

CHOICE OVERLOAD STUDIO

The architecture of enough

An independent field guide to choice architecture, decision fatigue, comparison design, and the hidden costs of a supposedly simple menu.



COUNT IS ONE INPUT. PRESENTATION IS ANOTHER.

The interactive model in this guide is deliberately modest. It can show which information a design foregrounds; it cannot read a visitor's mind or calculate a universal best choice.

What does a display make possible?

A catalogue is not a neutral window onto options. It decides which differences are immediate, which require memory, and which remain out of view.

Central thesis. More options can expand possibility, but can also relocate the burden of comparison onto the chooser. The design of comparison matters as much as the count. A clear catalogue may preserve useful variety; a narrow menu may erase an unusual but important fit.

THE CONTESTABLE PROPOSITION

“A good choice interface does not merely reduce the number of options. It makes relevant differences findable, comparable, and contestable.”

Strongest reasonable objection. A larger, searchable set can improve fit when preferences are stable, differences are meaningful, and the rare option matters. Simplifying too aggressively transfers the designer's assumptions into the shortlist.

Where the proposition fails. If a chooser knows the required feature and can scan accurate labels, a full shelf may outperform a staged shortlist because it keeps the long tail visible.

THREE LEARNING OUTCOMES

01**Separate count from comparison.**

Keep the option set fixed while changing how it is shown.

02**Name a hidden trade-off.**

Explain what a display foregrounds and what a chooser must supply.

03**Make a reversible, good-enough plan.**

Set conditions and a review point without pretending there is a universal winner.

The outcome has more than one cause

Use the map to resist a simple story: option count feeds into an experience, but it does not determine the whole experience by itself.

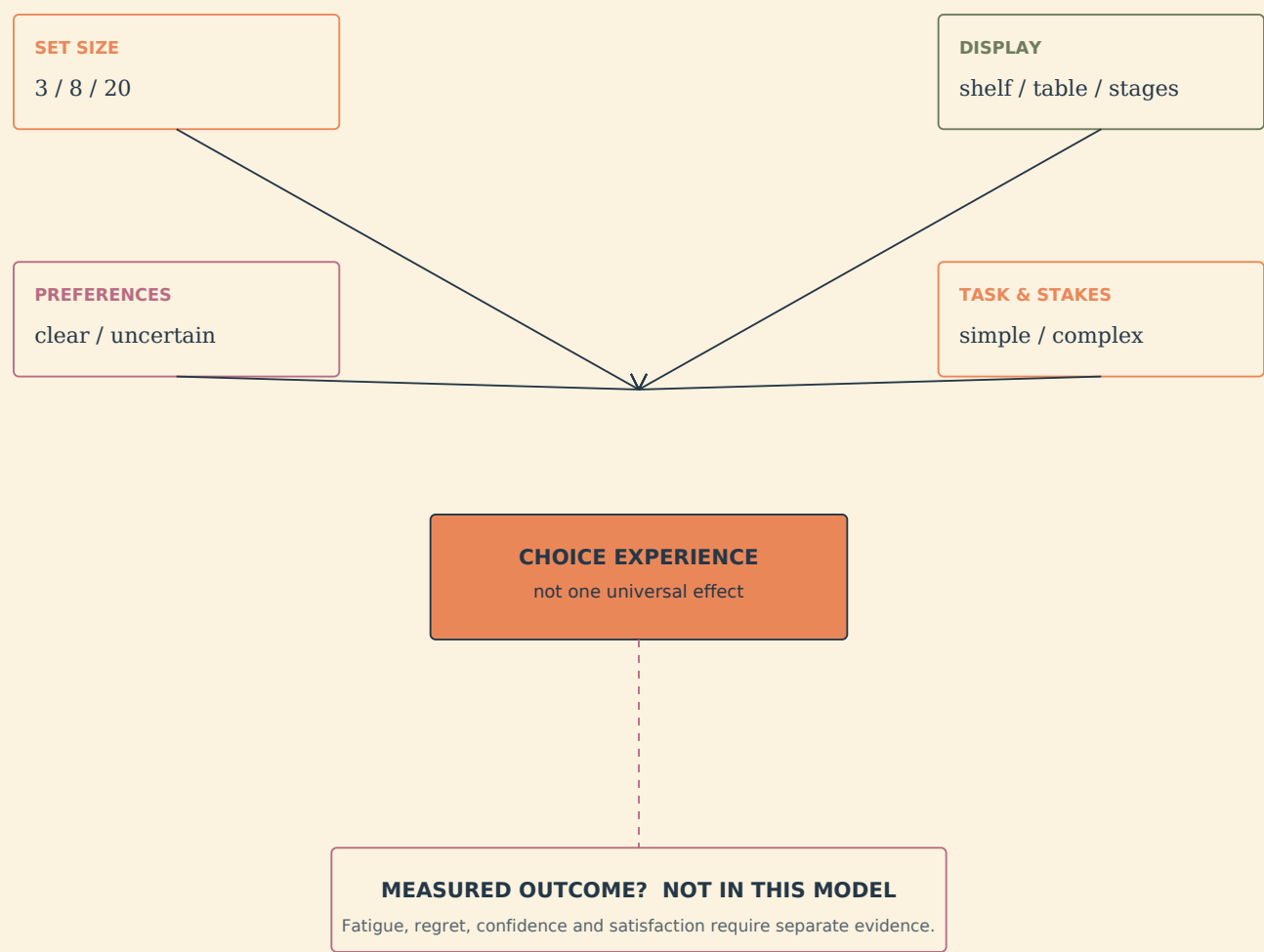


Figure 1. A conceptual map of choice architecture. The experiment changes count, display mode, and priorities. It describes interface consequences (what is visible and what is harder to compare). Fatigue, regret, confidence and satisfaction sit beyond the model and would require separate operational definitions and evidence.

Five mechanisms worth separating

These terms overlap in conversation but make different claims. Keep them separate when discussing a design or evaluating a study.

Choice-set size

How many alternatives are available or shown. The available set and the first screen need not be identical.

Attribute complexity

How many dimensions distinguish options, whether those dimensions are comparable, and how much interpretation they require.

Preference uncertainty

How clearly the chooser knows which attributes matter and how they trade them off.

Decision goal

Whether the task rewards speed, fit, exploration, risk reduction, learning, or justification.

Choice architecture

How options are organized, described, ordered, defaulted, or compared. Presentation can change attention without changing underlying options.

Satisficing

A stopping rule: choose an option that meets stated requirements rather than attempting an exhaustive optimum.

Choice deferral

Not making a selection at the current time. It may signal difficulty, sensible caution, low stakes, or no acceptable option.

Reaction time

A defined interval in a task. It is not a synonym for fatigue, dissatisfaction, or regretting a life choice.

Reversibility

How easily a choice can be changed, and who bears the cost of changing it.

Missingness

An absent attribute is unknown, not automatically zero or poor. Interfaces should show unknowns explicitly.

Practical rule: if a claim uses “overwhelmed,” “optimal,” “fatigued,” or “better,” ask what was measured, for whom, on what task, and compared with what.

The jam study: a challenge, not a universal law

Iyengar and Lepper (2000) published three field and laboratory studies on the consequences of larger versus smaller assortments.

WHAT THE PAPER REPORTS

Across the studies, participants were more likely to purchase gourmet jam or chocolates, or undertake an optional essay assignment, when offered a smaller set (six) than a larger set (24 or 30). The authors also reported differences in subsequent satisfaction and essay quality.

What it supports. It challenges the assumption that more choice always increases motivation. Under the study conditions, larger assortments were not automatically beneficial.

What it does not settle. It does not establish that 6 is the ideal number for every interface, consumer category, population, or task. A study of jam sampling is not direct evidence about choosing a career, a school, a treatment, or a community.

Strong counter-reading. The effect may depend on the meaningfulness and similarity of alternatives, the task, the participants' preferences, and the cost of evaluating the set. Subsequent meta-analytic reviews found substantial variation across experiments and disagree about how consistently the overload effect appears.

A fair interpretation

The study gives designers a reason to examine assortment size and choice architecture. It does not license a blanket rule to shrink menus. A responsible follow-up asks which people, which options, which task, and which outcome.

Primary source: Sheena S. Iyengar and Mark R. Lepper, "When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?" *Journal of Personality and Social Psychology* 79(6), 995–1006 (2000). [DOI and paper record](#).

Medicare Plan Finder: comparison as a service

In August 2019, the US Centers for Medicare & Medicaid Services announced a redesigned Medicare Plan Finder for comparing Medicare Advantage and Part D coverage options.

WHAT THE PUBLIC RECORD SAYS

The CMS announcement described a mobile-friendly, easier-to-read experience, a guided enrollment process, personal drug lists, and side-by-side comparison of up to three drug plans or three Medicare Advantage plans. It also said consumer testing had been conducted during development.

Why this case belongs here. The product did not simply choose a smaller world. It organized a high-stakes set of plans into a guided task with comparable attributes. It also retained traditional customer-service routes, which matters when a digital tool is not the right support channel for every person.

Evidence boundary. The source is an official agency announcement describing changes and intentions. It is evidence that the redesign occurred and how CMS described it; it is not an independent evaluation showing that users made better selections, saved money, or experienced less decision fatigue.

Design questions raised by the case. Which information should be displayed side-by-side? When is a three-item comparison useful? How can the system keep the broader plan set discoverable? What support is available when the user's situation does not fit the interface?

A service-design lesson

Comparison support can be a complement to choice, not a substitute for it. The goal is not to hide the catalogue but to create a credible path through it and make the basis of comparison visible.

Primary documentation: Centers for Medicare & Medicaid Services, "Medicare Plan Finder Gets an Upgrade for the First Time in a Decade," 27 August 2019. [Read the original announcement.](#)

Option Design Experiment: exact rules

The interaction is reproducible by design. The input values describe the display; none of them is used to infer a person's cognitive state.

Input	Allowed values	Default	Rule / effect
Context	12 fictional rooms	Book club	Changes names, stakes, constraints and stopping rules; each room has 20 labelled choices.
Option count	3 / 8 / 20	8	Selects the first N profiles from a fixed 20-profile dataset.
Display mode	Shelf / table / stages	Shelf	Changes layout and reveal order; no profile is silently added or removed.
Priority 1	Cost / time / access / novelty / repair	Cost	Sets primary sort key in staged mode.
Priority 2	Same five; must differ from P1	Access	Lexicographic tie-break in staged mode; no sum or weighted score.
Bookmarks	0-3 profile IDs	Empty	Keeps a small temporary comparison tray in page memory.
Export / print	Text download / browser print	Off	Creates a client-side note; no upload or cloud save.

DETERMINISTIC TRANSFORMATION

1. Build the selected set from the first N fixed synthetic profiles in the chosen room. 2. Shelf mode keeps stable ID order. 3. Table mode exposes the same attributes and allows explicit column sorting. 4. Staged mode sorts lexicographically by priority 1 then priority 2, then ID, and reveals three at a time. 5. All modes show a trade-off statement and remind visitors that missing or qualitative values cannot be settled by rank.

KNOWN FAILURE STATE

If scenario data fail to load or fail the expected 12 × 20 structure check, the interaction reports an error and the static explanation remains. An empty bookmark tray is explicit. Adding a fourth bookmark is refused with a message. Invalid counts and duplicate priorities are normalized to a valid state; no partial data is treated as evidence.

Input → rule → output → counterfactual

Room: Workshop venue. The underlying synthetic set is held fixed while count, display and priorities are changed.

BASELINE

INPUT: 8 options · Shelf · Cost first · Accessibility second

RULE → VISIBLE OUTPUT: Eight profiles appear in stable ID order. Each card shows the same five ordinal attributes. The ledger says browsing is easy and side-by-side comparison requires more memory.

LIMIT / COUNTERFACTUAL: No conclusion about fatigue or best choice is supported.

PERTURBATION

INPUT: Same 8 options · Table · Same priorities

RULE → VISIBLE OUTPUT: The table exposes values in aligned columns. Sorting changes order only; the option IDs remain the same. Missing context remains missing.

LIMIT / COUNTERFACTUAL: This tests the presentation rule, not how a real person behaves.

COUNTEREXAMPLE

INPUT: 20 options · Table or shelf · Clear preferences

RULE → VISIBLE OUTPUT: A specialist can inspect more options because a rare compatibility feature may be in the long tail. A three-item menu would have hidden the option at profile P17.

LIMIT / COUNTERFACTUAL: More options can improve fit when added alternatives matter and are discoverable.

Reproducibility fixture: count changes the size of the set; mode changes layout/reveal logic; priorities affect staged order only.

Three displays, three kinds of attention

A display is a way of allocating comparison work. Each has an upside, a blind spot, and a reason not to make it the only available view.

A / SHELF

Browse & notice



Easy: discovery
Hard: comparison

B / TABLE

Compare criteria

Easy: consistency
Hard: missing values

C / STAGES

Reveal in groups



Easy: first step
Hard: long-tail visibility

SAME SYNTHETIC SET → DIFFERENT ATTENTION PATHS

No display mode owns every relevant value.

Full shelf. Strong for browsing, serendipity, and discovering options outside an early model. Weak when each option demands remembering different attributes.

Criteria table. Strong for consistent comparison and visible differences. Weak when the criteria are incomplete, hard to quantify, or too numerous to scan.

Staged shortlist. Strong for beginning with a small set while retaining a path to more. Weak when early ordering determines what the visitor never sees.

Counterexample: A visitor whose need is rare and clearly specified may rationally prefer the complete catalogue. The right response is not to remove the long tail, but to improve findability and keep the full list accessible.

Six contexts, six different constraints

Each room is a fictional prompt. Use it to test whether a display preserves the values and constraints that matter.

ROOM 01

Book club format

Schedules, reading speeds, languages and speaking comfort differ.

Stop: pilot two meetings. Overlooked: a way to attend without finishing.

ROOM 02

Workshop venue

Access, equipment, noise, transit, setup time and cost can rule venues out.

Stop: pass non-negotiables, then book a cancellable pilot.

ROOM 03

Neighbourhood event

Weather, cost, child-friendliness and social energy shape who attends.

Stop: one event with a rain plan. Overlooked: short or non-speaking participation.

ROOM 04

Appliance planning

Repair, energy, space, service and time without the item are distinct costs.

Stop: one repair estimate plus one replacement estimate.

ROOM 05

Commute arrangement

Safety, access, weather and shift times can be more important than speed alone.

Stop: trial a safe route and retain a backup.

ROOM 06

Volunteer contribution

Time, travel, support, privacy and emotional labour vary.

Stop: a bounded task with a clear exit route.

Six more contexts, no universal menu

A “good enough” rule should belong to the people affected and remain open to revision.

ROOM 07

Learning project

Feedback, tools, prior knowledge and attention are limited.
Stop: one artifact finishable in two sessions.

ROOM 08

Shared meal

Diet, time, money, kitchen access and cleanup affect inclusion.
Stop: one clearly labelled, low-effort plan.

ROOM 09

Hobby group

Skill gaps, social energy, travel and beginner confidence differ.
Stop: three meetings with a no-pressure exit.

ROOM 10

Workflow tool

Privacy, export, maintenance, accessibility and lock-in matter.
Stop: a small pilot with dummy data and deletion test.

ROOM 11

Weekend plan

Energy, weather, care duties and desired company can change the fit.
Stop: one anchor activity and an unplanned block.

ROOM 12

Shared community space

Access, quiet, safety, storage and use by different groups can conflict.
Stop: temporary schedule with a public review date.

Worked exercise: choose a workshop venue

Fictional sample data. Ordinal values are illustrative; the task is to practice describing a trade-off, not to calculate an objective winner.

Option	Cost	Time	Access	Novelty	Repair / adapt
Library room	2	2	5	2	4
Maker studio	4	4	4	5	4
Community hall	2	3	4	2	3
Garage workshop	1	4	2	4	2

SAMPLE ANSWER

Non-negotiable: step-free access, enough room for the activity, a safe route, and a venue fee the group can afford. First exclude any venue that fails one of these requirements. Do not let high novelty compensate for a safety failure.

Good-enough stopping rule: “For the pilot, choose any venue that passes the access and safety checks, is available on the date, and can be changed after one session.” The rule avoids debating attributes that do not matter to this first step.

Overlooked value: the setup and cleanup load may fall on one volunteer. Ask who opens, moves equipment, cleans, and locks up before treating low rental cost as low total cost.

Critical reflection

Which option became visible only after the display changed? Which attribute could not be fairly ranked? Who bears the cost of a “simple” choice? What evidence would change your recommendation?

Compare without pretending to total everything

Print this page or copy it onto paper. Write down the non-negotiables first; the grid is a prompt for thought, not a scoring model.

Decision room / question: _____

Who is affected, and what constraints are real?

Attribute	Option A	Option B	Option C
Cost / resource use			
Time / coordination			
Accessibility			
Novelty / learning			
Repairability / reversibility			
Missing information			
Who does extra work?			

My two priorities, in order: 1. _____ 2. _____

What is not captured by this table?

The good-enough exit

Use this to name an acceptable next step and a review condition. A good-enough rule is not a reason to ignore important risk or dismiss someone else's needs.

1. WHAT MUST BE TRUE?

Write only true non-negotiables, including access, safety, deadline or budget constraints.

2. WHAT CAN BE TRADED?

Name the attribute that may vary and the trade-off you are willing to accept.

3. WHO ELSE BEARS A COST?

Include setup, maintenance, emotional labour, switching cost, and downstream consequences.

4. WHAT IS THE STOPPING RULE?

"I will choose the first option that meets ____, ____, and ____."

5. HOW CAN THIS BE REVERSED?

Name a pilot length, review date, return route, or point at which you can reconsider.

6. WHAT WOULD CHANGE YOUR MIND?

A counterexample or missing fact that would invalidate the current plan.

Reminder: If the consequences are not reversible, "good enough" should include an honest account of uncertainty and the people who need to participate. A short menu is not an ethical substitute for due process.

Two defensible interpretations

The point is not to decide which research camp wins in general. It is to name what would make either interpretation plausible in a specific task.

Interpretation A: overload can occur

A larger, more complex set may make comparison harder when the task is difficult, preferences are uncertain, the options are hard to distinguish, or the chooser wants to minimize effort. A small, structured menu can then help people begin.

Interpretation B: variety protects fit

More options may help people with unusual requirements, expert knowledge, diverse needs, or exploratory goals. A shortened menu may conceal minority needs and turn the designer's view of "reasonable" into the only visible world.

What would distinguish them? Compare equivalent tasks, keep the underlying option set constant when testing presentation, and specify outcomes in advance. Task completion, comprehension, choice deferral, confidence, regret and later satisfaction are different outcomes. If you change set size, labels, ordering and defaults all at once, you cannot say which change mattered.

ETHICAL AND EPISTEMIC BOUNDARIES

- No diagnostic inference: the interface does not identify indecision, attention deficits, or psychological vulnerability.
- No fabricated realism: the profiles and room examples are fiction; they are not testimonials, observed shopping data, or real product recommendations.
- No universal number: 3, 8 and 20 are demonstration settings, not empirical thresholds for an ideal choice set.
- No hidden objective: priorities are selected by the visitor; the experiment calculates no weighted personal-worth or best-choice score.
- No unsupported outcome claim: the CMS case documents design changes, not independent proof of better health-plan choices.
- No invisible storage: interaction state remains in the current page; export or print happens only after an explicit action.

Claim, source, and alternative reading

A source is relevant only to the claim it actually supports. A published result is not an automatic license to make a broader empirical claim.

Choice-set size may sometimes reduce engagement

Source: Iyengar & Lepper (2000), *Journal of Personality and Social Psychology*; three field/lab studies.

Alternative / boundary: Does not show 6 is universally ideal; category, task, and context matter.

Average effects varied across conditions

Source: Scheibehenne, Greifeneder & Todd (2010), meta-analysis of 63 conditions from 50 experiments, N=5,036.

Alternative / boundary: Mean effect was near zero with substantial variance; does not rule out effects under specific moderators.

Complexity and goals may moderate choice overload

Source: Chernev, Böckenholt & Goodman (2015), meta-analysis of 99 observations, N=7,202.

Alternative / boundary: Moderator findings do not create a one-size-fits-all design recipe.

A public plan-finder redesign used guided comparison

Source: CMS press release, 27 Aug 2019, describes plan comparison, mobile-friendly design, user testing.

Alternative / boundary: Agency release records a redesign and intentions; it is not independent outcome evaluation.

Defaults can alter enrolment behavior

Source: Madrian & Shea (2001), QJE, automatic enrolment in one large U.S. firm.

Alternative / boundary: A default-design case, not evidence that option count alone explains choice.

Reaction time relates to information uncertainty in a defined task

Source: Hick (1952) and Hyman (1953) on choice reaction-time experiments.

Alternative / boundary: Laboratory reaction time does not equal decision fatigue in complex life decisions.

Evidence and methods / 01

Eight credible sources are required for the project brief; the list below includes ten sources, grouped by the claim they help examine.

Verification note: references on pages 17–18 were checked against publisher, journal, database, or agency pages on 28 October 2026. This confirms bibliographic identity and the linked page, not independent replication of every claim.

1. Iyengar, S. S. & Lepper, M. R. (2000). “When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?” *Journal of Personality and Social Psychology*, 79(6), 995–1006.

Original field/laboratory work frequently called the jam study; use it for the specific experiments and reported outcomes, not a universal limit.

[Open source record](https://doi.org/10.1037/0022-3514.79.6.995) · <https://doi.org/10.1037/0022-3514.79.6.995>

2. Scheibehenne, B., Greifeneder, R. & Todd, P. M. (2010). “Can There Ever Be Too Many Options? A Meta-Analytic Review of Choice Overload.” *Journal of Consumer Research*, 37(3), 409–425.

Meta-analysis: 63 conditions from 50 experiments, N=5,036; mean effect virtually zero and considerable variation across conditions.

[Open source record](https://doi.org/10.1086/651235) · <https://doi.org/10.1086/651235>

3. Chernev, A., Böckenholt, U. & Goodman, J. (2015). “Choice Overload: A Conceptual Review and Meta-Analysis.” *Journal of Consumer Psychology*, 25(2), 333–358.

Review and meta-analysis discussing moderators including complexity, task difficulty, preference uncertainty and decision goal.

[Open source record](https://doi.org/10.1016/j.jcps.2014.08.002) · <https://doi.org/10.1016/j.jcps.2014.08.002>

4. Centers for Medicare & Medicaid Services. (2019, 27 August). “Medicare Plan Finder Gets an Upgrade for the First Time in a Decade.”

Official announcement of the Medicare Plan Finder redesign, comparison features, mobile-friendly presentation and consumer testing. It documents the agency’s account of the redesign.

[Open source record](https://www.cms.gov/newsroom/press-releases/medicare-plan-finder-gets-upgrade-first-time-decade) · <https://www.cms.gov/newsroom/press-releases/medicare-plan-finder-gets-upgrade-first-time-decade>

5. Madrian, B. C. & Shea, D. F. (2001). “The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior.” *Quarterly Journal of Economics*, 116(4), 1149–1187.

A contrasting choice-architecture case: automatic enrolment and defaults affect participation and default behavior; not a choice-count study.

[Open source record](https://doi.org/10.1162/003355301753265543) · <https://doi.org/10.1162/003355301753265543>

Evidence and methods / 02

Reaction-time experiments, bounded rationality, heuristics and choice architecture provide useful concepts—but they are not interchangeable explanations.

6. Hick, W. E. (1952). "On the Rate of Gain of Information." *Quarterly Journal of Experimental Psychology*, 4(1), 11–26.

A foundational choice-reaction-time paper relating reaction times to information in constrained perceptual-motor experiments.

[Open source record](https://doi.org/10.1080/17470215208416600) · <https://doi.org/10.1080/17470215208416600>

7. Hyman, R. (1953). "Stimulus Information as a Determinant of Reaction Time." *Journal of Experimental Psychology*, 45(3), 188–196.

Primary research on stimulus information and reaction time. It should not be casually generalized to life-choice fatigue.

[Open source record](https://doi.org/10.1037/h0056940) · <https://doi.org/10.1037/h0056940>

8. Simon, H. A. (1956). "Rational Choice and the Structure of the Environment." *Psychological Review*, 63(2), 129–138.

A foundational account of rational choice shaped by the structure of an environment; useful context for bounded rationality and stopping rules.

[Open source record](https://doi.org/10.1037/h0042769) · <https://doi.org/10.1037/h0042769>

9. Gigerenzer, G., Todd, P. M. & the ABC Research Group. (1999). *Simple Heuristics That Make Us Smart*. Oxford University Press.

Explores fast-and-frugal heuristics and the conditions in which simple decision rules can work well.

[Open source record](https://global.oup.com/academic/product/simple-heuristics-that-make-us-smart-9780195143812) · <https://global.oup.com/academic/product/simple-heuristics-that-make-us-smart-9780195143812>

10. Thaler, R. H. & Sunstein, C. R. (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness*. Yale University Press.

A major account of choice architecture and default effects, with a section on objections and limits; read alongside critiques about agency and institutional power.

[Open source record](https://www.ncbi.nlm.nih.gov/nlmcatalog/101513713) · <https://www.ncbi.nlm.nih.gov/nlmcatalog/101513713>

Closing question. Which option did you notice only after you changed the way choices were shown—and which value still cannot be captured by the display?