bias

THE MOVE

Answer a question yourself, then compare with AI; mark every change you made only because of the model.

BEFORE THE MACHINE	THE OUTPUT	AFTER THE COMPARE

MY ANSWER

ITS ANSWER

CHANGED ONLY BECAUSE THE MACHINE SAID SO

MACHINE CHECK

Answer first, then ask. Mark every change made only because of the output.

MARK ☐ GETS RIGHT ☐ MISSES ☐ INVENTS

KEEP ONE SENTENCE OR MARK THAT STAYS HUMAN

☐ SIGNED

☐ FINISH · ONE OUTPUT CHECKED, ONE HUMAN JUDGMENT KEPT.

WHY IT PAYS

Makes the case for verification routines before the output is acted on.

ONE LINE TO CARRY

· NEXT: ALGORITHM AVERSION

* *Count the changes the machine made.*

Index of 100 Models

Tick a model when you have worked it. The stage you leave unticked is your next visit.

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- ☐ Adverse selection — COORDINATE · P.125
- ☐ After-action review — LEARN · P.153
- ☐ Algorithm aversion — CO-WORK · P.189
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B

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The index is also a diagnostic: a reader can see which stage they have not visited.

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TICK WHILE YOU WORK · THE COUNT MATTERS ON PAGE 216