
BOOK EVIDENCE REVIEW

Range: the evidence behind the review

Claim register, chapter assessments, source checks, scoring, and review limits.

Prepared for Jason Hreha / The Behavioral Scientist with AI assistance

David Epstein · 2019 EPUB · Evidence checked through 15 September 2026

80 min read

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01 Verdict and context

Proposed overall rating: 69%. Scientific Accuracy: 67%. Reference Accuracy: 75%. Practical Value: 67%. These are rubric judgments, not the percentage of the book that is true or a measured effect of reading it. The nine inputs and their closest alternatives appear in section 09.

Range supplies a substantial case for broad developmental routes, several well-supported learning methods, and the value of bringing different expertise to difficult problems. Its strongest findings support identifiable activities and outcomes. The larger connection among personal breadth, adaptable judgment, and success across settings is less complete. The book's actual cautions about specialization, sustained practice, quitting, feedback, and medical context materially improve the fair reading and practical assessment.

Confidence is higher in the tested learning methods than in broad career prescriptions. Learning exercises are generally easier to try than career changes, whose demands depend on the reader's resources. Ease of application is a qualitative judgment, separate from the numerical rating.

This appendix accompanies the reader review. It preserves the evidence that is too detailed for that essay: a common claim register, coverage of every substantive chapter, source access, competing interpretations, later evidence, scoring, and verification limits. It concerns the supplied 2019 edition. It does not assess Epstein's character, intentions, or entire body of work.

Navigation: Method · Fair reading · Central claims · Chapter coverage · Register and dossiers · Practical use · Evidence over time · Scores · Verification · References · Notices

02 Scope and method

Edition and reading coverage

David Epstein, *Range: Why Generalists Triumph in a Specialized World*, Riverhead / Penguin Random House, copyright 2019; supplied EPUB marked Version_2. Ebook ISBN 9780735214491; print ISBN 9780735214484. The EPUB supplied for this review has SHA-256 d62d1ac5a07a38faffd177ed559b39126c8d3efc863709a35b4b34534499b4aa.

The extraction contains 54 nonempty spine sections and approximately 109,528 whitespace-delimited words, including navigation, index, references, and extraction labels. The AI evidence reviewers read the introduction, all twelve chapters, conclusion, associated endnotes, and all 28 separate footnotes. All six substantive book illustrations were inspected. Chapter-level coverage and remaining external-source limits are reported below. The supplied edition does not contain the later afterword; this review does not claim to assess the entire 2021 edition.

The locators identify XHTML files and paragraph positions in the supplied EPUB. They are **not print-page numbers**. Paragraph conventions differ slightly between the original audit tools: learning and innovation use their stated XHTML paragraph counts, and fit uses nonempty paragraphs. A short exact phrase accompanies the locator so it can be found despite that difference. Endnote references identify the source-note file or searchable anchor. These locators allow the criticism to be checked without distributing the book.

Selection and evidence rules

The three central propositions below were preserved from the visible Pro drafting record and independently assessed for fit with the book. A later Pro handoff failure prevented confirmation of its complete first package and contradicted some of its claimed source access. Accordingly, this review **does not claim a verified pre-search protocol or preregistration**. Selection is purposive. The local AI evidence reviewers had already begun research when Pro recorded its proposed scope. The propositions were not silently replaced after weaknesses were found.

The source audit is likewise purposive. Cases were selected because they support the organizing thesis, carry a consequential numerical or causal assertion, motivate practical advice, present a strong favorable test, or expose a relevant boundary. It is not a random sample of citations. A count of discrepancies here cannot estimate the book's overall error rate. Faithful examples and qualifications remain in the register alongside criticisms.

The review distinguishes:

- **The book's statement:** the actual proposition and its qualifications, including notes and conclusion.
- **The source's finding:** population, predictor or intervention, comparator, outcome, timing, and uncertainty at the access level actually available.

- **The inference:** what that finding can reasonably support, and what further claim requires a different test.
- **The editorial application:** suggested use by the reviewer, which does not become evidence or earn the book credit for added safeguards.

Descriptive questions do not always require random assignment. Conversely, observing successful people does not identify the effect of assigning someone to their developmental path. Prediction is distinct from intervention; a measured intermediate outcome is distinct from the broader benefit invoked; absence of statistical significance is distinct from proof of no effect. The chosen design must fit the question.

Access, chronology, and review independence

References state whether the check used a primary full text, specified sections or tables, an accepted or working version, an abstract, or metadata only. A downloaded file is not automatically a read source. Unavailable final papers are not treated as false, and an accessible working paper is not silently relabeled the final publication. An original–data rerun was not performed.

The literature check includes evidence available by 15 September 2026. Later evidence can update the assessment of a claim; its omission cannot be charged against a book released in 2019. Reanalysis of existing data, a longer follow-up of the same participants, a new journal version, and an independent replication are kept separate.

GPT 6 Pro supplied the observed initial working essay. Separate AI evidence reviewers covered introduction/chapters 1–4, chapters 5–8, and chapters 9–12/conclusion; the primary editor reconciled the work and reviewed the complete prose. Source access in this appendix rests on the documented local checks, not unverified claims from the failed Pro handoff. The final revision exchange is recorded separately. These are independent assignments within an AI workflow, **not independent human peer review**.

03 The strongest fair reading

The book challenges the assumption that a narrow head start is generally the best path through education and work. Its alternative combines sampling, useful difficulty, comparison across domains, exploration of fit, and access to different expertise. It also asks organizations to remain responsive to evidence that their familiar methods miss.

Several qualifications are essential to judging that argument:

- The introduction and chapter 1 distinguish developmental environments and allow Tiger–like early specialization in some pursuits. A viable broad route is not a promise that every route has equal prospects.
- The learning chapters defend eventual correction and meaningful practice. Chapter 4 allows good current performance to reflect mastery; its footnote discusses correcting errors and undoing wrong motor habits. Discomfort alone is not a useful learning

objective.

- Chapter 5 acknowledges failure of spontaneous analogical transfer. It presents deliberate comparison and demanding scientific work, not effortless insight from unrelated experiences.
- Chapters 6–7 include advance quitting conditions, persistence through difficulty, and temporary experiments. They also contain stronger advice about trying high-risk career paths early, which must be assessed rather than replaced with the reviewer's safer protocol.
- Chapters 8–9 often concern people with substantial expertise in a different field. The 3M and inventor material explicitly credits specialists and combinations of breadth with depth.
- Chapter 10's open-minded forecasting and probabilistic training are relevant to better judgment, but they are not the same measurement as breadth of career history.
- Chapter 11's Challenger argument includes a physical mechanism and organizational dissent. The medical notes distinguish stable coronary disease from an actual heart attack. Neither passage should be reduced to a recommendation to abandon expertise.
- Chapter 12 and the conclusion join exploration to sustained work and eventual commitment. The book does not reject specialization as such.

These qualifications do not reduce every strong claim to “sometimes breadth helps.” They establish the scope at which its comparative developmental, learning, and problem-solving claims should be judged. The central question is how much of that scope the evidence supports.

04 Three central claims

The following propositions preserve the wording observed in Pro's initial selection. The local AI reviewers adopt them as a fair purposive representation after checking the full book. Section 02 explains the selection limits. The shortened reader summary is a guide to these propositions, not a replacement for them.

C1 • Development and matching — 3/4

Selected proposition: Across many performance and career domains, broad early sampling and delayed commitment are productive routes to eventual expertise and better person–work fit, rather than wasted head starts; continued exploration and informed switching can improve the match as people gain experience. Early narrow specialization is not the generally superior route implied by the Tiger model.

Why central: This captures the Roger–Tiger opening, music development, chapters 6–7, and the conclusion. It is a comparative developmental and practical argument, not merely a list of successful late starters.

Adjudication: Appropriate comparative evidence supports much of this qualified proposition. The developmental findings, educational matching work, and bounded decision experiment provide more than biography alone. Their different populations and outcomes must remain distinct. Later syntheses add favorable evidence, with selection and overlapping datasets discussed in the dossiers.

Why 3 rather than 4: Describing the histories of successful adults does not identify the effect of prescribing the same route to a child. Educational and decision findings do not determine every reader's earnings or ideal commitment time. Music evidence and some final-source access remain limited. **Why not 2:** The stated proposition permits productive alternative routes and informed improvement; it does not claim that one broad-sampling intervention is generally optimal. Meaningful comparisons across several settings support that scope. A stronger claim that sampling generally causes higher performance across careers would not receive the same rationale.

Main anchors: learning L01/L05/L06; fit FIT06-02–FIT06-04 and FIT07-02; the 2025 developmental addendum in the learning dossier.

C2 · Durable, flexible learning — 3/4

Selected proposition: Learning organized around varied examples, retrieval, spacing, conceptual connections and analogical comparison often produces more durable and adaptable knowledge than narrow repetition optimized for immediate performance; accepting short-term difficulty and developing broad conceptual representations helps learners transfer to unfamiliar problems.

Why central: This captures the learning mechanism in chapters 2–5, including the important extension from remembering trained material to applying knowledge flexibly. It does not assert that every difficulty or every varied experience helps.

Adjudication: Controlled studies directly support several consequential components, including some transfer when learners compare relevant cases. Retention, discrimination among related problem types, guided analogy, and generalized adaptability are nonetheless distinct outcomes. The favorable family of methods should not be presented as one validated generalist-training package.

Why 3 rather than 4: Effects depend on task, prior knowledge, feedback, comparison, and material. The bridge from such methods to broadly adaptable reasoning across settings is uneven. **Why not 2:** The proposition says “often,” and directly relevant experiments support multiple important components. A trial of reading the entire book is not required to credit those methods. Correcting a local percentage error does not remove the substantive evidence for spacing.

Main anchors: learning L04/L08–L12; fit FIT05-02 and FIT05-07–FIT05-09.

C3 · Invention, judgment, and adaptation under uncertainty — 2/4

Selected proposition: As problems become novel, ambiguous and weakly supported by reliable feedback, breadth within individuals and across collaborators becomes an important comparative advantage: it enables cross-domain recombination, better-calibrated judgment and adaptation that narrow expertise alone often cannot supply. Such breadth complements, and in some uncertain tasks can outperform, narrowly specialized experience.

Why central: This connects kind/wicked environments, outsiders, inventors, forecasters, adaptive organizations, and research ecosystems. It includes both individual and team breadth, as well as its complementarity with depth.

Adjudication: The strongest favorable support concerns selected inventive tasks and access to different expertise. The comic and inventor findings give breadth within people, as well as teams, substantive support. Connolly's transition study supplies directly relevant qualitative evidence about adaptation, including unsuccessful transitions. Its selected interview sample and largely within-field career progression do not establish a general comparative advantage across occupations. The main gap concerns the bridge to calibrated judgment and general adaptation as feedback becomes unreliable. Career breadth, complementary collaborators, scientific hobbies, openness to revision, and institutional dissent are different constructs. Their findings do not automatically establish the whole comparative mechanism.

Why 2 rather than 3: The unresolved bridge concerns important outcomes in the selected proposition, not merely a minor boundary condition. Forecast-training benefits can be real without identifying broad personal experience as their cause. **Why not 1:** The inventive and search comparisons are substantial, directly relevant evidence. The rating does not require all organizational studies to be randomized or penalize the team component for failing to test individual careers. A narrower claim confined to some inventive/search settings would merit a different assessment, but silently substituting it would evade the stated scope.

Main anchors: learning L02 and the Connolly transition dossier; fit chapter 8; innovation IN01–IN08 and IN24–IN28. The strongest case for 3 gives greater weight to conditional inventive/team findings, deliberate broadening of judgment, and the qualitative transition evidence. The retained 2 gives consequential weight to the broader comparative judgment and adaptation claims as well.

05 All-chapter assessment

The following records distinguish reading coverage from independent verification of every cited source.

Introduction and chapters 1–4

The review's independent source work covered all five sections below, their relevant endnotes, and the linked substantive footnotes. Reading a chapter means its full text was examined; it does not mean every underlying reference was independently verified.

Paragraph numbers count the XHTML paragraph elements in the supplied 2019 EPUB, not pages in a printed edition.

Section and EPUB locator	Coverage and role	Qualifications retained	Limits of independent verification
Introduction, "Roger vs. Tiger"; OEBPS/xhtml1/08_INTRODUCTION_Roger_vs.xhtml, paragraphs 1–41	Full text; practice-chart figures Art01 and Art02 visually inspected. Introduces sampling and early specialization. L01.	Some pursuits reward precocity; eventual excellence still requires substantial practice.	Athlete biographies, coaching stories and every sport-specific reference were not separately verified. The cardiology example is assessed with the medical evidence.
Chapter 1, "The Cult of the Head Start"; OEBPS/xhtml1/09_CHAPTER_1_The_Cult_of.xhtml, paragraphs 1–64	Full text; relevant notes and footnotes. Explains feedback, expert pattern learning and entrenchment. Includes Connolly's career-transition evidence. L02–L03.	The book recognizes surgical, accounting, poker and bridge expertise.	Polgár chronology, savant cases, chess-computer tournaments and several occupational experiments were not separately audited. Older AI examples are not treated as current capability assessments.
Chapter 2, "How the Wicked World Was Made"; OEBPS/xhtml1/10_CHAPTER_2_How_the_Wic.xhtml, paragraphs 1–47	Full text; relevant notes and Ebbinghaus illustration Art03. Develops abstraction and the Flynn effect. L04.	Negative trends, environmental rather than inherited change, and contested explanations are acknowledged.	Luria's original book, every country/subtest estimate and the GPA/critical-thinking dataset were not independently read.
Chapter 3, "When Less of the Same Is More"; OEBPS/xhtml1/11_CHAPTER_3_When_Less_o.xhtml, paragraphs 1–77	Full text and relevant endnotes. Covers musical development, multiple instruments and improvisation. L05–L07.	Practice is crucial; early-focused musicians and multiple successful routes are explicitly recognized.	Venetian history, exact music-school subgroup/instrument counts and jazz biographies remain only partly corroborated. The original 1991 music tables were not obtained.
Chapter 4, "Learning, Fast and Slow"; OEBPS/xhtml1/12_CHAPTER_4_Learning_Fa.xhtml, paragraphs 1–89	Full text, relevant endnotes and substantive footnotes on motor learning, errors and preschool. L08–L12.	Procedural practice matters; errors need correction; good immediate performance can reflect mastery; preschool can have lasting benefits.	TIMSS coding, macaque hints, every generation/hypercorrection example and all preschool estimates were not independently audited. No current national achievement conclusion is inferred from the book's older sentence.

The developmental and learning evidence was assessed independently of the Pro draft's unconfirmed source-access statements. No underlying participant data, imaging data or meta-analysis code were rerun.

Chapters 5–8: analogies, career fit and outside expertise

All 300 nonempty chapter paragraphs were read: 73 in chapter 5, 73 in chapter 6, 72 in chapter 7 and 82 in chapter 8. The relevant endnotes and eight linked footnotes were also considered. This is complete reading coverage, not independent confirmation of every anecdote or numerical detail. The 35 FIT register entries distinguish checked findings from unresolved claims. These assessments use independently accessed sources; they do not rely on GPT 6 Pro's reported access. No independent human review or analysis of the underlying datasets was performed.

Chapter 5 — Thinking Outside Experience. The strongest evidence concerns an identifiable learning activity: compare cases and identify the relationship they share. The radiation-problem experiments and a broader synthesis support that activity. They do not establish that accumulating unrelated experiences automatically produces the same benefit. The student-

sorting study found an advantage associated with physical–science training, but did not assign students to a broad curriculum. Dunbar’s observations make a useful case for exchanging knowledge between specialists; the breadth and distance of their analogies need precise description. Kepler, business examples and the final curricular recommendation extend the argument beyond what these designs directly test. Several exact business and infrastructure figures remain unverified. See analogy dossier.

Chapter 6 — The Trouble with Too Much Grit. Epstein’s distinction between persisting at a chosen task and choosing a worthwhile task is well supported. The chapter fairly presents limits of the original grit research. Malamud supplies substantive evidence about learning which academic field fits, Jackson about teacher–school matching, and Levitt about a randomized encouragement to make a change. These are different kinds of fit. The Scottish wage account is more confident than the inspected evidence, and degree–occupation mismatch need not mean abandoning an established career. The recommendation that young people try high–risk occupations first also deserves separate scrutiny. The chapter explicitly values perseverance, rejects quitting after a bad day and presents advance stopping conditions. Those qualifications materially improve its practical value. See education, coin experiment and career advice.

Chapter 7 — Flirting with Your Possible Selves. The chapter offers a useful reason to treat a career choice as revisable. It describes temporary work, side projects and gradual transitions, including financial sacrifices. Its successful biographies and selected career interviews illustrate possibilities; they cannot establish how frequently exploration succeeds. Evidence that personality changes does not show that a stable trait transforms instantly or quantify the career cost of early commitment. The marshmallow discussion already challenges deterministic interpretations and acknowledges the 2018 replication. Later evidence adds context rather than revealing an omission of that study. See personality and self–control.

Chapter 8 — The Outsider Advantage. Broadcast search can connect a problem to expertise its owner lacks. InnoCentive provides meaningful observational support, and NASA documents a concrete example. Many successful outsiders are accomplished specialists in another relevant field. The organizational value of a wider search therefore does not by itself settle how broadly each person should train. Some historical, competition and clinical details remain unverified. Swanson’s work illustrates the reuse of neglected knowledge, with a qualification about prior migraine–magnesium links and an already–retired guideline. The final lamin/SREBP1 proposal is explicitly presented as an investigation, not an established mechanism. See outside expertise and literature discovery.

Chapters 9–12 and conclusion: coverage and fair reading

These chapters, their associated notes and footnotes were read in full. The three substantive chapter 11 figures were also viewed. The related cardiology passage in the introduction and Nobel–hobby passage in chapter 1 were checked because they bear directly on this part of the argument. Reading coverage is broader than independent verification: an unverified anecdote or statistic is identified as a gap, not silently classified as false.

Chapter 9 — Lateral Thinking with Withered Technology

Argument and evidence: Yokoi and other innovators illustrate recombination; 3M, patent-team and comic-book research supply comparative evidence. These studies distinguish breadth within an individual, expertise distributed across a team, and the circumstances in which each helps. See IN01–IN06.

Fair reading: Epstein gives specialists and combinations of breadth and depth substantial credit. The uncertainty distinction is part of his thesis. It would be unfair to demand a randomized career intervention before accepting that these studies describe useful routes to invention. It would also be wrong to treat every measure of patent output, influence or recognition as the same outcome.

Coverage limits: The unpublished ten-million-patent trend, all product-history statistics and every interview transcript were not independently verified. The final Melero paper's full methods were unavailable. These gaps do not negate the stronger inspected studies or justify claiming a numerical error from an earlier working-paper sample.

Chapter 10 — Fooled by Expertise

Argument and evidence: Political forecasts, tournament training and teams, interviews with successful forecasters, and studies of literacy, numeracy and curiosity support a case for intellectual openness. See IN07–IN10.

Fair reading: The book treats specialist knowledge as useful input and does not simply equate expertise with failure. Forecasting experiments support particular trainable practices. The larger bridge from cognitive flexibility to broad occupational experience needs separate support; the constructs are not interchangeable.

Coverage limits: The exact Ehrlich–Simon bet counterfactual proportions, bank-forecast figures, Frimer information-avoidance percentage, Tetlock calibration tables and the 50% superteam improvement denominator were not independently reproduced. The later numeracy replications and forecasting reanalysis affect different inferences and are not general refutations of the chapter.

Chapter 11 — Learning to Drop Your Familiar Tools

Argument and evidence: Carter Racing, Challenger, firefighting, rescue and NASA management histories illustrate the limits of familiar procedures. Organizational studies and medical examples extend the argument. Figures Art04–Art06 distinguish failure-only observations, all observations and blow-by cases. See IN11–IN18.

Fair reading: Epstein recognizes both rigid conformity and reckless deviation. His Challenger argument includes a physical explanation for excluding uneventful flights; it deserves an answer on those terms. His stent discussion specifies stable disease and separately acknowledges lifesaving use during a heart attack. The review should not attribute advice to avoid treatment to the book.

Coverage limits: This is not a complete adjudication of Challenger engineering scholarship or every historical anecdote. The original accountability study's full methods and the cultural-congruence tables remained unavailable or unread. The consequential medical criticisms

therefore rest on defined populations, outcomes and source mismatches, not a broad distrust of specialists.

Chapter 12 — Deliberate Amateurs

Argument and evidence: Scientific biographies, career-impact sequences, diagnostic reasoning, training reforms, collaboration networks, bibliometrics and funding research supply several kinds of evidence. See IN19–IN27, with the related chapter 1 Nobel-hobby claim.

Fair reading: The deliberate amateurs are often accomplished specialists exploring beside their main work. Failures and sustained expertise remain visible. Conventional foundations plus unusual combinations are central to the research case; the chapter does not uniformly recommend novelty or amateurism for its own sake.

Coverage limits: All migration/network studies, biomedical trend figures, historical episodes and program outcomes were not independently audited. The later R3 account documents a program, not controlled gains in scientific validity. Citation impact, true discovery and practical benefit must remain distinct.

Conclusion — Expanding Your Range

The conclusion explicitly retains specialization, uncertainty and high variance in exploration. IN28 records that important boundary. The advice can reasonably challenge premature commitment without establishing one optimal exploration schedule. Later evidence on exploration followed by focus is favorable observational context, not a guarantee. These qualifications should remain visible in both the overall judgment and the practical-value assessment.

06 Common claim register and source audit

The register retains 75 stable claim identifiers: 12 learning/development claims, 35 fit/transfer/search claims, and 28 innovation/judgment claims. They are selected claims and clusters, not a probability sample or an error-rate denominator. Source IDs lead to the access records in section 11. Detailed dossiers follow the registers. The label on a narrow claim does not mechanically determine a central-claim grade.

Learning and development claim register

These scoped judgments identify what the examined evidence supports. They are not additional scores or a count of true statements. Short excerpts identify the book passage; the verdict applies to the stated claim in context, including the book's qualifications. EPUB paragraph locators refer to the supplied 2019 edition.

L01 — Early breadth and later specialization in sports

Book claim: eventual elites often follow a less concentrated early pathway. **Excerpt:** “Eventual elites typically devote less time early on to deliberate practice”. **Locator:** OEbps/xhtml/08_INTRODUCTION_Roger_vs.xhtml, paragraph 22.

Verdict: supported as a developmental pattern in studied populations; only partly supports a causal prescription. Later favorable evidence strengthens the comparative account. Delayed intensification, other-sport practice and unstructured play are different measures. **Sources:** moesch2011, gullich2017, gullich2021, gullich2025, nivard2025.

L02 — Kind and wicked learning environments

Book claim: repeated patterns and reliable feedback permit skilled intuition. **Excerpt:** “Patterns repeat over and over, and feedback is extremely accurate and usually very rapid.”

Locator: OEBPS/xhtml1/09_CHAPTER_1_The_Cult_of.xhtml, paragraph 19.

Verdict: supported distinction; it does not establish a generalist advantage across all uncertain work. Expertise can vary between tasks within one profession. The book’s later recognition of several forms of professional expertise matters. **Source:** kahneman2009.

Related adaptation claim: successful transitioners “had broader training”. **Locator:** the same chapter, paragraph 63; OEBPS/xhtml1/23_Notes.xhtml, paragraph 65. **Verdict:** Connolly’s thesis provides qualitative support for career adaptation. Its selected sample cannot establish breadth’s comparative advantage; see the transition dossier.

L03 — Chess memory and transfer

Book claim: disrupting meaningful board patterns removes the experts’ memory advantage.

Excerpt: “Suddenly, the experts performed just like the lesser players.” **Locator:**

OEBPS/xhtml1/09_CHAPTER_1_The_Cult_of.xhtml, paragraph 33.

Verdict: partly supported; a smaller advantage can remain on random boards. This qualifies the general lesson, not the historical existence of the classic demonstration. Academic transfer from chess training is a separate question. **Sources:** gobet1996, sala2016.

L04 — Flynn effect and abstraction

Book claim: historical intelligence-test gains reflect increased adaptation to abstract complexity.

Excerpt: “The gains are startling: three points every ten years.” **Locator:**

OEBPS/xhtml1/10_CHAPTER_2_How_the_Wic.xhtml, paragraph 6; the broader interpretation appears in paragraph 24.

Verdict: gains and environmental sensitivity are supported; the specific explanation and educational prescription are less directly established. Three points is a defensible rounded historical figure. The book already mentions reversals and debate. **Sources:** trahan2014, pietschnig2015, must2016, bratsberg2018.

L05 — Music-school practice and instrument breadth

Book claim: a third instrument benefited pupils classified as exceptional. **Excerpt:** “The modest investment in a third instrument paid off handsomely”. **Locator:**

OEBPS/xhtml1/11_CHAPTER_3_When_Less_o.xhtml, paragraph 45; the early-lesson grouping claim is in paragraph 44.

Verdict: suggestive association with consequential measurement and selection limits. Exact third-instrument entries and the “every single” grouping assertion remain unverified, not shown false. The book explicitly preserves the importance of practice. **Sources:** sloboda1991, sloboda1999, sloboda1996.

L06 — Later conservatory instrument counts

Book claim: more accomplished pupils commonly played several instruments. **Excerpt:** “Nearly all of the more accomplished students had played at least three instruments”.

Locator: OEBPS/xhtml1/11_CHAPTER_3_When_Less_o.xhtml, paragraph 46.

Verdict: unresolved numerical detail. The cited chapter exists, but its accessible abstract does not verify the proportions or grouping. Failure to retrieve the full chapter is not evidence of fabrication. **Source:** ivaldi2011.

L07 — Improvisation and beginner training

Book claim: reduced self-monitoring during improvisation helps explain an informal route to skill. **Excerpt:** “brain areas associated with focused attention, inhibition, and self-censoring turned down when the musicians were creating.” **Locator:**

OEBPS/xhtml1/11_CHAPTER_3_When_Less_o.xhtml, paragraph 68; the developmental extension follows in paragraph 69.

Verdict: neural observation partly supported; inference to how beginners should learn is overstated if attributed to this experiment. Skilled performance in a scanner is not a comparison of training programs. Interviews and historical examples provide other parts of the book’s argument. **Source:** limb2008.

L08 — Eight-year vocabulary retention

Book claim: wider spacing yielded “250 percent more” retention. **Excerpt:** “Eight years later, with no studying in the interim, the latter group retained 250 percent more.” **Locator:**

OEBPS/xhtml1/12_CHAPTER_4_Learning_Fa.xhtml, paragraph 45.

Verdict: confirmed numerical correction and oversimplified procedure. The large spacing benefit survives. The calculation and original table are documented in the learning dossier. **Source:** bahrack1987.

L09 — Interleaving

Book claim: mixing practice problems can improve later performance. **Excerpt:** “students who studied the exact same problems but all mixed up.” **Locator:**

OEBPS/xhtml1/12_CHAPTER_4_Learning_Fa.xhtml, paragraph 77.

Verdict: supported for selected learning tasks, including controlled classroom mathematics evidence. Material, teaching and feedback matter; spacing and interleaving are related but distinct. **Sources:** rohrer2007, rohrer2020, brunmair2019.

L10 — Ease and difficulty as signs of learning

Book claim: ease signals a failure to learn. **Excerpt:** “Frustration is not a sign you are not learning, but ease is.” **Locator:** OEBPS/xhtml1/12_CHAPTER_4_Learning_Fa.xhtml, paragraph 47.

Verdict: overstated diagnostic rule. Benefits from particular methods do not make difficulty itself evidence of progress. The chapter’s mastery and corrective-feedback qualifications partly repair the slogan. **Sources:** rohrer2020, bahrack1987, dunlosky2013.

L11 — Professor effects and deep learning

Book claim: later gains after early struggle may reflect conceptual connections. **Excerpt:** “by making connections”. **Locator:** OEBPS/xhtml1/12_CHAPTER_4_Learning_Fa.xhtml, paragraph 54.

Verdict: teacher-effect contrast supported by a strong assignment design; proposed mechanism remains speculative. Epstein initially attributes it as a suggestion. The study did not randomize difficulty or conceptual teaching. **Source:** carrell2010.

L12 — Preschool fadeout

Book claim: some early academic gains fade. **Excerpt:** “The researchers found a pervasive “fadeout” effect”. **Locator:** OEBPS/xhtml1/12_CHAPTER_4_Learning_Fa.xhtml, paragraph 83; the broader early-reading conclusion is in paragraph 85.

Verdict: broad topic supported; precise quantitative and universal early-reading claims not certified from the limited accessed material. Cognitive-score fadeout does not imply no lasting value, and the book’s footnote acknowledges that distinction. **Source:** bailey2017.

Analogy, fit and outside-expertise claim register

The 35 stable FIT IDs are scoped assessments, not an additional score or a tally of true and false sentences. Each exact excerpt identifies a passage; the verdict considers the surrounding argument. Locators count one-based nonempty <p> elements within the supplied 2019 EPUB, not print pages. All named sources have an access record. “Unverified” does not mean false.

FIT05-01 — Kepler’s analogies helped build his account of planetary motion.

Excerpt: “Each time he got stuck, Kepler unleashed a fusillade of analogies.” **Locator:** OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 11.

Verdict: Historical illustration; the detailed history was not independently audited. An exceptional biography cannot estimate the average benefit of generalism. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT05-02 — Multiple analogous cases and cues help solve the radiation problem.

Excerpt: “Given both of those plus the fire chief story, half solve it.” **Locator:** OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 25.

Verdict: Supported for guided comparison and this transfer task. The percentages compress different conditions; the precise comparator and hint matter. See the analogy dossier.
Sources: gick1983, alfieri2013.

FIT05-03 — Salient analogies and detailed inside views can distort decisions.

Excerpt: “We take the inside view when we make judgments based narrowly on the details of a particular project” **Locator:** OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 32.

Verdict: Source and numerical verification incomplete. Experimental framing, historical analogy and a personal anecdote are different forms of evidence. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT05-04 — Reference-class analogies improve financial and movie predictions.

Excerpt: “the investors estimated that the return on their own project would be about 50 percent higher” **Locator:** OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 39.

Verdict: Study identity and abstract verified; precise results unresolved. Revised expectations are not measured investment returns. **Sources:** lovallo2012.

FIT05-05 — About 90% of major infrastructure projects overrun, by 28% on average.

Excerpt: “around 90 percent of major infrastructure projects worldwide go over budget”
Locator: OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 42.

Verdict: Exact rate and sampling scope unverified. The claim should not become a certified estimate for all infrastructure projects. **Source basis:** flyvbjerg2004, identified in the book’s notes; original methods, sample and results not independently inspected.

FIT05-06 — Prompted business analogies produce more/better strategies.

Excerpt: “asked 150 business students to generate strategies” **Locator:** OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 47.

Verdict: The book identifies the Dubin–Lovallo working paper; its full results were not independently checked. Strategies for a fictional business are not observed commercial success. **Source basis:** dubin2008, identified in the book’s notes; original working paper not independently inspected.

FIT05-07 — Broad scientific training helps recognize deep causal structures.

Excerpt: “students who had taken classes in a range of domains” **Locator:** OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 54.

Verdict: A sorting advantage was observed, but breadth was not experimentally isolated from selection or specialist training. Long-term program effects remain unestablished. **Sources:** rottman2012.

FIT05-08 — Diverse labs use distant analogies and make discoveries.

Excerpt: “The more unusual the challenge, the more distant the analogies” **Locator:** OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 68.

Verdict: Naturalistic support for exchanging expertise. Most analogies in the inspected coded sample stayed within biology; distance and causality need qualification. **Sources:** dunbar1995, dunbar1997.

FIT05-09 — Broad programs may sacrifice a head start but improve long-run outcomes.

Excerpt: “better serves learners in the long run” **Locator:** OEBPS/xhtml1/13_CHAPTER_5_Thinking_Ou.xhtml, paragraph 72.

Verdict: The long-term curricular inference exceeds the immediately cited sorting and laboratory-transfer designs. **Sources:** rottman2012, gick1983.

FIT06-01 — Failed pursuits and later artistic success illustrate matching.

Excerpt: “Their late starts were integral to their eventual success.” **Locator:** OEBPS/xhtml1/14_CHAPTER_6_The_Trouble.xhtml, paragraph 25.

Verdict: The stories establish possible routes. Calling the late starts necessary to success adds an untested counterfactual; unsuccessful explorers are not counted. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT06-02 — Later specialization reduces degree-to-occupation mismatches.

Excerpt: “more likely to leap entirely out of their career fields” **Locator:** OEBPS/xhtml1/14_CHAPTER_6_The_Trouble.xhtml, paragraph 32.

Verdict: Substantive support for educational matching, with identification assumptions. Degree-field switching includes the first job and need not mean changing an established career. **Sources:** malamud2009, malamud2011.

FIT06-03 — Scots start at lower pay and catch up; learning about oneself matters more than learning content.

Excerpt: “the Scots quickly caught up” **Locator:** OEBPS/xhtml1/14_CHAPTER_6_The_Trouble.xhtml, paragraph 32.

Verdict: Too confident. Inspected country estimates permit a shrinking gap but are not significant; clearer catch-up concerns degree-field switchers. Final journal wage tables remain inaccessible. **Sources:** malamud2010.

FIT06-04 — Encouragement to change jobs can improve happiness.

Excerpt: “Six months later, those who flipped heads and switched jobs were substantially happier than the stayers.” **Locator:** OEBPS/xhtml1/14_CHAPTER_6_The_Trouble.xhtml, paragraph 35.

Verdict: Real randomized-encouragement support, with incomplete follow-up and a selected decision margin. The job estimate is imprecise; the final publication is the same experiment.

Sources: levitt2016, levitt2021. **Linked book footnotes:** OEBPS/xhtml1/36_Footnote.xhtml, paragraph 1; OEBPS/xhtml1/37_Footnote.xhtml, paragraph 1.

FIT06-05 — Teacher moves improve effectiveness and show the value of match.

Excerpt: “Switchers are winners.” **Locator:** OEBPS/xhtml1/14_CHAPTER_6_The_Trouble.xhtml, paragraph 38.

Verdict: Teacher-school fit contributes to measured effectiveness. The slogan extends beyond this observational evidence and beyond any demonstrated universal gain from switching. **Sources:** jackson2012.

FIT06-06 — Grit predicts Beast completion but selected cohorts limit generalization.

Excerpt: “the relative predictiveness of grit and other traits in West Point cadets and spelling bee competitors may not look quite the same in less restricted populations.” **Locator:** OEBPS/xhtml1/14_CHAPTER_6_The_Trouble.xhtml, paragraph 46.

Verdict: Fair critique of generalization from selected cohorts. The book retains the value of persistence and presents the original authors’ qualification. **Sources:** duckworth2007, crede2017. **Linked book footnotes:** OEBPS/xhtml1/38_Footnote.xhtml, paragraph 1.

FIT06-07 — Young adults should first try risky occupations with high information value.

Excerpt: “the first avenues they should try are those with high risk and reward” **Locator:** OEBPS/xhtml1/14_CHAPTER_6_The_Trouble.xhtml, paragraph 49.

Verdict: A model supports the logic of informative exploration. It does not establish that high-risk occupations should be everyone’s first choice; actual book safeguards still count. **Sources:** miller1984.

FIT06-08 — Army money incentives failed while choice secured more service.

Excerpt: “Where dangling money for junior officers failed miserably, facilitating match quality succeeded.” **Locator:** OEBPS/xhtml1/14_CHAPTER_6_The_Trouble.xhtml, paragraph 60.

Verdict: The policy report documents contracts and concerns about bonus effectiveness. Different cohorts and obligated service prevent a clean causal cash-versus-choice comparison. **Sources:** army2010. **Linked book footnotes:** OEBPS/xhtml1/39_Footnote.xhtml,

paragraph 1.

FIT06-09 — Persistence matters; leaving can be useful when fit is poor.

Excerpt: “No one in their right mind would argue that passion and perseverance are unimportant” **Locator:** OEBPS/xhtmll/14_CHAPTER_6_The_Trouble.xhtml, paragraph 73.

Verdict: A material qualification of the quitting message. Treat it as practical judgment, not a guarantee that any change improves fit. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT07-01 — Hesselbein and Knight illustrate careers built through successive opportunities.

Excerpt: “She had no long-term plan, only a plan to do what was interesting or needed at the moment.” **Locator:** OEBPS/xhtmll/15_CHAPTER_7_Flirting_wi.xhtml, paragraph 25.

Verdict: Biography illustrates learning through opportunities. Career details and comparative outcomes were not independently verified. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT07-02 — Circuitous paths are normal among successful people.

Excerpt: “Forty-five of the first fifty subjects detailed professional paths so sinuous” **Locator:** OEBPS/xhtmll/15_CHAPTER_7_Flirting_wi.xhtml, paragraph 28.

Verdict: A selected successful sample cannot establish population prevalence or the success rate of exploration. The book states the research aim of finding winding paths and discloses Epstein’s participation; the actual recruitment protocol was not independently inspected. **Source basis:** Book narrative and notes; no original source independently verified for this entry. **Linked book footnotes:** OEBPS/xhtmll/40_Footnote.xhtml, paragraph 1.

FIT07-03 — People underestimate future personality/value/preference change.

Excerpt: “Predictors expected that they would change very little in the next decade” **Locator:** OEBPS/xhtmll/15_CHAPTER_7_Flirting_wi.xhtml, paragraph 36.

Verdict: The evidence supports underestimated change with design limits. The concert prices are hypothetical; no career-payoff effect was measured. **Sources:** quoidbach2013, quoidbach2020.

FIT07-04 — Traits change with age and context, making early career commitments risky.

Excerpt: “Sometimes it can actually happen instantly.” **Locator:** OEBPS/xhtmll/15_CHAPTER_7_Flirting_wi.xhtml, paragraph 37.

Verdict: Both trait change and continuity have support. Momentary behavior is a different construct; these sources do not quantify worse career odds from early commitment. **Sources:** roberts2006, bleidorn2022. **Linked book footnotes:** OEBPS/xhtmll/41_Footnote.xhtml, paragraph 1.

FIT07-05 — Marshmallow performance does not fix a child's fate; context matters.

Excerpt: “The crystal ball allure of the marshmallow test is undeniable, and also misconstrued.” **Locator:** OEBPS/xhtmll/15_CHAPTER_7_Flirting_wi.xhtml, paragraph 41.

Verdict: A substantive corrective already in the book, including the 2018 replication. The later adult follow-up uses the same cohort, not an independent sample. **Sources:** watts2018, sperber2024. **Linked book footnotes:** OEBPS/xhtmll/42_Footnote.xhtml, paragraph 1.

FIT07-06 — Career experiments can reveal identities and improve fit.

Excerpt: “find experiments that can be undertaken quickly” **Locator:** OEBPS/xhtmll/15_CHAPTER_7_Flirting_wi.xhtml, paragraph 52.

Verdict: Plausible qualitative advice; superiority to planning was not established in an accessed comparative trial. The book includes temporary work and financial sacrifices. **Source basis:** ibarra2003, identified in the book's notes; the original book and interview material were not independently inspected. **Linked book footnotes:** OEBPS/xhtmll/43_Footnote.xhtml, paragraph 1.

FIT07-07 — Late-developing high achievers illustrate flexible exploration.

Excerpt: “He was twenty-nine and running a jazz bar in Tokyo” **Locator:** OEBPS/xhtmll/15_CHAPTER_7_Flirting_wi.xhtml, paragraph 62.

Verdict: Late achievement is possible. Selected biographies do not establish its probability or show that delay caused success; detailed history was not independently audited. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT08-01 — Broadcast challenges attract solutions missed internally.

Excerpt: “A little more than one-third of challenges were completely solved” **Locator:** OEBPS/xhtmll/16_CHAPTER_8_The_Outside.xhtml, paragraph 7.

Verdict: Broadcast search has empirical support; the exact fraction is unresolved because the cited HBS case was not read. A different study's denominator is not a correction. **Sources:** innocentivecase, jeppesen2010.

FIT08-02 — Broad challenge framing improves solution probability.

Excerpt: “frame the challenge so that it attracted a diverse array of solvers” **Locator:** OEBPS/xhtmll/16_CHAPTER_8_The_Outside.xhtml, paragraph 7.

Verdict: Plausible organizational practice. The inspected solver study does not establish a randomized effect of broad challenge wording. **Sources:** jeppesen2010.

FIT08-03 — Appert and Cragin show outsider technical breakthroughs.

Excerpt: “Appert and Cragin had some tangentially relevant work experience.” **Locator:** OEBPS/xhtml1/16_CHAPTER_8_The_Outside.xhtml, paragraph 13.

Verdict: NASA documents Cragin’s substantial adjacent expertise. The case supports specialist knowledge transfer; Appert’s detailed history was not independently checked. **Sources:** nasa2010, nasa2023.

FIT08-04 — A chemist transfers concrete-vibration experience to oil recovery.

Excerpt: “the solution from John Davis, so cheap and simple it made Pegau chuckle.” **Locator:** OEBPS/xhtml1/16_CHAPTER_8_The_Outside.xhtml, paragraph 16.

Verdict: Illustration of transfer from concrete vibration to an oil-recovery problem. Deployment and field performance were not independently verified. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT08-05 — Greater expertise distance predicts winning InnoCentive solutions.

Excerpt: “the further the problem was from the solver’s expertise, the more likely they were to solve it.” **Locator:** OEBPS/xhtml1/16_CHAPTER_8_The_Outside.xhtml, paragraph 24.

Verdict: Positive association in the main selected-solver model, not proof that maximum distance wins. The sample included many highly trained specialists. **Sources:** jeppesen2010.

FIT08-06 — Kaggle winners can solve applied problems outside their original fields.

Excerpt: “I don’t think we can benefit from domain expertise too much.” **Locator:** OEBPS/xhtml1/16_CHAPTER_8_The_Outside.xhtml, paragraph 28.

Verdict: A quoted competitor’s judgment and competition examples, not a verified general estimate of domain knowledge’s value. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT08-07 — Connecting separated literatures can generate new scientific hypotheses.

Excerpt: “it had just never been connected.” **Locator:** OEBPS/xhtml1/16_CHAPTER_8_The_Outside.xhtml, paragraph 32.

Verdict: Literature-based hypothesis generation is supported. Earlier direct links existed; identifying neglected connections is different from first discovering the basic association. **Sources:** swanson1988, swanson2011, aan2012.

FIT08-08 — Magnesium and ibuprofen had equal guideline evidence strength.

Excerpt: “The evidence for magnesium was as strong as the evidence for the most common remedies, like ibuprofen.” **Locator:** OEBPS/xhtml1/16_CHAPTER_8_The_Outside.xhtml, paragraph 32.

Verdict: Same historical guideline category for prevention, not equal measured efficacy. The guideline was retired in 2015 for butterbur safety, not magnesium refutation. **Sources:** aan2012.

FIT08-09 — Jill Viles’ observations helped lead to genetic diagnosis.

Excerpt: “Jill was right again.” **Locator:** OEBPS/xhtml1/16_CHAPTER_8_The_Outside.xhtml, paragraph 73.

Verdict: The clinical and genetic records were not independently audited. A successful case cannot estimate lay diagnostic accuracy. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

FIT08-10 — Lamin–SREBP1 connection might explain divergent muscle outcomes.

Excerpt: “He has begun investigating whether a lamin gene mutation can alter the regulation of SREBP1” **Locator:** OEBPS/xhtml1/16_CHAPTER_8_The_Outside.xhtml, paragraph 80.

Verdict: Faithfully presented as a proposed mechanism under investigation. Do not silently upgrade it to an established causal pathway. **Source basis:** Book narrative and notes; no original source independently verified for this entry.

Innovation and judgment claim register

Each entry gives a short exact excerpt from the supplied EPUB. Paragraph numbers count XHTML <p> elements from one within the named file; they are edition-specific and are not print page numbers. Source IDs link to the reference records below. These verdicts concern the stated claim and its strongest fair interpretation, not the value of the chapter as a whole.

3M: breadth and depth have different contributions

IN01: 3M: breadth and depth have different contributions. “They were the most likely to succeed in the company and to win the Carlton Award.”

EPUB: OEBPS/xhtml1/17_CHAPTER_9_Lateral_Thi.xhtml, paragraph 40.

Verdict — Supported, with outcome limits: The book fairly credits breadth, depth and their combination. The commercial measure is internal recognition, not directly measured returns; the evidence is observational.

Sources: boh.

An unpublished patent trend

IN02: Ten-million-patent trend is unpublished/interview-dependent. “Specialists specifically peaked about 1985”

EPUB: OEBPS/xhtmll/17_CHAPTER_9_Lateral_Thi.xhtml, paragraph 42.

Verdict — Unresolved: Unresolved interview-based trend. Public methods and estimates were not located. The book itself labels the proposed cause a hypothesis. The 3M paper below supplies context, not verification of this trend.

Sources: boh.

Inventor breadth and uncertain domains

IN03: Uncertain patent domains favor broad inventors. “The higher the domain uncertainty, the more important it was to have a high-breadth team member.”

EPUB: OEBPS/xhtmll/17_CHAPTER_9_Lateral_Thi.xhtml, paragraph 49.

Verdict — Supported direction; final-version gap: Supported conditional direction: uncertain recombination favors generalists while specialists still contribute. Final sample counts and interaction estimates remain unchecked; an earlier working-paper sample cannot establish a book error.

Sources: melero.

Comic creators: genre breadth and collector value

IN04: Comics: breadth predicts later market value and variance. “an individual creator who had worked in four or more genres was more innovative than a team”

EPUB: OEBPS/xhtmll/17_CHAPTER_9_Lateral_Thi.xhtml, paragraph 56.

Verdict — Supported, with measurement limits: Meaningful evidence for individual genre breadth, measured through later collector value and its variation. The four-genre threshold is consistent with the fitted variance result; it does not establish superiority on every creative outcome.

Sources: taylor.

Surgery and aviation as specialization exceptions

IN05: Surgery and aviation are explicit exceptions. “specialized surgeons get better outcomes even independent of repetitions.”

EPUB: OEBPS/xhtmll/17_CHAPTER_9_Lateral_Thi.xhtml, paragraph 58.

Verdict — Partly supported: The surgical exception has supporting procedure-specific evidence. The separate aviation accident proportion lacks a checked exposure denominator here. These passages clearly contradict a reading of the book as uniformly anti-specialist.

Sources: sahani, ntsb.

Yokoi, Seth, Darwin and serial innovators

IN06: Yokoi, Seth, Darwin and serial innovators. “He felt that the lateral and vertical thinkers were best together, even in highly technical fields.”

EPUB: OEBPS/xhtmll/17_CHAPTER_9_Lateral_Thi.xhtml, paragraph 26.

Verdict — Practical judgment: A plausible illustration of complementary expertise. Selected histories and interviews establish possibilities, not typical success rates or a validated hiring rule. The contextual 3M paper does not independently verify every biography.

Sources: boh.

Expert forecasting: foxes and hedgehogs

IN07: Expert forecasting and fox/hedgehog distinction. “Their areas of specialty, years of experience, academic degrees, and even (for some) access to classified information made no difference.”

EPUB: OEBPS/xhtmll/18_CHAPTER_10_Fooled_by_.xhtml, paragraph 13.

Verdict — Partly supported: The relevant construct is forecasting style, not simply career breadth. Exact calibration percentages and the blanket credential statement remain incompletely checked; the review should not turn them into evidence that all expertise is useless.

Sources: tetlock.

Forecasting teams, training and selection

IN08: GJP team/training results and selection. “forecasters on the small superteams became 50 percent more accurate in their individual predictions.”

EPUB: OEBPS/xhtmll/18_CHAPTER_10_Fooled_by_.xhtml, paragraph 25.

Verdict — Partly supported: Original studies support reported score gains from particular training and team arrangements. The book explicitly credits training and feedback (paragraphs 42–44); its individual-breadth claim (paragraph 26) remains a separate inference. The exact 50% denominator remains unverified. Selection of elite forecasters differs from randomized teaming; the later reanalysis concerns latent ability.

Sources: mellers, chang, hauenstein.

Science literacy, polarization and motivated numeracy

IN09: Science literacy, polarization and motivated numeracy. “more scientifically literate adults are actually more likely to become dogmatic about politically polarizing topics in science.”

EPUB: OEBPS/xhtmll/18_CHAPTER_10_Fooled_by_.xhtml, paragraph 36.

Verdict — Partly supported: Separate the pre-2019 literacy–polarization associations from the numeracy experiment. The former do not measure becoming dogmatic over time; later replications of numeracy amplification are mixed, while motivated responding itself persists.

Sources: kahan2012, drummond2017, kahan2017, persson, stagnaro, guay, kahanresponse.

Science curiosity and contrary information

IN10: Science curiosity and seeking contrary information. “The most science-curious folk always chose to look at new evidence, whether or not it agreed with their current beliefs.”

EPUB: OEBPS/xhtmll/18_CHAPTER_10_Fooled_by_.xhtml, paragraph 38.

Verdict — Overstated: A measured tendency to choose surprising information does not support “always.” Curiosity was measured rather than experimentally increased. The bounded information-choice result remains useful.

Sources: curiosity.

Challenger: data displays and model choice

IN11: Challenger data displays and model choice. “did not really have twenty-four relevant data points on O-ring failure”

EPUB: OEBPS/xhtmll/19_CHAPTER_11_Learning_t.xhtml, paragraph 40.

Verdict — Disputed interpretation: A substantive engineering dispute, not an obvious graph mistake. Preserve the book’s putty and gas-exposure argument, but distinguish information about a seal mechanism from information about whole-system launch risk.

Sources: challenger, rogers, dalal.

Changing circumstances and familiar procedures

IN12: Organizational story: drop tools when circumstances change. “NASA’s normal quantitative standard was a dearly held tool, but the wrong one for the job.”

EPUB: OEBPS/xhtmll/19_CHAPTER_11_Learning_t.xhtml, paragraph 63.

Verdict — Practical judgment: Reasonable support for informed dissent, with history and organizational interpretation distinguished. The book recognizes both reckless deviation and rigid conformity; it does not supply a universal rule for abandoning procedure.

Sources: challenger, rogers, anich.

Cultural congruence and organizational effectiveness

IN13: Cultural congruence nonsignificance. “it had no influence on any measure of organizational success whatsoever.”

EPUB: OEBPS/xhtmll/19_CHAPTER_11_Learning_t.xhtml, paragraph 85.

Verdict — Overstated: The source reports nonsignificant differences, not proof of zero influence. That still challenges the assumption that cultural congruence necessarily improves effectiveness. Detailed original tables were not independently checked.

Sources: cameron.

Accountability and competing pressures

IN14: Cross-pressure accountability task. “an effective problem-solving culture was one that balanced standard practice”

EPUB: OEBPS/xhtmll/19_CHAPTER_11_Learning_t.xhtml, paragraph 90.

Verdict — Partly supported: The abstract supports task-specific effects of accountability and social norms. Participants played managers; whole-organization performance was not established. Exact methods and coefficients remain an access gap.

Sources: patil.

Cardiology meetings and patient mortality

IN15: Cardiology-conference mortality. “cardiac patients were actually less likely to die if they were admitted during a national cardiology meeting”

EPUB: OEBPS/xhtmll/08_INTRODUCTION_Roger_vs.xhtml, paragraph 37.

Verdict — Overstated: Material scope omission: the lower-mortality groups were high-risk heart-failure and cardiac-arrest patients in major teaching hospitals. Lower coronary intervention concerned another diagnosis. The book presents the mechanism as a possibility, not an established explanation.

Sources: jena2015, jenaresponse, jena2018, japan2016, kwan2026.

Stable coronary disease: survival and symptom relief

IN16: Stable coronary stenting: death/MI versus symptoms. “stents for patients with stable chest pain prevent zero heart attacks and extend the lives of patients a grand total of not at all.”

EPUB: OEBPS/xhtmll/19_CHAPTER_11_Learning_t.xhtml, paragraphs 118–119;
OEBPS/xhtmll/23_Notes.xhtml, paragraphs 388–390.

Verdict — Main outcome claim broadly supported; surrounding shorthand potentially misleading outside that scope: The main statement concerns stable disease, heart attacks and lifespan. Read the following paragraph in that context; it does not establish a blanket denial of symptom relief. Lin supports the reported physician attitudes. Preserve the symptom evidence and the book’s explicit acute-heart-attack exception.

Sources: stent2012, lin2007, couragesymptoms, orbita, ischemia, orbita2.

The reported stent complication rate

IN17: Stent complication rate. “about one in fifty patients who get a stent will suffer a serious complication or die”

EPUB: OEBPS/xhtmll/19_CHAPTER_11_Learning_t.xhtml, paragraph 119.

Verdict — Unresolved: The exact 2% serious-harm estimate was not verified in the cited meta-analysis. This is an unresolved source and denominator issue, not evidence of zero procedural risk.

Sources: stent2012.

Degenerative meniscus surgery and incidental tears

IN18: Degenerative meniscus surgery and incidental tears. “they found that sham surgery worked just as well.”

EPUB: OEBPS/xhtmll/19_CHAPTER_11_Learning_t.xhtml, paragraph 120.

Verdict — Partly supported: Good sham-controlled support for selected degenerative tears. It does not cover every meniscal injury. The separate imaging study measured absence of recent symptoms, not absence of symptoms throughout life.

Sources: sihvonen, fidelity, englund.

When a scientist’s most influential work appears

IN19: Random impact timing. “there is no standard relationship between experience and contribution”

EPUB: OEBPS/xhtmll/20_CHAPTER_12_Deliberate.xhtml, paragraph 8.

Verdict — Partly supported: A highest-impact paper can occur at many points in a publication sequence. That is not evidence that experience is irrelevant. The book itself notes differences in publication productivity.

Sources: sinatra, clauset2017.

Smithies, Geim and Tu as deliberate amateurs

IN20: Smithies, Geim and Tu as deliberate amateurs. “they balance the rest of the week’s standard practice with wide-roaming exploration.”

EPUB: OEBPS/xhtmll/20_CHAPTER_12_Deliberate.xhtml, paragraph 15.

Verdict — Supported: Fair illustrative use of exploration embedded in highly skilled work, including failures. Selected Nobel histories do not estimate the typical payoff to dabbling. The malaria impact estimate is modeled attribution, not an experiment on creativity.

Sources: geim, tu, bhatt.

Nobel laureates and artistic hobbies

IN21: Nobel hobbies. “Nobel laureates are at least twenty-two times more likely to partake as an amateur actor, dancer, magician, or other type of performer.”

EPUB: OEBPS/xhtmll/09_CHAPTER_1_The_Cult_of.xhtml, paragraph 61.

Verdict — Partly supported: The reported hobby ratio appears in the source. Different periods, populations and recording methods limit causal interpretation; it is not the increase in Nobel odds caused by taking up a hobby.

Sources: arts.

Medical reasoning about diagnostic probability

IN22: Medical base-rate reasoning. “Only a quarter of the physicians and physicians-in-training got it right.”

EPUB: OEBPS/xhtmll/20_CHAPTER_12_Deliberate.xhtml, paragraph 26.

Verdict — Partly supported: The approximate fraction is supported by the small convenience survey. The numerical answer assumes test sensitivity absent from the prompt. This does not identify narrow education as the cause of respondents’ errors.

Sources: manrai.

R3 and scientific training

IN23: R3 and scientific crisis. “young scientists are rushed to specialize before they learn how to think”

EPUB: OEBPS/xhtmll/20_CHAPTER_12_Deliberate.xhtml, paragraph 20.

Verdict — Practical judgment: The curricular diagnosis is attributed argument and the program is a prototype. A later description shows implementation, not controlled improvement in research validity. Deep laboratory training remains part of the proposal.

Sources: r3.

Collaboration networks and Broadway

IN24: Network mixing and Broadway. “individuals moved easily among teams, crossing organizational and disciplinary boundaries and finding new collaborators.”

EPUB: OEBPS/xhtmll/20_CHAPTER_12_Deliberate.xhtml, paragraph 35.

Verdict — Partly supported: Supported as a bounded network pattern. The Broadway result favors intermediate connectivity; more mixing is not uniformly better. The book explicitly distinguishes wider ecosystems from individual teams.

Sources: broadway.

Conventional foundations and unusual connections

IN25: Conventional foundations plus unusual connections. “featured ample conventional combinations, but also added an injection of unusual knowledge combinations.”

EPUB: OEBPS/xhtmll/20_CHAPTER_12_Deliberate.xhtml, paragraph 40.

Verdict — Supported: Faithful combination of conventional foundations and unusual connections. Bibliometric measures concern references and citations, not directly tested truth or a career intervention; the favorable pattern still matters.

Sources: uzzi, wang.

Novel work: funding and later recognition

IN26: Novel work funding and later hits. “work that builds bridges between disparate pieces of knowledge is less likely to be funded”

EPUB: OEBPS/xhtmll/20_CHAPTER_12_Deliberate.xhtml, paragraph 42.

Verdict — Partly supported: Several findings are joined here: proposal scores, publishing venues and later citations. Different studies and novelty measures do not establish one universal disadvantage-and-eventual-payoff sequence.

Sources: boudreau, wang.

Radiation and fungal growth

IN27: Radiation-feeding mold. “the mold was nourishing itself with radiation.”

EPUB: OEBPS/xhtmll/20_CHAPTER_12_Deliberate.xhtml, paragraph 44.

Verdict — Overstated: Experiments support radiation-associated growth and altered melanin properties. Metabolic energy capture remains a proposed mechanism; the definitive nourishment wording goes further than the demonstration.

Sources: dadachova.

Experimentation and eventual specialization

IN28: Experimentation is uncertain; specialization remains useful. “there is nothing inherently wrong with specialization.”

EPUB: OEBPS/xhtmll/21_CONCLUSION_Expanding_.html, paragraph 9.

Verdict — Practical judgment: An important explicit limit on the thesis. Later observational hot-streak evidence fits exploration followed by focus, but supplies neither a guaranteed payoff nor an optimal duration for an individual.

Sources: liu.

Consequential source dossiers

Development, learning and transfer: evidence dossiers

Athletic development and the later cross-domain synthesis

Relevant claim: L01. Developmental histories describe sampled athletes' routes; assigning a child to one route raises a different causal question.

The pre-book evidence is mixed in informative ways. Moesch et al. compared 148 elite with 95 near-elite Danish athletes. Later intensification distinguished the groups, but other-sport measures did not: number of sports, 1.57 versus 1.42, $p=.49$; months, 62.97 versus 62.00, $p=.94$. Recalled histories and differing sport composition limit causal interpretation. Conversely, Güllich et al.'s youth-football study followed improvement prospectively and found favorable associations with other-sport training. Its outcome was youth improvement, not adult world-class performance. Describing all the supporting evidence as retrospective would be inaccurate.

The 2021-online/2022-volume synthesis included 51 reports and 6,096 athletes. Adult world-class performers tended to have more early multisport practice and later main-sport starts than national-class peers; youth-performance patterns differed. Youth-led play had negligible effects. This strengthens the comparative developmental case without identifying one causal mechanism.

The December 2025 Science review extends related comparisons across domains. Its 34,839-person total spans 19 datasets; the multidisciplinary comparison in Table 2 uses 5,195 participants, not the full total. Not all measures concern early sampling. Its own discussion preserves a large positive association between early and later elite athletic status: a sample-weighted odds ratio of 49.43 across seven samples. Most adult elites can nevertheless come from the much larger pool of other young athletes. Some underlying studies recur in the earlier sports synthesis and other evidence discussed in this review.

The subsequent Nivard preprint demonstrates how selecting on early and adult performance can distort associations. Its chess comparison uses different groups and dates, and is not an exact replication or a direct test of multisport practice. It identifies a causal-inference risk; it does not show that this process produced every published finding. The original review already supplies its base-rate qualification. Neither source establishes that early excellence predicts failure.

Assessment: meaningful favorable later evidence; proposed developmental mechanisms remain hypotheses, and no universal optimal starting age or sport count follows.

Music: suggestive comparisons and a continuing access limit

Relevant claims: L05–L07. The 1991 Sloboda–Howe abstract describes interviews with 42 pupils at a selective school and supports the direction of the book's practice-distribution account. The authors' 1999 reply, in the accessed portion of p.52, says the

exceptional/average grouping relied on teachers' subjective judgments relayed through one staff member. The authors also point to caution already in their earlier papers. That is their later account of the original caution; the original page has not been directly inspected here.

Exact group denominators, Table VII and the third-instrument entries remain unverified, as the source record explains. That gap does not establish that the numbers are wrong.

The larger 1996 practice study provides favorable evidence for the importance of practice. Its broad practice-achievement relationship does not by itself contradict a narrower result about very early lessons. Epstein explicitly calls practice crucial and acknowledges multiple successful routes. Ivaldi's later chapter was identified, but its exact instrument proportions were not verified.

The separate Limb–Braun imaging experiment studied six professional jazz pianists. Activity decreased in some prefrontal regions and increased in another during improvisation. That concerns skilled performance, not an experiment comparing novice teaching methods. It cannot decide how many formal rules a beginner should learn first. The book also uses interviews and historical material; the imaging study is not its entire case.

Assessment: the school evidence is suggestive rather than a sound prescription to reduce lessons. The Venetian story remains attributed to the book because its historical sources were not independently checked in full.

Learning methods: direct support with a defined task

Relevant claims: L09–L10. The pre-book Dunlosky review rated practice testing and distributed practice highly and interleaving more moderately. This supports particular methods; it does not establish a general advantage for discomfort.

In the Rohrer classroom experiment, classes were randomized within teachers: 54 classes, 15 teachers and 787 analyzed pupils. The intervention ran for four months, followed by a common review and an unannounced test after a mean 33 days. Scores were approximately 61% versus 38%. All test problems were new and blocked by type on four pages, deliberately avoiding a test format that favored the mixed-practice group. Both groups had regular teaching and corrective feedback. Time on worksheets was unmeasured. The chronology distinguishes its online and issue dates.

This is strong evidence for changing practice design in that setting. It does not isolate the contribution of every proposed mechanism or show greater benefit per hour. Course selection excluded most lower-performing pupils and students already in accelerated algebra, limiting generalization.

The later Brunmair–Richter synthesis found material-dependent results: some word-learning comparisons favored blocking, while expository-text results were less clear. Its final publication followed the book's release. The earlier Rohrer–Taylor study supports the same broad learning direction, but its original numerical tables were not independently inspected here.

The book's ease slogan exceeds these findings. Ease can reflect either temporary familiarity or competence. Chapter 4, paragraph 56, acknowledges mastery; OEBPS/xhtml1/32_Footnote.xhtml1, paragraph 1, qualifies motor learning and requires eventual correction of wrong answers. The chapter also preserves procedural practice. Those qualifications deserve credit.

Vocabulary spacing: exact arithmetic and procedure

Relevant claim: L08. Bahrick and Phelps, printed p.346, **Table 2**, reports recall proportions of .06, .08 and .15 for primary intervals of zero, one and thirty days. For the book's comparison:

- **Ratio:** $0.15 \div 0.06 = 2.5$ times as much recall.
- **Relative increase:** $(0.15 - 0.06) \div 0.06 \times 100 = 150\%$ more recall.
- **Absolute increase:** $15\% - 6\% = 9$ percentage points.

Thus "250 percent more" should be **150% more**, or **2.5 times as much**. The original study involved six to nine successive learning/relearning sessions. The book simplifies this procedure into an initial-learning/test comparison. Thirty-five trainees returned approximately eight years later. Schedules changed for many participants, and longer-spacing conditions required more learning presentations. Table 1 records schedules; Table 2 supplies the cited recall comparison.

Assessment: the numerical and procedural correction is secure. The large spacing benefit remains; equal-time efficiency was not established.

Transfer requires more than exposure

Relevant claims: L02–L04, L09–L10, plus the chapter 5 analogy claims. Success on new problems within a taught domain, guided structural comparison between domains and general adaptability are different outcomes. Evidence for one should not silently substitute for another.

Guided comparison has positive experimental support; the analogy dossier explains why that does not establish a benefit from exposure alone.

For L02, Kahneman and Klein explain why cue validity and learning opportunities matter to intuition. A specialist losing to an algorithm does not thereby lose to a novice. For L03, the 1996 chess review qualifies complete-loss-of-advantage rhetoric; chess-training synthesis raises a separate question about educational transfer. Neither proves all transfer impossible.

Career transitions: direct qualitative evidence

Relevant claim: the adaptation component of L02 and C3. Connolly's 2011 thesis used retrospective interviews with 24 main participants, following a six-person pilot. Professional contacts supplied a sample selected for expertise and leadership, largely through progression within an existing field. Participants described applying knowledge in new roles. Some failed transitions were examined; there was no formal failed-transition comparison group.

This is direct qualitative evidence about adaptation, and it deserves positive weight. Its role in the book is more than an illustrative biography. But selecting accomplished transitioners cannot show whether comparable people with narrower backgrounds adapted less successfully. Recalled explanations also cannot isolate the effect of breadth from ability, opportunity or other differences. Those limits qualify the comparative claim; they do not make the interviews worthless or imply that no failures were considered. The source therefore adds support to C3 without resolving its broader inference across invention, judgment and adaptation.

Other examined cases

- **Flynn effect, L04:** Trahan and Pietschnig–Voracek support large historical gains with variation. Must and colleagues supply favorable evidence for the abstract-thinking interpretation. Bratsberg–Rogeberg support environmental explanations for both rise and reversal. These findings do not isolate a specific curriculum that caused the changes. The book already acknowledges debate and negative trends.
- **Professor effects, L11:** Carrell–West uses random assignment to course sections and supports distinguishing current from later achievement. The authors describe the teaching mechanisms as speculative. That qualification limits the deep-learning interpretation without erasing the teacher-effect evidence.
- **Preschool, L12:** Bailey and colleagues address fadeout and persistence. Access here does not certify all numerical estimates or the strongest early-reading generalization. The book acknowledges that later social benefits can remain after some cognitive advantages diminish. The reader essay does not use the unverified exact preschool claims.

These peripheral cases inform coverage and scope.

Evidence dossiers: analogy, fit and outside expertise

These dossiers explain the consequential judgments in the FIT register. Source IDs link to the version and access record. Book paragraph numbers refer to nonempty XHTML paragraphs in the supplied 2019 EPUB.

Guided comparison is a supported method; breadth is a larger claim

Book passages: FIT05-02, FIT05-07–FIT05-09.

In Gick and Holyoak’s Experiment 4, all 98 participants read two stories, summarized them and explicitly compared their similarities. Before a hint, 45% of participants given two relevant analogies solved the radiation problem, compared with 21% given one relevant and one structurally unrelated story. The authors acknowledge that the unrelated story might interfere. Within the two-relevant-analogy conditions, pairs from similar versus dissimilar domains did not differ significantly; that is a separate contrast from 45% versus 21%. The book’s rounded 10/30/50/80 progression compresses several conditions and studies; it is not one four-group experiment. Source

Alfieri and colleagues' synthesis of 57 experiments found a moderate average benefit from case comparison, with substantial variation. It included transfer tests and classroom studies, although effects were smaller at later tests. Multiple outcomes affected study weighting; moderator associations do not isolate their causes. Source

The practical mechanism is specific: comparison helps learners notice a relationship they can reuse. A reader can apply that method deliberately. Simply having a varied biography supplies neither the comparison prompt nor assurance that the relevant relationship will be noticed. This is a boundary on the broader inference, not a reason to discount a useful teaching method.

Rottman and colleagues compared 44 students. The physical-science group contained 12 students, eight from the Integrated Science Program. Its causal-structure sorting advantage was real in this sample, but program enrollment, prior ability, mathematics and specialist knowledge were not experimentally separated. Source An immediate sorting result consequently cannot establish the chapter's later claim about superior long-term curricular outcomes.

Dunbar's 1995 report supports the heterogeneous-lab example. His 1997 analysis coded 99 analogies in 16 meetings: 97 concerned biology; the two nonbiological analogies explained concepts rather than generated hypotheses. Different observation windows and definitions prevent treating the reports as a demonstrated contradiction. They support exchange across areas of scientific expertise more directly than a general advantage from unrelated experience. 1995 source, 1997 source

Educational match quality: preserve the result, repair the wage story

Book passages: FIT06-02, FIT06-03, especially chapter 6, paragraph 32.

Two distinct papers matter. *Discovering One's Talent* examines degree-occupation matching; the 2009 working paper and final 2011 article are versions of the same research. The final article was obtained. *Breadth versus Depth* examines wages and specialization; its 2010 working-paper tables and published abstract were inspected, but the final journal tables remain unavailable after the access follow-up. These version limits constrain the strength of a correction.

In the final matching paper, adjusted Scottish differences were -6.4 percentage points in the OLS model and -8.9 points in an instrumental-variable model. Both favor less degree-field switching. A separate survey's estimates were sensitive to region-of-work controls, which the author argues may themselves reflect switching decisions. The measure includes entering an occupation unrelated to one's degree in the first job; it does not require leaving an established career. Working paper, final article

The result deserves substantive credit. Education can teach a person which field suits them as well as imparting usable knowledge. The study does not make subject knowledge dispensable. Nor does a historical comparison of educational systems establish a general return to repeatedly changing jobs.

In the working paper's 1980-graduate sample, the Scottish log-earnings coefficients were $-.033$ initially and $-.014$ six years later, with standard errors $.035$ and $.050$. Their direction is compatible with a shrinking gap, but neither country difference is statistically significant. The clearer catch-up concerns graduates working outside their degree field: $-.061$ initially and $.003$ later, with standard errors $.026$ and $.029$. The published abstract likewise distinguishes average country outcomes from switchers' catch-up; its switching-cost language is stronger than the working-paper abstract. Source and version record

Thus "the Scots quickly caught up" gives a firmer country narrative than the inspected evidence warrants. Calling it the opposite of the findings would also be wrong. The additional claim that fewer specific skills caused an established initial deficit is not demonstrated by these coefficients. Epstein's next discussion of faster wage growth among degree-field switchers has a stronger basis and should remain separate from the criticism.

The coin experiment supports change for a particular decision margin

Book passage: FIT06-04, including OEBPS/xhtml1/37_Footnote.xhtml, paragraph 1.

Levitt recruited volunteers already considering a change and randomly suggested change or the status quo through a digital coin. They could ignore it. The study recorded 22,511 usable tosses, including 2,186 job-change questions; these are not necessarily unique participants. Encouragement affected decisions, permitting a causal estimate under the study's assumptions. At six months, the instrumental-variable estimate of making an important change was 2.15 happiness points on a ten-point scale, with standard error $.65$. This estimates the effect of change among people whose choice was affected by the coin, not the average effect of receiving heads rather than tails. The job-specific estimate was larger but much less precise. Follow-up was incomplete; the author examined possible bias, including information from third parties. 2016 working paper

This is stronger evidence than a simple comparison of people who chose to leave and stay. The causal interpretation concerns people whose choices were affected by the coin, assuming the encouragement influences happiness through the decision and the other identification assumptions hold. It is not an estimate for everyone who followed the advice, all dissatisfied workers or all career changes.

The book explains the encouragement design in a footnote, which deserves credit even though its description of all coin-followers is too broad. A fair reader summary says that some people already considering a major change became happier after being encouraged to make it, measured at six months, with incomplete follow-up. The experiment does not establish lifetime income gains or a universal rule to quit. The 2021 article reports the same experiment, not a replication. Final version

Evaluate the career advice with its actual safeguards

Book passages: FIT06-05–FIT06-09, FIT07-02, FIT07-06.

The chapter's high-risk recommendation is explicit. In chapter 6, paragraph 49, Epstein says young adults' first avenues "should" have high risk, reward and information value, naming professional sport, acting and lucrative start-ups. Miller's model, estimated using panel data,

explains why early experiments can be rational when they reveal useful information. It does not establish that this occupational sequence is best for readers with different resources and constraints. Source

Fast rejection is also not necessarily a clean test of enduring fit. Opportunities to practice, available alternatives and the cost of recovering from failure affect what a trial teaches. These are reasons to qualify the categorical recommendation, rather than reasons to reject exploration itself.

The book provides meaningful safeguards. Chapter 6, paragraph 50, presents advance stopping conditions and distinguishes poor fit from ordinary difficulty; paragraph 73 rejects quitting because of a bad day. Chapter 7, paragraphs 50–52, includes gradual transitions, temporary work and financial sacrifices. Epstein attributes this transition advice to Ibarra; her book is identified in the notes but was not independently read here. Source identity These passages temper the practical message. They do not fully specify who can absorb the costs of the high-risk-first sequence. Further suggestions supplied by a reviewer—such as a financial runway or a test of whether the problem is a bad manager—must not be credited to the book.

Jackson's teacher study supports a contribution from teacher–school matching to measured effectiveness, using observational models to separate teacher, school and match components. This is informative about placement, not a direct measure of discovering one's passion. Source The Army report documents preference-linked service contracts, but compares different programs and cohorts; obligated service is not proof of later voluntary retention or a clean causal advantage of choice over money. Source

The grit criticism is a strength. The original studies linked grit to completion of West Point's summer program within selected cohorts; other admission measures predicted other outcomes. The later synthesis found substantial overlap with conscientiousness and stronger results for perseverance than consistency of interest. Neither finding makes effort useless. Original studies, synthesis

Finally, Epstein says the Dark Horse researchers aimed to find fulfilled, successful people who arrived there circuitously and recruited high achievers. The underlying recruitment protocol was not inspected; this review does not establish that a winding path was a mandatory inclusion criterion. The reported 45-of-50 figure nevertheless comes from a selected successful sample and cannot estimate how often exploration succeeds or whether most workers follow such a path. Epstein discloses the research aim and his own participation. The examples can make a possible route visible without proving it is generally superior.

An outsider may be a specialist whose expertise travels

Book passages: FIT08-01–FIT08-06.

Jeppesen and Lakhani studied 166 broadcast problems; 49 were solved. The complete solver-survey analysis had 320 respondents, including 39 winners. Sixty-five percent held PhDs and another 19.1% other advanced degrees. Self-rated distance from a solver's expertise predicted success in the main model, which addressed selection into submission. After excluding team

submissions, the distance coefficient remained positive but was no longer conventionally significant ($p=.11$). Fewer scientific interests weakly predicted success. The authors caution that self-selection can conceal an eventual disadvantage at great distance. Source

This is meaningful evidence for looking beyond the group that owns a problem. It leaves several broader claims unsettled. The design does not randomly assign expertise, show that the least knowledgeable applicants win or establish that acquiring many fields improves an individual's success. A company gains a wider pool by consulting several different specialists, even if each person remains deeply specialized.

The 49-of-166 fraction should not be used to declare the book's "little more than one-third" figure wrong: its notes cite a separate HBS case whose full text was not accessed. Case identity The book's broad-framing claim is also not established as a randomized intervention by the inspected solver study.

NASA's original case describes Bruce Cragin as a physics PhD with substantial plasma and radio-frequency engineering experience. That is relevant expertise brought to a new forecasting problem, a stronger description than an untrained outsider's lucky insight. 2010 case NASA's later success story is an official retrospective, not an independent validation study. 2023 account The Appert, Davis and Kaggle narratives remain illustrations where complete historical or performance verification was not achieved.

Personality change and marshmallow findings need different interpretations

Book passages: FIT07-03–FIT07-05.

The end-of-history studies compared expected future change with reported past change across several measures; supplementary longitudinal information addressed the concern that the result was simply retrospective distortion. The \$129/\$80 concert comparison was hypothetical willingness to pay. These designs support underestimation of change without measuring the financial consequences of career commitment. A later life-satisfaction dispute concerns a related question, not an exact replication of the personality task. 2013 study, 2020 comment

Longitudinal personality syntheses support both change and stability. Population averages, individuals' relative standings and behavior in a particular situation are distinct. A different response at a party and at work does not by itself show that a stable trait changed instantly. The book acknowledges continuity, including in its statistical footnote; that qualification should accompany criticism of its stronger rhetoric. Only abstracts of the two syntheses were inspected here, limiting detailed adjudication. 2006 synthesis, 2022 update

The marshmallow discussion already rejects destiny claims and names the 2018 conceptual replication in `OEBPS/xhtml1/42_Footnote.xhtml1`, paragraph 1. That study found weaker adjusted associations than the familiar popular account. The 2024 adult follow-up adds caution about prediction, but uses the same underlying SECCYD cohort and is not an independent sample replication. These findings do not establish that self-control never matters. 2018 study, 2024 follow-up

Literature discovery, historical guidelines and provisional mechanisms

Book passages: FIT08-07–FIT08-10.

Swanson's later account acknowledges direct migraine–magnesium connections in earlier publications. His contribution involved neglected evidence and proposed connections, so the book's description need not mean he first discovered the basic link. The 1988 paper's bibliographic identity was verified, but its full synthesis was not read. 1988 record, 2011 retrospective

The 2012 guideline placed magnesium and ibuprofen in the same Level B category for migraine prevention. That does not mean identical efficacy or support for every form of treatment. The guideline was retired in September 2015 because of butterbur safety concerns, not because magnesium had been disproved. It is therefore historical evidence for the book's comparison, not a current clinical recommendation. Guideline and status

The detailed genetic and clinical records behind Jill Viles's case were not independently audited. The book's final lamin/SREBP1 connection is explicitly described as an investigation. Treating it as an established mechanism would strengthen the claim beyond what Epstein actually wrote. Hypothesis generation, diagnosis and treatment efficacy require different evidence; success in one does not certify the others.

Innovation, judgment and medical evidence dossiers

These dossiers explain the consequential comparisons behind the register. They do not require causal experiments for every descriptive or historical claim. The relevant question is whether the book's inference exceeds what its evidence can establish. Sources and actual access are recorded separately under their stable reference IDs.

3M: different forms of expertise, different outcomes

3M: different forms of expertise, different outcomes — IN01. Boh and colleagues combine patent records and interviews within one company. Breadth relates to invention output, depth to technical influence, and a combination to recognition for commercial contribution. The last outcome is an internal career/award measure; it should not become a directly measured financial return.

The book's distinction between specialists, generalists and broad but deep inventors is a strength. The appropriate limit is that these associations do not isolate the effect of assigning employees broader experience, and one innovative firm may not represent every workplace. That limits causal prescriptions without defeating the study's descriptive contribution. The separate ten-million-patent trend in IN02 was reported through an interview and remains unverified; it must not inherit the published 3M paper's evidential status.

Comics: evidence for breadth within an individual

Comics: genuine individual-breadth evidence — IN04. Taylor and Greve examine 4,485 comics from 234 publishers. Prior experience across genres predicts later collector-guide value and its variation, with controls including publication year and scarcity. Their

individual-versus-team interaction supports a stronger breadth relationship for variation in outcomes; the corresponding mean interaction was not statistically significant. The fitted variation curves cross near three genres, so the book's four-or-more description is not an evident arithmetic error.

This gives breadth within an individual more support than a set of inspiring biographies would. Yet collector value is an indirect creativity measure, and more variable output includes disappointments as well as hits. The finding supports the possibility of an advantage for broad individuals; it does not establish that an individual beats a team on every relevant outcome. Observational controls also cannot ensure that genre breadth itself produced the difference.

Inventor teams: uncertainty changes the value of breadth

Inventor teams: uncertainty changes the value of breadth — IN03. Melero and Palomeras study electrical/electronics patent teams. The published abstract supports a generalist advantage where recombination is uncertain and preserves the value of specialist contributions. The inspected earlier working paper explains the citation-based measures and controls, but its sample differs from the final paper reported by Epstein.

The conditional direction supports the book's argument. Exact final sample counts and interactions remain an access gap; differing manuscript versions cannot establish misreporting. Patent citations should not silently become commercial utility. Nor should team evidence be judged solely against an individual-career proposition: the book expressly includes contributions from both people and teams. The broader claim about judgment and adaptation still requires its own bridge beyond these inventive tasks.

Conventional foundations with unusual connections

Conventional foundations with unusual connections — IN25. Uzzi and colleagues analyze 17.9 million scientific papers using journal-pair co-citations. Highly cited work tends to combine conventional foundations with an unusual element. The book presents this combination accurately; a review that reduces the result to "novelty wins" would introduce the error itself.

The measure concerns a paper's references and later citations. It does not directly measure the author's career breadth, establish the truth of the work, or test a curriculum. These distinctions bound the application without erasing the evidence for recombination. Wang and colleagues add evidence of delayed recognition and variable citation outcomes for novel combinations. Their working paper and final article represent one study, not two confirmations.

Forecasting: openness, training, teams and selection

Openness, training, teams and selection — IN07, IN08. The fox/hedgehog distinction concerns ways of forming and revising judgments. It is not an experimental contrast between generalist and specialist careers. Exact calibration percentages in Tetlock's original project were not fully verified here and are not needed for the reader essay's bounded distinction.

The book explicitly credits training and close examination of prediction outcomes, including deliberate feedback after errors (OEBPS/xhtmll/18_CHAPTER_10_Fooled_by_.xhtml, paragraphs 42–44). The review should preserve that practical substance. Its separate assertion that “in the face of uncertainty, individual breadth was critical” (paragraph 26) links forecasting with comics and inventors; that is the relevant bridge to examine.

Mellers and colleagues studied a selected, highly educated volunteer sample. Training and regular team conditions were experimentally varied and improved recorded probability-forecast scores. Later elite teams were formed from prior top performers, so elite selection and ordinary randomized teaming must remain separate. Original analyses addressed updating and timing; the study should not be dismissed as an uncontrolled comparison. Chang and colleagues provide additional training analyses within the tournament program, with overlapping evidence rather than an entirely independent population.

Hauenstein and colleagues, published in 2025 after online release in December 2024, reanalyze the original tournament data. Their exploratory models account for question selection, timing and difficulty; estimated differences in latent forecasting ability diminish, disappear or reverse. They do not erase the observed score differences. Whether adjustment removes a confound or a behavior through which training works affects the interpretation. This is a relevant challenge to the ability explanation, not a retraction or a new participant replication. The reader sentence that particular training improved tournament performance can stand; the larger claim that varied life experience improves judgment remains less directly established.

Challenger: two questions about the same flight history

Two different questions about the same flight history — IN11, IN12. In

OEBPS/xhtmll/19_CHAPTER_11_Learning_t.xhtml, paragraph 37, Epstein argues that successful protective putty prevented gas from reaching the rings on the uneventful flights. On that account, those flights did not test the seal-failure process of concern. His erosion/blow-by distinction and the three figures are integral to the argument, not dispensable details.

The participant-coauthored critique also disputes retrospective claims about the temperature information available to engineers that evening. The accessible Online Ethics version is an earlier lecture/conference text, not verified as the exact 2002 publication. The published abstract was checked separately. This competing account gives reason to avoid blaming the engineers for failing to draw an allegedly obvious graph.

Epstein already specifies the question as how O-rings might fail and explains why hot-gas exposure matters. The dispute is how that mechanism should guide use of the full flight history in estimating launch risk. The book moves from the mechanism to broader claims about the limits of quantitative analysis in paragraphs 36 and 43; those claims are distinct from an allegedly missing qualification in paragraph 37. Dalal, Fowlkes and Hoadley combine flight observations with engineering assumptions in a statistical risk analysis. Their inference is more than a scatterplot; no model was rerun for this review. This is a bounded disagreement about information and modeling, not a confirmed source-description error.

The Rogers Commission record places management and communication alongside engineering concern. Neither a retrospective association nor a compelling mechanism establishes that one graph or one organizational reform would have prevented the launch. The book offers a valuable defense of informed dissent. The bounded criticism is that physical reasoning and quantitative evidence can inform each other, while the complete historical decision cannot be reduced to either alone.

Cardiology: meeting dates, diagnostic groups and possible mechanisms

Meeting dates, diagnostic groups and possible mechanisms — IN15. Jena and colleagues' 2015 study compares acute admissions on meeting dates with nearby matched weekdays. Lower adjusted 30-day mortality appeared among high-risk heart-failure and cardiac-arrest patients at major teaching hospitals. Lower coronary intervention occurred among high-risk acute-myocardial-infarction patients, a different group, without a detected mortality difference there. The primary editor's full-PDF and Table 3 check confirms this distinction.

Matching, balanced observed characteristics, controls and sensitivity analyses provide meaningful support for the timing comparison. The authors nevertheless could not measure actual attendance or distinguish mechanisms. Epstein fairly attributes unnecessary intervention as a possible explanation; the problem is the introduction's broader population wording and the temptation to join findings from different diagnoses as a demonstrated mechanism. The published author reply defends the design without resolving that mechanism.

A related US 2018 study found lower adjusted myocardial-infarction mortality during interventional-cardiology meetings with similar intervention rates. That supports a meeting-date association in another defined setting, not the fewer-interventions explanation or an exact heart-failure/arrest replication. Japan's 2016 study found no detected survival difference. The 2026 study, involving 24,761 acute-myocardial-infarction patients, instead reports higher adjusted 30-day mortality during meeting dates (odds ratio 1.18, 95% confidence interval 1.02–1.37). These different populations and results limit generalization; they do not directly refute the original US subgroups. Full 2018 and 2026 methods were not available to this review; the latter abstract does not establish the geographic sampling frame or mechanism.

Stents: survival and symptom relief are different outcomes

Stable disease: survival and symptom relief are different outcomes — IN16, IN17. The cited 2012 meta-analysis pooled eight randomized trials of stents plus medical therapy versus medical therapy alone in stable coronary disease. It found no statistically detected added mortality or myocardial-infarction benefit. This supports the main direction of Epstein's sentence, with the ordinary limit that a nonsignificant estimate is not proof of an exactly zero effect.

The following paragraph's shorthand that stenting does not work should be read after that explicit outcome limit. It could mislead if extended to all benefits, but it is not a clear blanket denial of symptom relief. Before the book, COURAGE's health-status report found some additional symptom benefit, which diminished over time and came from an unblinded comparison. ORBITA did not detect its primary exercise-time benefit under a different,

medication-optimized sham-controlled design. Later ORBITA-2 found symptom relief over 12 weeks in patients taking little or no antianginal medication. That later evidence cannot establish what Epstein should have known in 2019, but it matters when distinguishing benefits in a present-day review.

The book also cites Lin, Dudley and Redberg for physicians' reported attitudes (notes, paragraph 390). Their three California focus groups included 20 cardiologists discussing hypothetical cases with absent or atypical symptoms. Participants favored intervention despite acknowledging limited evidence for preventing myocardial infarction or death; the pattern included doctors without procedure-based payment. This supports Epstein's example of attachment to a tool. The design does not measure actual treatment frequency or establish that professional identity caused the choices.

The later ISCHEMIA trial concerns an initial invasive strategy that could include bypass surgery; it is not simply another stent-versus-placebo trial. None of these distinctions converts symptom relief into established survival benefit. The book's endnote explicitly recognizes lifesaving stents during an actual heart attack (OEBPS/xhtml1/23_Notes.xhtml, paragraph 388). Its precise one-in-fifty serious-complication estimate remains unverified in the cited source. The review makes no patient-specific treatment recommendation.

Other examined findings and their limits

Literacy and motivated numeracy — IN09. Kahan 2012 and Drummond–Fischhoff 2017 support conditional literacy–polarization associations. They do not observe people becoming dogmatic over time. The separate Kahan 2017 table experiment reports numeracy-related amplification of partisan responding. Persson 2021 and Stagnaro 2023 did not reproduce that amplification in their preregistered tests, while Guay–Johnston supplies favorable independent evidence. Kahan–Peters' 2017 preliminary response reports self-replication; it predates the later tests. Mixed replication of the table effect does not refute the different literacy surveys or motivated responding generally.

Routine expertise and organizational studies — IN05, IN13, IN14. Sahni's study supports procedure-specific specialization after accounting for volume. The unchecked NTSB accident-series denominator cannot estimate how risky unfamiliar crews are. Cameron–Freeman reports nonsignificant congruence differences, not exactly zero effect. Patil and colleagues study a bounded judgment task, and Anicich and colleagues relate hierarchy measures to expedition outcomes. Their measures do not supply one universally safe organizational rule.

Other medical examples — IN18, IN22. The meniscus sham trial concerns selected degenerative tears, with no clinically important added benefit; its five-year follow-up is the same cohort. Englund's imaging study measures recent symptoms, not lifelong absence of symptoms. Manrai's diagnostic-probability survey supports the small-sample arithmetic concern, while the prompt's missing sensitivity assumption and the untested educational explanation require care.

Scientific careers and discovery — IN19–IN28. Sinatra supports flexibility in the timing of a highest-impact publication, conditional on productivity; the cited Clauset essay summarizes that work rather than independently repeating it. Nobel-hobby ratios match the source but

compare differently recorded populations. Geim and Tu are substantive histories of trained scientists, while Bhatt's malaria estimate is modeled population attribution. They illustrate possibilities without estimating typical gains from amateur exploration.

Science curiosity, Broadway networks, and grant evaluations each support a narrower measured relationship than “always,” unlimited mixing or a universal funding penalty. Dadachova's experiments leave the proposed energy-harvesting mechanism tentative. The later R3 account documents implementation, and hot-streak study gives favorable observational evidence for exploration followed by focus. Neither establishes an optimal curriculum or personal experimentation schedule.

Correction, retraction and replication checks

Correction, retraction and replication checks, 15 September 2026. Targeted title/author searches and available publisher/PubMed records were checked for the principal innovation, curiosity, numeracy and meeting-date studies. No matching formal retraction or result-changing correction was located for the core innovation papers in that bounded search. This is not an exhaustive integrity certification or proof of replication.

The meaningful later distinctions are identified above: exploratory reanalysis versus new participants; close versus extended numeracy tests; related meeting-date populations versus exact replication; follow-up versus a new cohort; and working papers versus final versions. A substantive original-author response to the forecasting reanalysis was not located. This review did not rerun original data, conduct a new replication, or obtain human scientific sign-off.

07 Practical use

The practical assessment concerns the advice supplied by *Range*, for its intended audience and explicit extensions. A useful reviewer-added protocol does not improve the book's grade retroactively. The following distinctions keep those judgments separate.

Learning

The book teaches consequential methods with relevant evidence: retrieval, spaced return to material, suitable interleaving, and comparison of cases. The intended use should determine the check. Remembering vocabulary, choosing a mathematical method, and reasoning about an unfamiliar organizational problem call for different measures. Favorable evidence for one does not guarantee the others.

A sensible application is to change a feature of practice, check errors, and assess later performance on the intended task. That is a synthesis of the material, not evidence that discomfort itself is beneficial. The book's own correction and motor-learning qualifications deserve credit.

Careers and fit

The book's actual safeguards include deciding in advance when to stop, persisting through ordinary difficulty, trying temporary roles or experiments, accepting some unsuccessful attempts, and eventually committing. Its conclusion proposes experiments that can fit into limited personal time. These are meaningful boundaries, not safeguards invented by this review.

The high-risk-first recommendation in chapter 6 is more consequential. Its justification rests on the value and speed of learning about fit. The relevant practical question is whether the particular reader can afford the trial and whether its feedback will be informative. Inconclusive failure can consume resources too. This is a foreseeable limitation, not an estimated harm rate or a claim that risky exploration is always irrational.

The reader review adds explicit income, training, schedule, and workplace-versus-profession checks. They are proposed editorial applications. They are excluded from the assessment of the book's own applicability and safeguards. No popular book needs a complete financial manual; an affirmative recommendation about which risky paths to try first still needs boundaries proportionate to that recommendation.

Organizations and high-stakes judgment

Bringing in another technical perspective can enlarge the available approaches while preserving the depth needed to test them. The supporting evidence is conditional. It does not justify replacing domain knowledge with uninformed opinion or assuming that every diverse group works well.

The book's clinical and engineering examples support questions about outcomes, models, and professional certainty. It does not directly instruct readers to abandon medical treatment, and its acute-heart-attack caveat must remain visible. The review's advice to seek expertise that explains alternatives and uncertainty is an editorial application, not a book-supplied consultation protocol or individualized medical guidance.

08 Evidence over time

This chronology separates publication-time criticism from later updates. Exact source identities, access levels, and caveats are in section 11 and the linked dossiers.

Period	Material considered	How it affects the review
Before the 2019 book	Original learning, development, matching, analogy, invention, and forecasting evidence; contemporaneous clinical and Challenger sources	This is the basis for evaluating how faithfully the book used evidence available to it.
24 May 2019 online; 2020 issue	The classroom interleaving trial	Its issue date alone would misclassify its chronology. The later issue is not a new experiment.
September 2019	Interleaving moderator synthesis	Later boundary evidence, not an omission charge against the book at initial release.

Period	Material considered	How it affects the review
2020–2021	Published versions or extended follow-ups of earlier research, including Levitt and the meniscus cohort	Distinguish a final publication and longer follow-up from an independent replication.
2021 online / 2022 issue	Developmental sports synthesis	Favorable later evidence; both dates identify the same synthesis.
2021 onward	New observational work on exploration and later creative concentration	Relevant favorable patterns; not a randomized prescription for career planning.
2021–2023	Further motivated-numeracy studies with differing results	Treat specific tasks and samples separately; disagreement does not refute every claim about science literacy or political polarization.
2023	ORBITA-2	A later outcome-specific treatment update. It cannot be an omitted 2019 trial.
December 2024 online / 2025 issue	Forecasting reanalysis	Reuses tournament data and asks a different measurement question; not a new randomized replication of the original training intervention.
December 2025	Cross-domain expertise review and subsequent selection/base-rate preprint critique	Evaluate favorable synthesis and methodological challenge together. Some supporting datasets recur from earlier publications. The critique is a preprint, not a retraction.
2026	Cardiac Society of Australia and New Zealand meeting-date comparison	A different clinical and institutional setting; not a direct replication of the original US heart-failure/arrest subgroup result. The checked abstract does not establish the geographic sampling frame.

The 2018 US cardiology follow-up and earlier Japanese comparison are included in the clinical dossier with their actual access limits. Contrasting results across settings can constrain generalization without being interchangeable tests of one identical hypothesis.

Notice checks were bounded searches of source titles, authors, DOI or indexing records, and available publisher/author pages. Access failures are recorded. No blanket certification that every source is free of corrections, retractions, or methodological concerns is made. The dated records distinguish a located critique from a formal notice, and a failed retrieval from proof of absence.

09 Scores, arithmetic, and sensitivity

The established series rubric uses nine integer inputs from 0 to 4. A category is the sum of its three inputs divided by 12, multiplied by 100. The overall is the sum of all nine inputs divided by 36, multiplied by 100. Only final displays are rounded to whole percentages; exact halves round upward. Rounded category displays are not averaged.

Scientific Accuracy

Input	Grade	Anchor and reason
C1 · Development and matching	3	Substantially supported with qualifications. Several meaningful comparative and decision findings support the qualified alternative routes; causal assignment and broad reader-level outcomes remain uncertain.
C2 · Durable, flexible learning	3	Substantially supported with qualifications. Appropriate experiments support multiple methods and some guided transfer; wider adaptable reasoning is less firmly connected.
C3 · Invention, judgment, adaptation	2	Partly supported. Substantial inventive/search evidence coexists with important measurement and generalization gaps in judgment and adaptation.

Calculation: $3 + 3 + 2 = 8$; $100 \times 8/12 = 66\frac{2}{3}\%$; displayed **67%**. Section 04 gives the adjacent-grade arguments at the actual selected scope.

Reference Accuracy

Input	Grade	Anchor and reason
Traceability	4	Strong at the examined scope. Important examined claims can generally be linked to identifiable notes, papers, reports, or explicitly attributed interviews. Some underlying final texts and interview datasets remain unavailable; identifying a source is distinct from fully verifying it. This does not certify every note.
Accurate description	3	Mostly accurate. Substantial faithful descriptions and genuine qualifications coexist with bounded meaningful errors or omissions, including the spacing percentage and cardiac-patient scope. The Scottish comparison is classified as overconfident qualification/inference, not proof of a contrary trajectory.
Appropriate inference	2	Mixed. Faithful task-specific claims and conditional findings coexist with consequential moves from selected histories or narrow measured outcomes to broader practical conclusions. The main concern is inference at the book's actual scope, not a demand for randomization of every descriptive claim.

Calculation: $4 + 3 + 2 = 9$; $100 \times 9/12 = 75\%$.

Adjacent grades: A lower traceability grade would be warranted if important source relationships could not be identified reliably. Inability to retrieve an identifiable final text limits verification; it is not, by itself, a traceability failure. Description 2 would imply more pervasive consequential distortion than the faithful examples support. Inference 3 would give

more weight to the book's many caveats; the retained 2 reflects the importance of unresolved broader developmental, transfer, and practical interpretations. These are criterion judgments, not automatic deductions for a counted number of mistakes.

Some evidence informs more than one category for distinct reasons. For example, an outcome restriction can matter to accurate reporting and to the application inferred from it. The composite therefore does not consist of three statistically independent estimates. The review does not deduct twice without identifying the different criterion being judged.

Practical Value

Input	Grade	Anchor and reason
V1 · Evidence of intended benefit	3	Several consequential recommendations have appropriate, direct evidence of useful benefits, with remaining gaps. The learning methods and guided comparison are more than inspirational suggestions. A trial of reading the whole book is not required.
V2 · Applicability and durability	3	The book generally matches its principal applications to recognizable conditions and acknowledges meaningful limits. Its own guidance includes corrective feedback, gradual trials, advance quitting criteria, and eventual commitment. Broad, lasting adaptability remains less firmly established, and some costly applications need clearer boundaries.
V3 · Benefits relative to burdens and risks	2	Plausible benefits coexist with material context-dependent costs and incomplete boundaries or stopping rules. Real quitting criteria and gradual experiments earn credit, but do not fully constrain the high-risk-first career advice. The reviewer-added safeguards earn none.

Calculation: $3 + 3 + 2 = 8$; $100 \times 8/12 = 66\frac{2}{3}\%$; displayed **67%**.

Why V1 is not 2 or 4: Multiple consequential methods have direct support, while wider career and adaptability benefits remain less secure. **Why V2 is 3 rather than 2 or 4:** the book's kind/wicked distinction, learning goals, corrective feedback, comparison, temporary trials, stopping conditions, and eventual specialization provide substantial guidance for choosing and adapting its methods. A 2 would give more weight to incomplete evidence for broad, lasting adaptation and costly career applications. The retained 3 credits the book's actual contextual guidance; those remaining limits rule out 4. **The strongest case for V3=3:** much advice is inexpensive, and the book repeatedly rejects indiscriminate quitting. The retained 2 gives weight to its explicit stronger recommendation about risky early careers. The concern is the book's own affirmative advice, not an invented instruction to abandon treatment or a measured claim of harm.

V2 concerns how reasonably the guidance fits the intended setting and time horizon, including its limits. V3 concerns whether likely benefits are proportionate to the reader's costs and safeguards. Incomplete cost boundaries on high-risk career experiments do not erase the contextual guidance that supports V2. A 1 would understate the book's actual

protections; a 4 would require much stronger integration of benefit evidence and major trade-offs. These remain moderate-confidence editorial judgments rather than measured treatment effects.

Overall and sensitivity

Total: $8 + 9 + 8 = 25$ out of 36. **Overall:** $100 \times 25/36 = 69.444\ldots\%$; displayed **69%**.

One input-grade change moves a category by $8\frac{1}{3}$ points and the overall by about 2.78 points. These are arithmetic sensitivities, not confidence intervals. If C3 or V3 increased by one grade, the overall would display 72%. If V2 decreased by one grade, it would display 67%. Increasing both C3 and V3 would produce 75%. The private revision history records the competing practical assessments and the reasons for the retained 3/3/2. No overall percentage was treated as a target.

NR means not responsibly rateable; NA means genuinely inapplicable. Neither is zero. A required missing input would withhold the category and overall score. Here the documented evidence supports bounded judgments despite individual source gaps. Ratings are not a validated measurement of truth, consensus, personal effectiveness, or cost-effectiveness. Equal weights are an editorial convention.

10 Verification, coverage limits, and review record

What the checks establish

The local evidence work covers every substantive chapter and relevant notes, and preserves a common register of examined claims. Exact quoted phrases were checked against the supplied EPUB. Important numerical and design details were checked in original tables or methods where available. The primary editor separately checked the spacing arithmetic and cardiology-study outcome groups. Full-source access is never inferred merely from a citation, a filename, or a model's claim to have read it.

The reader essay was reviewed in full for evidence, fair representation, scope, scoring, and prose. Three separate AI reviewers examined their assigned claims and the essay's overall argument. Material repairs included the Scottish earnings interpretation, the analogy comparator, the 2025 base-rate distinction, the Challenger mechanism, clinical outcome groups, and the separation of book safeguards from editorial additions. The final text and source notes are also checked for internal agreement.

What remains outside the claim of verification

- This is not an exhaustive audit of every book citation or every historical anecdote. The register states the examined scope rather than claiming a population error rate.
- No original participant, patent, or forecasting dataset was rerun. No new experiment was conducted.

- Some final papers, underlying interview data, full supplements, and historical primary materials remain inaccessible or unread. Each gap is identified where it matters.
- The original music-study full-text/Table VII check remains unconfirmed unless a retrievable source is obtained; the final review uses only the independently supported sample, interview design, and teacher-judgment qualification.
- Challenger is treated as a contested causal and information question. The review does not claim to settle all engineering reconstruction or all retrospective models.
- A bounded notice search is not a comprehensive source-integrity clearance. No statement that an inaccessible page contains no notice is made.
- No independent human scientific review, legal clearance, author approval, or publication is represented. First-person editorial applications are proposed writing for Jason's review, not invented personal experience.

Pro drafting and the revision exchange

The initial essay text was recovered from a visible GPT 6 Pro drafting step. Its later final handoff reported unavailable tool results, and the complete saved essay/appendix files could not be recovered. The original text is retained as an observed working draft, not a verified completed package. The local appendix was therefore prepared from independently documented source checks. A preserved selection record does not establish that every source-read claim inside it is true.

The private review history records this discrepancy and identifies each version supplied for subsequent Pro review. It distinguishes received responses, accepted changes, and any open findings. This review was prepared with AI assistance. The record does not convert repeated model agreement into human peer review.

11 References and actual source access

The following reference groups preserve source identity and the evidence actually inspected. Some sources recur in more than one group because they support different checks; repeated entries are not independent studies. A public link identifies a source, not a promise of unrestricted access. No original datasets were rerun.

Learning and development

references: versions and actual access

Access date: 15 September 2026. “Read” below identifies the material actually inspected, not everything named in a paper’s references. No participant-level analysis or source code was rerun. Primary articles hosted in author or institutional repositories retain their original authorship; a repository copy is not a new study. Source-access claims from the unsuccessful Pro handoff are not used to upgrade these records.

bahrack1987

Bahrack, H. P., & Phelps, E. (1987). Retention of Spanish vocabulary over 8 years. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13, 344–349. DOI; original article PDF.

Access/version: original article methods, results, Tables 1–5 and discussion inspected; Table 2 visually checked independently by two AI review passes. Before the book. The arithmetic was recomputed from reported values; original data were not reanalyzed.

moesch2011

Moesch, K., Elbe, A.-M., Hauge, M.-L. T., & Wikman, J. M. (2011). Late specialization: the key to success in centimeters, grams, or seconds (cgs) sports. *Scandinavian Journal of Medicine & Science in Sports*, 21, e282–e290. DOI; original PDF.

Access/version: publisher abstract and article methods, results and discussion read; Table 2 visually checked. Online March 15, 2011, before the book. No within-sport reanalysis or validation of recalled histories.

gulich2017

Gulich, A., Kovar, P., Zart, S., & Reimann, A. (2017). Sport activities differentiating match-play improvement in elite youth footballers—a 2-year longitudinal study. *Journal of Sports Sciences*. DOI.

Access/version: primary publisher abstract read; full methods, tables and supplement not accessed. Online March 28, 2016; 2017 issue. Before the book. Prospective youth improvement must not be relabeled adult attainment.

gulich2021

Gulich, A., Macnamara, B. N., & Hambrick, D. Z. (2021/2022). What Makes a Champion? Early Multidisciplinary Practice, Not Early Specialization, Predicts World-Class Performance. *Perspectives on Psychological Science*. DOI; author-hosted PDF.

Access/version: abstract, methods framing, results and limitations inspected. Online July 14, 2021; January 2022 issue. Later evidence, one study across versions. Not every underlying report was independently audited.

gulich2025

Gulich, A., Barth, M., Hambrick, D. Z., & Macnamara, B. N. (2025). Recent discoveries on the acquisition of the highest levels of human performance. *Science*, 390, eadt7790. DOI; author's published PDF.

Access/version: review summary, substantive article pp.1–8, Tables 1–3, captions, relevant references and availability statement read; article p.6 visually checked. Published December 18, 2025. Supplementary Figure S1/Table S1 and full screening protocol were not retrieved; the supplement returned 403. Study overlap and pooling were not independently reconstructed.

nivard2025

Nivard, M. (2025). Selection and base-rate critique of Güllich et al., version 2. DOI.

Access/version: all nine pages of v2, dated December 21, read, including simulations, empirical comparisons and limits. **Preprint; peer review not established.** December 20 v1 is an earlier version, not another replication. Simulations and reanalysis were not rerun; its chess comparison differs from the original review's.

macnamara2026-interview

Macnamara interview reported in *The Hindu*, January 22, 2026. Institution-hosted newspaper PDF.

Access/version: indexed interview passage read; publisher access failed. A journalist-mediated response was located, not a formal journal rejoinder. It is not used as new empirical evidence; the substantive qualifications were independently found in the original Science article.

kahneman2009

Kahneman, D., & Klein, G. (2009). Conditions for Intuitive Expertise: A Failure to Disagree. *American Psychologist*, 64, 515–526. DOI; primary PDF.

Access/version: relevant argument, pp.519–523, and conclusions read. Before the book. Integrative analysis, not a new randomized experiment comparing generalists with specialists.

gobet1996

Gobet, F., & Simon, H. A. (1996). Recall of rapidly presented random chess positions is a function of skill. *Psychonomic Bulletin & Review*, 3, 159–163. DOI; PubMed.

Access/version: primary abstract read; full paper and underlying experiments not read. Before the book. A qualification of the memory paradigm, not a retraction of the classic work; the original 1973 numerical results were not audited here.

sala2016

Sala, G., & Gobet, F. (2016). Do the benefits of chess instruction transfer to academic and cognitive skills? A meta-analysis. *Educational Research Review*, 18, 46–57. DOI; author-repository PDF.

Access/version: publisher abstract and primary PDF first-page abstract inspected; full methods not audited. Online February 27, 2016. Its design-quality concerns limit causal interpretation; they do not prove that no chess transfer is possible.

trahan2014

Trahan, L. H., Stuebing, K. K., Fletcher, J. M., & Hiscock, M. (2014). The Flynn effect: a meta-analysis. *Psychological Bulletin*, 140, 1332–1360. DOI; primary record.

Access/version: primary abstract and indexed PMC discussion inspected, not the entire article or dataset. Online June 30, 2014. Both pooled variation and support for the familiar rounded historical estimate matter.

pietschnig2015

Pietschnig, J., & Voracek, M. (2015). One Century of Global IQ Gains: A Formal Meta-Analysis of the Flynn Effect (1909–2013). *Perspectives on Psychological Science*, 10, 282–306. DOI; PubMed.

Access/version: primary abstract read; full methods and dataset not audited. Before the book. Historical synthesis does not identify a single environmental cause or current global trend.

must2016

Must, O., Must, A., & Mikk, J. (2016). Predicting the Flynn Effect through word abstractness: Results from the National Intelligence Tests support Flynn's explanation. *Intelligence*, 57, 7–14. DOI; publisher.

Access/version: abstract, introduction and displayed methods/results excerpts read; full paper not obtained. Before and cited by the book. Favorable item-level evidence does not amount to random assignment to modernity or a curriculum.

bratsberg2018

Bratsberg, B., & Rogeberg, O. (2018). Flynn effect and its reversal are both environmentally caused. *PNAS*, 115, 6674–6678. DOI.

Access/version: primary abstract and significance text read; full methods/data not audited. Online June 2018, before the book. The within-family result supports an environmental explanation without identifying one specific cause.

sloboda1991

Sloboda, J. A., & Howe, M. J. A. (1991). Biographical Precursors of Musical Excellence: An Interview Study. *Psychology of Music*, 19, 3–21. DOI/publisher.

Access/version: publisher and author-upload abstracts read. Repeated public-author and publisher attempts did not yield the full paper; restricted-access and 403 responses remain recorded. Exact grouping, Table VII and third-instrument counts are unverified. The Pro access statement did not close this gap. Before the book.

sloboda1999

Sloboda, J. A., & Howe, M. J. A. (1999). Musical Talent and Individual Differences in Musical Achievement: A Reply to Gagné (1999). *Psychology of Music*, 27, 52–54. DOI/publisher.

Access/version: metadata and substantial indexed text from p.52 read; pp.53–54 not read. The original 1991 caution is attested by this reply, not independently read on its original page. Author response, not a formal correction or retraction; published before the book.

sloboda1996

Sloboda, J. A., Davidson, J. W., Howe, M. J. A., & Moore, D. G. (1996). The role of practice in the development of performing musicians. *British Journal of Psychology*, 87, 287–309. DOI.

Access/version: publisher abstract and limited indexed primary text around pp.297 and 308 inspected; not full methods/tables. Before and cited by the book. A minor participant-count difference between the abstract and later reply remains unresolved; it is not used in the reader argument.

ivaldi2011

Ivaldi, A. (2011). Routes to adolescent musical expertise. In *Music and the Mind*, pp.205–224. DOI; publisher chapter.

Access/version: chapter abstract and metadata read; full chapter/tables not obtained. February 2011, before the book. Source identity is confirmed, but instrument proportions and grouping remain unresolved.

limb2008

Limb, C. J., & Braun, A. R. (2008). Neural Substrates of Spontaneous Musical Performance: An fMRI Study of Jazz Improvisation. *PLoS ONE*, 3, e1679. Official full article.

Access/version: primary HTML/PDF, relevant methods, results and discussion read. February 27, 2008, before the book. No imaging reanalysis. Performance-state findings do not identify the best beginner training program.

rohrer2007

Rohrer, D., & Taylor, K. (2007). The shuffling of mathematics problems improves learning. *Instructional Science*, 35, 481–498. DOI; institutional record.

Access/version: institutional abstract read; original full methods/tables not inspected. Before and cited by the book. The institutional record has an alternate displayed title with the same DOI. Exact original numerical effects are not certified here.

brunmair2019

Brunmair, M., & Richter, T. (2019). Similarity matters: A meta-analysis of interleaved learning and its moderators. *Psychological Bulletin*, 145, 1029–1052. DOI; primary abstract.

Access/version: final indexed abstract and the available accepted-manuscript abstract/metadata inspected; full moderation tables and code not audited. Online September 26, 2019, after the book. Earlier conference findings are not the final published estimates.

rohrer2020

Rohrer, D., Dedrick, R. F., Hartwig, M. K., & Cheung, C.-H. (2020). A randomized controlled trial of interleaved mathematics practice. *Journal of Educational Psychology*, 112, 40–52. DOI; deposited primary manuscript.

Access/version: methods, results, discussion and caveats, manuscript pp.10–23, read; publication date checked on first page. Online May 24, 2019; January 2020 issue. Same experiment across versions. The preregistration/data location is identified in the article, but data and code were not accessed or rerun.

dunlosky2013

Dunlosky, J., et al. (2013). Improving Students' Learning With Effective Learning Techniques: Promising Directions From Cognitive and Educational Psychology. *Psychological Science in the Public Interest*, 14, 4–58. DOI; primary abstract.

Access/version: primary abstract read; full monograph not independently read for this audit. Before the book. Used for its explicit utility ratings, not as a substitute for reading every underlying experiment.

carrell2010

Carrell, S. E., & West, J. E. (2010). Does Professor Quality Matter? Evidence from Random Assignment of Students to Professors. *Journal of Political Economy*, 118, 409–432. DOI; original PDF.

Access/version: methods, relevant results and conclusion, including pp.429–430, read. Before the book. No raw-data rerun. The separate Bocconi working paper was downloaded but not substantively audited, and is not counted as a verified replication here.

bailey2017

Bailey, D., Duncan, G. J., Odgers, C. L., & Yu, W. (2017). Persistence and Fadeout in the Impacts of Child and Adolescent Interventions. *Journal of Research on Educational Effectiveness*, 10, 7–39. DOI; primary archive record.

Access/version: indexed primary abstract/context and author-upload figure context read; full quantitative review not obtained. Direct access encountered a challenge or 403. Online November 14, 2016; 2017 issue. Before the book. Exact broad preschool claims are not certified from this limited access.

connolly2011

Connolly, C. J. (2011). *Transition Expertise: Cognitive Factors and Developmental Processes That Contribute to Repeated Successful Career Transitions Amongst Elite Athletes, Musicians and Business People*. PhD thesis, Brunel University, November. Institutional record; original thesis.

Access/version: original PDF independently retrieved; sampling/interviews, relevant findings and limitations read at printed pp.54–58, 63–65, 69–72, 77–80, 111–140, 358–364, 372–377 and 389–394. Pages 55, 57 and Table 4.4 on p.117 visually checked. The full 479-page thesis and interview records were not independently audited. Before and cited by the book; no reliance on Pro's access claim. A targeted title/author notice search found no correction or retraction on September 15, 2026; no replication was verified.

Corrections, responses and replication scope

A targeted public search on September 15, 2026 checked correction/retraction terms for Bahrick, Kahneman–Klein, Moesch, Sloboda–Howe, Limb–Braun, Carrell–West, Brunmair–Richter, Güllich’s sports synthesis and Trahan. No matching formal correction or retraction surfaced. This was not an exhaustive registry or whole-book integrity audit, and peripheral sources did not each receive an individual notice search.

For the 2025 Science review, exact title/DOI and response terms, available author records and Crossref were checked. No formal notice or journal rejoinder was located; the publisher landing page and supplement remained inaccessible. The Nivard preprint and mediated interview above were located at their actual status. These negative searches do not certify the absence of notices, validate the data or establish replication.

Later syntheses often reuse earlier studies. Publication of a deposited manuscript in a later issue is not replication. The 1999 music reply is a substantive qualification, not a retraction. A corrigendum to another article’s use of preliminary Brunmair–Richter findings is not a correction of the final meta-analysis itself.

Analogy, fit and outside-expertise references and access

Checked on **15 September 2026**. “Access” names the version and material actually inspected; obtaining a file or bibliographic record does not certify its results. These records reflect the independent source checks for this review, not GPT 6 Pro’s unverified claims. No underlying dataset was rerun and no independent human review was performed.

The search used targeted title/author and correction, retraction or replication queries, plus publisher, NBER, PubMed/PMC and author/university sources. It was not a systematic literature search or complete Crossmark audit. No additional formal correction or retraction was located for the central Rottman, Malamud, Levitt or Jeppesen papers within that scope; this is not proof that none exists. The guideline retirement and later studies below were located. Course replication reports and adjacent observational happiness research were not treated as definitive replications. All conclusions are bounded by the stated access.

gick1983

Gick & Holyoak (1983). Schema Induction and Analogical Transfer. *Cognitive Psychology* 15:1–38.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Published scanned PDF; images and OCR of methods and Tables 3–6, printed pp. 10–31, inspected. OCR served as a reading aid. Laboratory transfer task.

alfieri2013

Alfieri, Nokes-Malach & Schunn (2013). Learning Through Case Comparisons: A Meta-Analytic Review. *Educational Psychologist* 48:87–113. DOI 10.1080/00461520.2013.775712.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Full published PDF through the author's university publication–page link to OSF; methods, results, moderators and limitations inspected. Heterogeneous studies and multiple outcomes require care.

rottman2012

Rottman, Gentner & Goldwater (2012). Causal Systems Categories: Differences in Novice and Expert Categorization of Causal Phenomena. *Cognitive Science* 36:919–932. DOI 10.1111/j.1551-6709.2012.01253.x.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Full published PDF from an author's university site; methods, table, results and discussion inspected. Small observational group comparison, not a curriculum experiment.

lovallo2012

Lovallo, Clarke & Camerer (2012). Robust analogizing and the outside view: two empirical tests of case-based decision making. *Strategic Management Journal* 33:496–512. DOI 10.1002/smj.962.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Author-repository metadata and abstract only. Full methods and tables were not obtained; exact forecasting figures remain unverified.

malamud2009

Malamud (2009). Discovering One's Talent: Learning from Academic Specialization. NBER working paper 15522.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Working-paper model, data, definitions, country comparisons and robustness sections inspected. Earlier version of malamud2011, not a separate replication.

malamud2010

Malamud (2010). Breadth versus Depth: The Timing of Specialization in Higher Education. *Labour* 24:359–390. DOI 10.1111/j.1467-9914.2010.00489.x; NBER working paper 15943.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Working-paper model, sample, wage results and Tables 1–2 inspected. Published abstract checked. Publisher full/PDF routes returned the abstract; author and repository searches did not yield the final tables. Those tables remain inaccessible. The abstract wording differs between versions, so working-paper tables are explicitly labeled.

malamud2011

Malamud (2011). Discovering One's Talent: Learning from Academic Specialization. *ILR Review* 64(2):375–405. DOI 10.1177/001979391106400209.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Final journal PDF in University of Texas teaching materials, with Cornell repository cover and journal pagination. Definitions, identification, results and conclusion inspected; Tables 3 and 5 visually checked on pp. 391 and 393. Final version of malamud2009.

levitt2016

Levitt (2016). Heads or Tails: The Impact of a Coin Toss on Major Life Decisions and Subsequent Happiness. NBER working paper 22487.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Full working paper; recruitment, design, results, Table 3 and bias analyses inspected. Randomized encouragement with incomplete follow-up, not randomized compulsory job change.

levitt2021

Levitt (2021; online 2020). Heads or Tails: The Impact of a Coin Toss on Major Life Decisions and Subsequent Happiness. *Review of Economic Studies* 88:378–405. DOI 10.1093/restud/rdaa016.

Primary source or copy: source. **Chronology:** After the supplied 2019 edition.

Access and limits: Final journal PDF; causal-method discussion pp. 392–393 and Table 5 p. 395 checked. Same experiment as levitt2016, not a replication.

jackson2012

Jackson (2013 article; 2010 working paper). Match Quality, Worker Productivity, and Worker Mobility: Direct Evidence from Teachers. *Review of Economics and Statistics* 95:1096–1116; NBER working paper 15990.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Working-paper introduction, method description and main reported estimates inspected. Observational teacher–school matching. The stable source ID is retained; it is not a claim that publication occurred in 2012.

duckworth2007

Duckworth, Peterson, Matthews & Kelly (2007). Grit: Perseverance and Passion for Long-Term Goals. *Journal of Personality and Social Psychology* 92:1087–1101. DOI 10.1037/0022-3514.92.6.1087.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Author-uploaded published text; Study 4/5 methods and results, pp. 1094–1096, inspected. Selected West Point cohorts constrain generalization.

crede2017

Credé, Tynan & Harms (2017; online 2016). Much ado about grit: A meta-analytic synthesis of the grit literature. DOI 10.1037/pspp0000102.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Primary abstract and portions of author-uploaded text inspected; complete table audit not performed. Synthesis, not a trial of quitting or changing careers.

milller1984

Miller (1984). Job Matching and Occupational Choice. *Journal of Political Economy* 92:1086–1120.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Primary PDF; abstract, opening model scope and conclusions inspected. Full technical derivation was not reproduced. A formal model's optimum depends on its assumptions.

army2010

Wardynski, Lyle & Colarusso (2010). Towards a U.S. Army Officer Corps Strategy for Success: Retaining Talent. Strategic Studies Institute.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Official report; retention-program discussion pp. 25–29 and notes inspected. Policy evidence with different cohorts and service commitments, not randomized program comparison.

quoidbach2013

Quoidbach, Gilbert & Wilson (2013). The End of History Illusion. *Science* 339:96–98. DOI 10.1126/science.1229294.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Primary paper and supplement; main methods/results and recruitment information inspected. Forecast, retrospective and supplementary longitudinal measures must be distinguished.

roberts2006

Roberts, Walton & Viechtbauer (2006). Patterns of mean-level change in personality traits across the life course. *Psychological Bulletin* 132:1–25. DOI 10.1037/0033-2909.132.1.1.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Indexed primary abstract only; no full-table audit. Mean-level change is not the same measure as momentary behavior or individual rank stability.

bleidorn2022

Bleidorn et al. (2022). Personality stability and change: A meta-analysis of longitudinal studies. *Psychological Bulletin* 148:588–619. DOI 10.1037/bul0000365.

Primary source or copy: source. **Chronology:** After the supplied 2019 edition.

Access and limits: Indexed primary abstract only; detailed methods/tables not audited. Later synthesis relevant to both stability and change.

watts2018

Watts, Duncan & Quan (2018). Revisiting the Marshmallow Test: A Conceptual Replication Investigating Links Between Early Delay of Gratification and Later Outcomes. *Psychological Science* 29:1159–1177. DOI 10.1177/0956797618761661.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

Access and limits: Primary abstract and indexed methods/results excerpts inspected, not all supplementary analyses. Conceptual replication; acknowledged in the book's footnote.

sperber2024

Sperber et al. (2024). Delay of gratification and adult outcomes: The Marshmallow Test does not reliably predict adult functioning. *Child Development*. DOI 10.1111/cdev.14129.

Primary source or copy: source. **Chronology:** After the supplied 2019 edition.

Access and limits: Primary abstract, preregistration/methods and discussion excerpts accessed; publisher identity/date checked. Intermittent PMC access challenge. Adult follow-up of the same SECCYD cohort as watts2018, not an independent sample.

quoidbach2020

Quoidbach, Gilbert & Wilson (2020). Your life satisfaction will change more than you think: A comment on Harris and Busseri (2019). *Journal of Research in Personality* 86:103937.

Primary source or copy: source. **Chronology:** After the supplied 2019 edition.

Access and limits: Primary comment PDF abstract and explanation inspected. Original Harris–Busseri analyses not fully audited. Related life-satisfaction debate, not an exact personality-task replication.

jeppesen2010

Jeppesen & Lakhani (2010). Marginality and Problem-Solving Effectiveness in Broadcast Search. *Organization Science* 21:1016–1033. DOI 10.1287/orsc.1090.0491.

Primary source or copy: source. **Chronology:** Available before the supplied 2019 edition.

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Innovation and judgment references and access record

Checked on 15 September 2026. "Full article" below describes access, followed by the sections actually inspected. A downloaded image or invalid file is not treated as a read paper. Author manuscripts, published versions, abstracts and follow-ups are distinguished. These records come from this review's independent checks; they do not adopt GPT 6 Pro's unverified source-access claims. No underlying dataset was rerun.

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Access and limits: Full primary PDF accessible; introduction and relevant engineering/model sections (including sections 3 and 5) inspected. Complete paper, supplements and models were not independently reproduced.

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Relevant interests

Jason Hreha is the author of the commercially available *Real Change* and offers behavioral-science services. These are relevant commercial and intellectual interests, including potentially competing books, explanations, or services. Those official pages were retrieved during this review on 15 September 2026; their search-accessible representations may reflect earlier crawls.

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