

Contents

Entropy to the Mean	2	9. Cross-substrate recurrence	19
Winning Streaks Carry a Rising, Measurable Cost	2	9.1 Soccer: completed football atlas	19
Abstract	2	9.2 Tennis: score-thirds lifecycle aging	20
1. Introduction	3	9.3 Construct audit after the soccer atlas	21
1.1 What this revision adds	4	9.4 The complete substrate record	21
1.2 The measured claim	4	10. Alternative explanations: the present position	22
2. Theory: ordered duration and competitive performance ..	4	11. Falsification and the remaining identification question ..	22
2.1 The ordered state and its clock	5	11.1 Within-team-season vs within-streak causation	23
2.2 The law of form and the descriptive ledger	5	11.2 Disposition discipline	23
2.3 The firewall	5	12. Discussion: what the new discoveries change	23
2.4 Expectations tested by the program	5	13. Claim-status ledger	24
3. Evidentiary grading	6	13.1 Retractions and historical outcomes	25
3.1 Claim status	6	13.2 What changed in v0.9.5	25
3.2 Substrate grades	6	14. Provenance, reproducibility, and availability	26
4. Data and the corrected clock	7	14.1 Evidence sources for this revision	26
4.1 The clock is built before the sample	7	14.2 File identity and execution scope	27
4.2 The repaired data authority	7	14.3 Mechanical repair and analytical revision	27
4.3 Populations and analytical branches	7	14.4 Limitations and availability	28
4.4 Rating systems and estimators	8	14.5 Disclosures	28
5. The college basketball findings	8	Technical notes	28
5.1 The flagship duration coefficient	8	A. Data repairs, band correction, and retained history	28
5.2 The excess beyond the memoryless floor	8	B. Formal retractions, withdrawals, and other dispositions ..	29
5.3 The corrected lifecycle curve	9	C. Historical artifact identifiers carried from v0.9.3	30
5.4 The scoreboard and the expectation, separately	10	References	31
5.5 Duration versus accumulated overperformance	10		
5.6 Ruler disagreement is part of the evidence	11		
5.7 The pooled channel footprint	11		
5.8 New: deep-streak compression is not a uniform box-score decline	12		
5.9 New: complete scoring accounting identifies offsetting contributions	13		
5.10 The remaining benchmark reconciliation	14		
6. The rival-explanation battery	15		
6.1 Calendar and schedule density	15		
6.2 Recent form explains a minority share	15		
6.3 Opponent preparation proxies	16		
6.4 Entry-state stratification	16		
7. Null discipline and inferential language	16		
8. The 2025-26 holdout and the next prospective test	17		
8.1 What was frozen	17		
8.2 Population and integrity	17		
8.3 The lifecycle prediction remains not evaluable	18		
8.4 The signed pooled criterion was met	18		
8.5 Ten of ten channel directions were concordant	18		
8.6 The 2026-27 specification	18		

Entropy to the Mean

Winning Streaks Carry a Rising, Measurable Cost

Evidence from College Basketball and Six Additional Competitive Substrates

A Regression Duel Theory (RDT) White Paper

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Abstract

The hot hand literature asks whether success predicts success. This paper asks whether competitive performance deteriorates as entering win-streak depth increases, beyond the pattern generated by streak selection.

Across eight college basketball discovery seasons, 88,182 Division I team-game rows represent 44,091 games and 2,851 team-seasons. On the corrected all-games clock, the within-team-season opponent-adjusted margin coefficient is -0.2743 points per additional entering win under KenPom and -0.2794 under ESPN BPI. A same-construction memoryless benchmark reproduces -0.1793 of the KenPom coefficient, leaving an excess of -0.0949, with zero of 500 simulated replicates as adverse. The loss-streak comparison moves in the opposite direction and exceeds its own floor by +0.1182. These pooled results are unchanged by the September 2026 reconstruction audit.

Corrected residual excesses retain their ordering: +0.2749 at one to two entering wins, -0.1249 at three to five, -0.6421 at six to eight, and -1.7444 at nine or more. Zero of 500 replicates were as adverse as the deepest residual. Its accounting separates a realized-margin shortfall of -0.7419 from an expected-margin increase of +1.0025, under the rating-based reference construction.

The new channel findings show that this pattern is not a uniform box-score decline. On 87,962 common-support rows, nine of ten previously selected process channels move in directions ordinarily favorable to the streaking team in every depth band. Assist rate is the exception, while credited assist rates fall on both sides of the same games. An exploratory, complete scoring decomposition identifies an increasingly adverse two-point contribution, reaching -1.108 points at nine or more entering wins, offset by favorable three-point and free-throw contributions of +0.659 and +0.529. These sum to +0.080 under that decomposition's box-score reference, not to the -0.742 from the rating-based reference. The construction difference remains unresolved and prevents a common-benchmark attribution of the scoreboard shortfall to particular channels.

In the 2025-26 season, a specification frozen before analytical opening returned win- and loss-side excesses of -0.0788 and +0.0722 and concordant signs in all ten selected channels. The signed result met its frozen directional criterion, with weaker simulation tails than discovery. The primary four-band lifecycle prediction was not evaluable because deep-band coverage fell below predeclared floors.

Soccer has now been developed beyond the inherited EPL result. A completed football morphology atlas adds an EPL measurement-system overlap bridge under Understat, a later-period EPL window, and discovery/confirmation windows in La Liga, Bundesliga, Ligue 1, and Serie A. Across 14 governed football readouts in eight distinct environments, goal-differential coefficients are adverse in every readout. Within the ten Understat league-period cells, own-goals are adverse in 10 of 10 and opponent-goals in 9 of 10, while the relative contribution and statistical prominence of the sub-scoreboard coefficients vary across leagues and time. The earlier candidate that opponent finishing residual was a conserved carrier did not confirm. Tennis retains its positive lifecycle result under its frozen architecture; its post-basketball construct audit remains open. The broader record includes an NHL non-confirmation and an MLB well-powered null.

The evidence supports duration-indexed deformation under the tested constructions. It does not establish an entropic mechanism, a universal law, or confirmatory exclusion of within-team-season composition across streak episodes. The new results sharpen the empirical form without establishing a general deterioration across the measured process channels.

Keywords: regression to the mean, winning streaks, ordered duration, within-team identification, entropression, college basketball, soccer, tennis.

1 Introduction

A winning streak records continued success. It does not establish that the performance producing those wins remains equally dominant, equally efficient, or equally easy to sustain. RDT concerns that distinction. Its object is sustained ordered competitive performance, not a collection of statistics. The statistical channels are measurements through which deformation of that performance can be observed.

The paper's central result is a duration-indexed performance shortfall that exceeds a same-construction memoryless benchmark. The additional basketball finding developed in v0.9.4 is that the shortfall cannot be described as a general collapse in ordinary basketball execution. Ball security, foul control, and several opponent outcomes move favorably under their own references. Credited assists move differently. Complete scoring accounting then reveals adverse and favorable contributions that offset one another under a separate reference construction. Those observations narrow the explanation the evidence can sustain. They do not establish a paradox in basketball arithmetic, and they do not identify a mechanism.

The hot hand literature supplies the relevant methodological warning. Gilovich, Vallone, and Tversky (1985) examined whether recent success predicted subsequent success. Miller and Sanjurjo (2018) demonstrated a selection bias in a commonly used conditional estimator. The lesson for this paper is that conditioning on a streak can generate patterns that must be measured before they are interpreted. The literature is background to the construction problem, not independent evidence for RDT.

1.1 What this revision adds

The September 5 basketball corrections remain the authority. The duration pattern remains after correction of the band null. The pooled excess and loss-side mirror are unchanged. The corrected four-band residual ordering remains positive shallow and progressively adverse thereafter, reaching -1.7444 at 9+. The numerical replacement is documented in Section 5.3 and Technical Note A. [R1]

Deep-streak compression is not a uniform box-score decline. Nine of the ten channels selected by the earlier pooled analysis have favorable point estimates in each of the four bands. The exception is focal assist rate. This is a descriptive pattern on common support, not a newly passed joint hypothesis. [R2]

The bilateral assist result and complete scoring identity make the next question more precise. Both sides record lower assist rates. In the scoring decomposition, an adverse two-point differential deepens while favorable three-point and free-throw differentials offset it. The unresolved issue is the relationship between the two reference constructions, not a missing fourth source of points. [R2-R4]

Soccer is no longer an inherited positive result awaiting development. The completed atlas retains the league-only entering-depth object, reconstructs EPL under Understat, separates an overlapping measurement-system bridge from a later-period EPL window, and adds discovery/confirmation windows in four continental leagues. Goal differential is adverse in every governed football readout; own scoring decline is highly conserved; and the relative contribution and statistical prominence of the sub-scoreboard coefficients change across league-periods. The earlier opponent-finishing carrier claim did not survive temporal confirmation. [R8-R9]

The paper leads with the empirical results. Detailed instrument failures, retractions, repair history, and negative findings remain in footnotes and technical notes. Limitations that directly determine what a result means remain with the result.

1.2 The measured claim

Within the tested college basketball construction, games entered at deeper winning-streak states have increasingly adverse opponent-adjusted performance relative to the benchmark. The event being measured may be a win or the loss that ends the streak. Eligibility does not depend on the outcome of that event.

This is not a claim that every successive game is worse than the last, that every team shares one breaking point, or that the decline has been confirmatorily isolated inside every individual streak. Section 11.1 preserves the distinction between the within-team-season result and the unresolved within-episode composition question.

2 Theory: ordered duration and competitive performance

Regression Duel Theory studies sustained ordered competitive performance and its deformation as ordered duration accumulates. Entropression names duration-indexed adverse deformation beyond the substrate-appropriate null or benchmark. It names the observed form, not its generator.

2.1 The ordered state and its clock

For college basketball in this paper, the ordered state is an uninterrupted sequence of wins across completed games. Entering depth is the number of consecutive wins carried into the game being measured. Every completed game increments or terminates that sequence irrespective of the opponent's Division I classification. Analytical eligibility is applied only after the clock is built.

A loss terminates the winning streak. The next game is entered at winning depth zero. Season boundaries reset the clock under the filed specification. This operational reset is not a finding about the disappearance of any unmeasured physical or psychological burden.

The distinction between the state clock and the analytical sample is fundamental. Excluding a game because a rating or box score is unavailable does not make the game cease to have occurred. The corrected construction and its populations are reported in Section 4.¹

2.2 The law of form and the descriptive ledger

The theory's compact statement is that a streak becomes more difficult as it ages inside its own lifespan. Operationally, the paper asks whether the performance state carries a duration-indexed burden against continuation that appears as adverse deformation in the measured outcomes.

Burden is descriptive here. It does not identify the efficient cause of the observed pattern. Older vocabulary such as debt, credit, ledger, and discharge remains interpretive shorthand, not an operationally measured reservoir or an obligation to lose.

Skill and context are not ignored. The estimators account for team-season differences, opponent-related information, and specified circumstances. They do not directly measure each team's capacity to compensate, or its counterpart's hypothesized burden. A duel is jointly produced, and the bilateral channel analyses preserve that fact without claiming to have measured both sides' latent states.

2.3 The firewall

The observable layer is the performance deformation measured under the declared construction. The interpretive layer is the author's entropic reading of that form. No thermodynamic or information-theoretic entropy is calculated in this paper.

Statistical channels register deformation. They are not the objects said to compress. Neither an adverse statistic nor a favorable statistic is automatically evidence for a particular causal mechanism.

The paper can report a recurring empirical form without claiming that its generator has been identified. Conversely, an unexplained mechanism is not positive evidence for a preferred explanation. The interpretation is confined to Section 12.

2.4 Expectations tested by the program

P1 concerns an adverse ordering across entering-depth bands within team-season. P2 asks whether duration remains informative beyond accumulated opponent-adjusted overperformance. P3 requires the loss-streak comparison not to reproduce the winning-side effect in the same direction.

¹The old matched-only clock omitted completed games without analytical eligibility. The source paper retained the full repair record. Technical Note A consolidates it here without changing the current clock definition.

P4 allows different channels of expression while treating concordant deformation as supporting information. P5 requires the observed pattern to exceed the same-construction memory-less benchmark. P6 asks whether the form recurs in other sports under appropriate clocks and measurements. P7 asks whether duration-linked changes are also present in raw event outcomes rather than only in rating residuals.

P7 does not mean that every raw channel must deteriorate or that a benchmark applied to a raw outcome is rating-free. Section 5 distinguishes those claims explicitly. The earlier broad adverse-channel claim remains retracted.²

3. Evidentiary grading

Individual claims and whole substrates have different classifications. Neither system is a count of favorable results.

3.1 Claim status

Established on discovery denotes the filed result under its specified population, estimator, and null, with the qualification that discovery evidence is not out-of-sample confirmation. **Supported** denotes a directionally concordant or stable result with a narrower evidentiary basis, including some exploratory findings. **Open** denotes an unresolved question. **Speculative** denotes interpretation rather than an empirical result.

The September 5 band and channel extensions are reported at their actual levels. Their numerical patterns are preserved, but no new confirmatory verdict is inferred from a collection of descriptive tails.

3.2 Substrate grades

Grade	Frozen program meaning
A	Prospective confirmation under a frozen instrument and predeclared verdict rule.
B	Frozen discovery with a concordant but non-significant real holdout.
C	Discovery-only candidate, including a reserved holdout blocked before opening.
D	Feasibility failure under the specified construction.
E	Adequately powered directional contradiction under an appropriate construction.

The grade is about the test architecture and its recorded disposition. It does not establish a universal law or make distinct constructs interchangeable. A failure to clear a gate is not relabeled as a pass because a result was interesting.

The inherited taxonomy does not classify a well-powered null cleanly. The newer MLB starting-pitcher null is therefore reported directly, without being hidden inside its historical Grade D or assigned a new grade in this paper. Section 9 carries the full substrate summary.

²v0.8's Claim 13 remains formally retracted. It asserted broad adverse raw-channel deterioration without channel-specific floors. The independent stat-attribution defect is a separate reason its old coefficients were invalid.

4. Data and the corrected clock

4.1 The clock is built before the sample

The discovery authority is B2 v7: the identity-repaired population, the full completed-game chronology, verified recovered transition events, and exact rating-name aliases. All current college basketball results in Sections 5 and 6 use that authority unless a historical construction is expressly identified.

The all-games correction changed entering depth on 7.25% of clock cells across 1,924 of 2,855 team-seasons. The resulting change in the estimate is reported rather than concealed. The raw KenPom coefficient moved toward zero, and the floor-adjusted pooled excess remained adverse.³

4.2 The repaired data authority

Four mechanical repairs underlie v7: historical institutional identity, stat-block attribution by team identity rather than array position, independently verified schedule recovery, and exact rating aliases. The full repair history, exclusion counts, and historical hashes are in Technical Note A.

The completed-game chronology is checked against schedule sources. A separate points identity checks attribution of the team statistics: points must equal twice field goals made plus three-pointers made plus free throws made. Antisymmetry, reciprocity, and reproduction of stored depth from realized outcomes are checked independently.

Those checks address different failure modes. Agreement between two calculations that use the same wrong source ordering would not establish correct team attribution. Agreement between a filtered sample and its own clock would not establish schedule completeness.

4.3 Populations and analytical branches

Layer or branch	Rows	Distinct games	Role
All-games transition clock	93,204	Not reported here as a paired-game count	Defines increments and terminations.
D-I versus D-I analytical panel	89,352	44,676	Mirrored two rows per contest.
Stage A, three-ruler coverage	88,182	44,091	Flagship residual models, 2,851 team-seasons.
Original channel branch	92,906	Not a strict subset of Stage A	Requires usable box scores, not all three rulers.
New common-support band analysis	87,962	43,981	Shared rows for the selected channels and margin outcomes.
Common-support 9+ observations	1,402	1,374	Focal team-game observations, 357 team-seasons.

³Raw KenPom lineage: v4 -0.2972, v5 -0.2920, v6 -0.2773, v7 -0.2743. Pooled excess lineage: approximately -0.110, -0.107, -0.096, -0.0949. These are historical construction comparisons, not four independent replications.

The 1,402 deep observations are not 1,402 independent contests. Some games contribute both sides at 9+, which is why the distinct-game count is 1,374.

The channel branch is a separate branch off the clock. It includes some non-D-I events outside the D-I/D-I panel and excludes events without usable channel data. No analytical branch is allowed to redefine the state clock.

4.4 Rating systems and estimators

The three rating systems are KenPom, ESPN BPI, and Torvik. They are alternative measurement systems, not three independent replications. Their estimates share games, outcomes, and substantial basketball information.

The KenPom input uses the latest weekly snapshot at or before the game date. BPI is attached by event identifier with the pregame stamp check. Torvik is matched on game date and institution pair. All three must attach for Stage A eligibility under the frozen rule.

The flagship model estimates the entering-depth coefficient in opponent-adjusted margin with team-season fixed effects and dyadic cluster-robust variance estimation in the program's score-sum implementation of the Aronow-Samii-Assenova approach.

The band and channel constructions use band indicators, a depth-zero reference, focal-home and neutral indicators, and three absorbed fixed-effect sets. They are not the identical estimator as the pooled flagship. Section 5 identifies which construction supplies each result.

The auxiliary expectation model for the pooled same-construction floor is margin on an intercept, rating difference, and site. The filed v7 coefficients are 0.719003 on rating difference and 3.369278 on site, with R-squared 0.4446 on 78,402 fit rows.

5. The college basketball findings

5.1 The flagship duration coefficient

On 88,182 Stage A rows, the raw entering-depth coefficients are:

Outcome	Coefficient	Dyadic standard error	t
KenPom residual	-0.27426	0.02089	-13.13
BPI residual	-0.27937	0.02064	-13.53
Torvik residual	-0.09651	0.01901	-5.08
Realized margin	-0.17784	0.02984	-5.96

The corresponding expected-margin coefficients are +0.09642 for KenPom, +0.10153 for BPI, and -0.08132 for Torvik. Those differences become important in Sections 5.5 and 5.6.

A negative raw coefficient is not sufficient evidence for the proposed duration-memory effect. A memoryless process can produce a negative coefficient after the same selection and estimation steps. The relevant comparison is the excess beyond that construction's floor.

5.2 The excess beyond the memoryless floor

The floor simulation preserves the completed-game chronology, expectation model, estimator, and eligibility logic. It draws one residual per eligible game, mirrors it across the two sides, constructs the simulated margin, and rebuilds streak depth before applying the analytical mask. A bounded retry handles exact simulated ties.

Non-Division-I transition outcomes are held at their realized values in the primary construction. An all-non-D-I-win sensitivity is separately reported. These are declared design choices, not evidence that every possible no-duration-memory account has been exhausted.

Ordered state and run	Observed coefficient	Simulated floor	Excess	Replicates as extreme
Win streak, 200 draws	-0.27426	-0.18036	-0.09390	0 / 200
Win streak, 500 draws	-0.27426	-0.17933	-0.09493	0 / 500
Loss streak, 200 draws	+0.31660	+0.19934	+0.11726	0 / 200
Loss streak, 500 draws	+0.31660	+0.19843	+0.11817	0 / 500

The primary 500-draw result attributes roughly two-thirds of the raw winning-side coefficient to what this memoryless construction reproduces. Roughly one-third remains beyond it. The loss-side comparison moves in the opposite direction and also exceeds its own floor.

The all-non-D-I-win sensitivity returns excesses of -0.09500 and +0.11758, close to the primary results. The reconstruction audit reports that these pooled results are unaffected by the separate band-replicate defect. [R1]

Finding: the winning-side duration coefficient exceeds its specified memoryless benchmark, and the loss-side comparison does not reproduce the same signed pattern. The causal explanation of that excess remains open.

5.3 The corrected lifecycle curve

The depth-band analysis examines the shape hidden by a single pooled slope. The current band authority is the compliant R1 decomposition adopted in the September 5 publication draft. The band definitions, estimator, seeds, and observed coefficients remain unchanged. The simulated treatment of non-D-I transitions is corrected.⁴

Table 1. Corrected residual contrasts by entering depth, relative to depth zero.

Entering wins	Observed contrast	Corrected floor	Excess	Tail / 500	Rows / team-seasons
1-2	-0.0328	-0.3077	+0.2749	1	30,647 / 2,851
3-5	-0.8895	-0.7646	-0.1249	92	11,458 / 2,430
6-8	-1.8769	-1.2348	-0.6421	2	2,774 / 1,017
9+	-3.6314	-1.8870	-1.7444	0	1,402 / 357

⁴The R1 audit attributes the defective band null to a missing fixed-event override, not to a changed hypothesis. Its initial correction was submitted for ruling, and the subsequent publication draft v3 adopts the compliant file as authority. The repair is post-result and is disclosed as such. [R1-R2]

Source: compliant R1 table in [R1], adopted as the margin authority in [R2]. Values are rounded as reported, so subtraction of rounded columns can differ in the last displayed digit.

The corrected point estimates retain the ordering 1-2 > 3-5 > 6-8 > 9+. The shallow band is above its reference, the 3-5 estimate is modestly adverse without a small tail, and the six-plus bands are progressively more adverse. The 9+ estimate remains the strongest adverse band.

These are adjusted band contrasts, not raw average margins and not a guarantee of deterioration in each individual episode. All four bands meet the discovery evaluability floors of 500 rows and 50 clusters. The out-of-sample shape is a separate question in Section 8.

The favorable shallow band is a result, not an inconvenience to remove. Whether it reflects a stage of order formation or a limitation of the shallow-state benchmark is unresolved. Its value is now +0.2749, not the +0.3003 in v0.9.3. The latter remains part of the correction record, not current evidence.

5.4 The scoreboard and the expectation, separately

The residual is actual margin minus expected margin. With a shared linear comparison, its excess can be separated arithmetically into those two terms.

Table 2. Corrected rating-reference decomposition, point excesses and tails.

Entering wins	Realized margin	Tail / 500	Expected margin	Tail / 500	Residual	Tail / 500
1-2	+0.1214	53	-0.1535	0	+0.2749	1
3-5	-0.0358	194	+0.0892	0	-0.1249	92
6-8	-0.2108	105	+0.4313	0	-0.6421	2
9+	-0.7419	17	+1.0025	0	-1.7444	0

At nine or more entering wins, the realized-margin contrast is 0.7419 points below its simulated reference while the expectation contrast is 1.0025 points above its reference. Their difference is the residual excess of -1.7444. [R1]

The realized-margin outcome contains no rating subtraction. **Its benchmark is nevertheless rating-dependent:** expected margins help generate simulated wins and therefore simulated entering depths. The result is not a rating-free experiment. That qualification also applies when raw channel outcomes are evaluated on the same generated clock.

The realized-margin component is supported, but weaker than the residual result. Its corrected tail is 17 of 500 rather than 11 of 500. The accounting does not identify how much of a causal process belongs to ratings and how much belongs to actual play. It separates the two measured terms under this reference construction.

Section 5.9 reports a different box-score reference that yields a near-zero net excess. That result must be considered with this table rather than treated as a decomposition of it.

5.5 Duration versus accumulated overperformance

The direct mean-reversion objection is that entering depth is only a proxy for the amount a team has recently overperformed. The horse race enters depth and accumulated within-team-season opponent-adjusted overperformance in the same model.

Ruler	Depth alone	Joint depth	Joint overperformance	Depth retained
KenPom	-0.2743	-0.3226, t -10.7	+0.0090, t +2.4	117.6%
BPI	-0.2794	-0.3296, t -11.0	+0.0096, t +2.5	118.0%
Torvik	-0.0965	+0.0332, t +1.2	-0.0292, t -7.2	-34.4%
Three-ruler mean	-0.2167	-0.1750, t -6.0	-0.0084, t -2.1	80.7%

Depth and accumulated overperformance correlate at 0.673, 0.645, 0.639, and 0.672, respectively. They are related but not interchangeable.

On KenPom and BPI, adding overperformance strengthens rather than removes the adverse depth coefficient. The overperformance term has the opposite sign from the simple unwinding account. On Torvik, the joint depth coefficient becomes slightly positive and the accumulated-overperformance term absorbs the association.

The finding constrains the particular proxy explanation on two rulers. It does not eliminate every possible mean-reversion model, and the Torvik result remains a substantive counterexample within the battery rather than a detail that can be discarded.

5.6 Ruler disagreement is part of the evidence

Torvik's smaller raw duration coefficient, differently signed expected-margin coefficient, and horse-race inversion may reflect related features of its construction. The program has not established which feature explains them.

The three-ruler mean remains adverse, but averaging is not a resolution of the disagreement. A robust explanation must address why two rulers retain the depth effect strongly and the third behaves differently.

5.7 The pooled channel footprint

Eighteen frozen channels are measured for each side, producing 36 comparisons against their respective floors. The original channel branch has 92,906 rows on the 93,204-row clock and a donor pool of 87,928. The reconstruction reproduces the original channel floors exactly and reports no effect of the band-replicate defect on them. [R1]

Table 3. Ten pooled channel results with zero of 500 replicates as extreme.

Channel	Observed slope	Floor	Excess	Ordinary direction for focal team
Turnover rate	-0.00044	+0.00008	-0.00052	Favorable
Assist rate	-0.00152	-0.00020	-0.00132	Unfavorable
Foul rate	-0.00051	+0.00002	-0.00053	Favorable
Fouls	-0.03507	+0.00143	-0.03650	Favorable
Opponent true shooting	-0.00011	+0.00060	-0.00071	Favorable
Opponent assist rate	-0.00105	+0.00021	-0.00127	Favorable
Opponent free-throw rate	-0.00121	+0.00012	-0.00133	Favorable

Channel	Observed slope	Floor	Excess	Ordinary direction for focal team
Opponent effective field goal	+0.00004	+0.00063	-0.00059	Favorable
Opponent three-point percentage	-0.00007	+0.00066	-0.00073	Favorable
Opponent offensive efficiency	+0.03842	+0.11679	-0.07837	Favorable

Source: v0.9.3 Section 5.7, reproduced under R1. Reported values are rounded. Percentages and rates remain in the original fractional units, not percentage points.

Four further opponent channels were reported at one or two exceedances in 500: paint share (+0.00108 excess), free-throw percentage (-0.00073), turnover rate (-0.00029), and turnover-points share (-0.00059). The remaining 22 of the 36 comparisons did not clear their stated floors at those tails.

Focal offensive efficiency illustrates why the floor matters. Its observed slope is -0.10408 and its floor is -0.11685, leaving +0.01277 at 158 of 500. The observed efficiency declines, but not beyond that particular benchmark. Opponent efficiency has a positive observed slope of +0.03842 against a more positive floor of +0.11679. Its negative excess is suppression relative to the floor, not necessarily an absolute decline in observed scoring efficiency.

These distinctions replace the earlier assertion of broad adverse raw-channel deterioration. They also prevent a lower numerical value from being casually called worse performance when lower turnovers or lower opponent shooting ordinarily help the focal team.

5.8 New: deep-streak compression is not a uniform box-score decline

The ten channels selected by the pooled analysis are re-estimated by entering-depth band on universal common support. This provides a like-population description that was missing from v0.9.3. The common-support frame has 87,962 team-game rows, including 1,402 deep observations over 1,374 games and 357 team-seasons. [R2]

Nine of the ten selected channels have favorable point estimates in every band. Across 40 channel-band comparisons, 36 are favorable. Focal assist rate supplies all four exceptions.

Table 4. The ten selected channels at 9+, under their channel-specific references.

Channel	Excess	Direction for focal team	Tail / 500
Turnover rate	-0.00237	Favorable	35
Assist rate	-0.00987	Unfavorable	5
Foul rate	-0.00395	Favorable	6
Fouls	-0.301	Favorable	8
Opponent true shooting	-0.00566	Favorable	4
Opponent assist rate	-0.00959	Favorable	5

Channel	Excess	Direction for focal team	Tail / 500
Opponent free-throw rate	-0.01364	Favorable	0
Opponent effective field goal	-0.00424	Favorable	24
Opponent three-point percentage	-0.00646	Favorable	12
Opponent offensive efficiency	-0.605 points / 100 possessions	Favorable	34

Seven favorable channels meet an individual tail threshold of 25 out of 500. Turnover rate and opponent offensive efficiency point favorably but do not meet it. These are selected, correlated channels, not ten independent experiments. The auxiliary intersection rule was not confirmed.⁵

The bilateral assist pattern deserves separate attention. At 9+, focal assist rate is 0.00987 below its floor and opponent assist rate is 0.00959 below its floor. The common direction is not consistent with describing only the streaking team as losing credited assists while its opponent remains unchanged. It does not establish whether the source is offensive organization, defense, shot composition, scorekeeping, or a shared game-level condition.

An unassisted basket means that no assist was credited. It does not establish that no pass occurred. Similarly, a ratio result does not by itself identify how much came from its numerator or denominator. The more detailed assists-per-possession follow-up remains a separately reported exploratory analysis and is not used here as a new verified population claim.⁶

The contribution of this section is the measured mixed-direction pattern. It narrows the description of the phenomenon beyond a general deterioration story. It does not prove compensation, and favorable channel values are not automatically evidence of resistance to an unmeasured burden.

5.9 New: complete scoring accounting identifies offsetting contributions

A basketball margin has an exact accounting identity. Let each difference be focal minus opponent:

Margin = 2 x difference in two-point makes + 3 x difference in three-point makes + difference in free throws made.

Equivalently, because total field goals made include threes:

Margin = 2 x (FGM difference - 3PM difference) + 3 x 3PM difference + FTM difference.

A linear estimator on common rows preserves this identity in its observed estimates and simulated draws. The exploratory September 5 scoreboard run reports agreement between

⁵The auxiliary pre-specified rule required nine of ten favorable channels to reach an individual tail of 25 out of 500 at 9+. Seven did, so it returned “not confirmed.” Later power analysis does not convert that outcome into a pass. These extensions are discovery-only. [R2]

⁶The supplied September 5 conversational report describes fewer assists per 100 possessions on both sides. The separate assist result JSON and replicate arrays are not included in the reviewed packet. This revision therefore relies on the documented pooled and deep-band assist-rate results rather than promoting the more detailed follow-up to a new verified claim.

observed box-score margin and clock margin on 89,094 compared D-I rows. Its common-support scoring analysis uses 87,962 rows and 500 replicates. [R3-R4]

The original component labels overlapped: 2 x FGM difference assigns two points to every made basket, including each made three. The table below converts that identity into disjoint two-point, three-point, and free-throw scoring contributions. It is a recalculation of the filed point estimates, not a new simulation.⁷

Table 5. Complete scoring contributions under the exploratory box-score reference.

Entering wins	Two-point scoring	Three-point scoring	Free throws	Net margin
1-2	-0.176	+0.272	+0.192	+0.288
3-5	-0.325	+0.410	+0.237	+0.322
6-8	-0.638	+0.476	+0.544	+0.382
9+	-1.108	+0.659	+0.529	+0.080

All figures are adjusted band excesses relative to depth zero and to the box-score reference. Rounded components can differ from the rounded total by 0.001. They are not raw game averages, and they are not components of Table 2's rating-reference excess.

The adverse two-point contribution deepens across the four bands. At 9+, favorable three-point and free-throw contributions offset approximately -1.108 points in two-point scoring. The arithmetic identifies where the net result comes from inside this reference construction.

At 9+, focal two-point makes are approximately 0.151 below their floor while opponent two-point makes are approximately 0.403 above theirs. The adverse differential therefore involves both sides. These counts do not identify shot location within the arc, defensive causation, or a particular paint mechanism.

The corrected two-point combination requires the joint replicate arrays for its own uncertainty calculation. The old tail for 2 x FGM difference cannot be attached to 2 x (FGM difference - 3PM difference). The present table reports point estimates without inventing that missing tail.

5.10 The remaining benchmark reconciliation

The observed 9+ realized-margin contrast is -1.5325 under both constructions. The reference changes.

Reference construction	Observed 9+ margin contrast	Floor	Excess	Tail / 500
Compliant rating-based band reference	-1.5325	-0.7906	-0.7419	17
Exploratory box-score reference	-1.5325	-1.6127	+0.0802	209

⁷The code's comp_2pt is 2 x FGM difference, not points from two-point baskets. The disjoint two-point term is comp_2pt - 2 x comp_3pt, and the full three-point term is 3 x comp_3pt. Their point-estimate identity was recalculated from [R3]. A derived combination needs its own joint-draw uncertainty.

The near-zero box-score result is not omitted. Nor is it treated as proof that the rating-reference result disappears when ratings are removed. **Ratings were not removed from the simulated clock.** The supplied script constructs simulated margins as expected margin plus a donated rating residual, then uses their signs to rebuild streaks. Box-score outcomes use a different residualization. [R4]

For donor game d and recipient game g , write actual margin as M , the rating expectation as e , and the fitted box-score baseline as b . The two reconstructed margins have the forms:

Clock margin = $e(g) + M(d) - e(d)$.

Reconstructed box margin = $b(g) + M(d) - b(d)$.

Their difference is $[e(g) - b(g)] - [e(d) - b(d)]$. It need not be zero. The observed-score identity and the component-sum identity do not establish equality between the simulated scoring outcome and the simulated margin that determined the winner.

This is a specific reconciliation requirement, not a blanket rejection of residual-based channel comparisons. The same recipients, donors, row masks, and simulated depths must be used to account for the relationship between the two outcomes before the box-score components can be called an allocation of the rating-reference shortfall.

The two floors differ by approximately 0.822 points. That gap is not numerically identical to the +1.0025 expected-margin excess in Table 2, so the latter cannot by itself explain the former. [R1, R3]

Current finding: the scoring accounting is exact within the box-score construction. The two-point term is adverse and offset by other scoring terms. The channel-to-scoreboard mechanism under a common benchmark is still open. A result not distinguished from one exploratory reference is not proof of exact equivalence or no effect.

6. The rival-explanation battery

Six rival tests were rerun on the corrected all-games frame. Four were recovered from frozen specifications and two reconstructed from the surviving record, with reconstruction declared before execution. That provenance distinction is preserved.⁸

6.1 Calendar and schedule density

Adding 174 season-week fixed-effect cells retains 101.1%, 101.1%, 101.9%, and 101.2% of the depth coefficients across the three rulers and their mean. The measured duration association is not absorbed by that calendar adjustment.

With rest days and games in the preceding nine days included on 86,196 rows, the depth coefficient is -0.2710, t -12.6. Rest has coefficient -0.0119, t -0.5, and recent game count +0.0417, t +0.6. These particular fatigue proxies do not explain the result. They do not exhaust every form of fatigue or roster strain.

6.2 Recent form explains a minority share

On 79,629 rows, adding the average residual over the preceding three games yields depth -0.2408, t -10.4, and recent form -0.0211, t -3.1. Depth retention is 87.8% under KenPom, 80.3% under BPI, 96.7% under Torvik, and 85.9% under the three-ruler mean.

⁸v0.9.3 reports four intact frozen specifications and two reconstructions declared before execution. This revision preserves that disclosure and does not represent all six as reruns from original source files.

For the two flagship rulers, that is roughly 12% and 20% attenuation of the raw depth coefficient. It is not a causal allocation of 20% to recent form and 80% to entropression. The large remaining depth association is still subject to the benchmark and identification qualifications elsewhere in the paper.

The result is useful because the strongest measured recent-form rival partly succeeds but does not remove the association on either flagship ruler.

6.3 Opponent preparation proxies

The opponent-preparation model includes opponent entering depth, recent loss state, and interaction with focal depth on 86,018 rows. Focal depth remains -0.2681, t -12.5. The reported opponent-depth coefficient is +0.0831, recent-loss-state coefficient +0.6878, t +7.0, and interaction -0.0098, t -0.3.

The focal association is not materially altered by this operational specification. The interaction is not distinguishable from zero. These results do not settle unmeasured rivalry effects, coaching emphasis, or opponent adaptation. They also do not measure an independent entropic tailwind.

6.4 Entry-state stratification

The entry test asks whether the depth result is confined to streaks that began from an inflated measured level. Of 21,142 episodes, 7,674 lack sufficient pre-window information for the tercile construction. The coldest tercile contains 4,492 episodes with mean pre-streak local quality -3.701, all at or below zero.

Pre-streak entry tercile	Depth coefficient	t	Rows
Cold	-1.3263	-11.7	9,331
Neutral	-1.2215	-11.5	9,760
Hot	-1.0648	-12.6	10,062

The adverse slope is strongest in cold entries and weakest in hot entries. That is inconsistent with the simple proposal that the pattern is generated only by unusually inflated entry states. It does not exclude all entry-selection or episode-composition accounts.

The sixth member of the battery is the same-construction floor in Section 5.2. Taken together, the battery constrains specified alternatives. It does not make duration a proven causal variable.

7. Null discipline and inferential language

A useful reference must reproduce the relevant construction: chronology, clock, estimator, fixed effects, expectation model, eligibility, and donor rules. The target is to remove duration memory while retaining the structures that could otherwise create an apparent duration effect.

The mask goes on after the clock. Non-D-I transition outcomes are held as declared. Independent ports provide numerical calibration. The R1 audit shows why calibration of a few headline outputs is insufficient: the channel outputs reproduced exactly while the separate band replicate contained a different transition rule. Technical Note A documents that distinction.

The current box-score reconciliation adds another requirement when an exact scoring decomposition is claimed: the relationship between the score assigned to a simulated game and the score used to determine its win state must be checked. A correct observed identity does not establish that simulated identity.

A report of 0/500 means that none of the 500 generated values was as extreme. It is not a zero probability and not a mathematical upper bound on the underlying tail. The Monte Carlo resolution is of order 1/500. Formal inference depends on the sampling or randomization validity of the construction, not only the number of simulations.

The scoreboard exploration has 42 objects across four bands, or 168 descriptive cells. Its assembler chooses the lower or upper tail according to the observed direction. Those counts should not be presented as a family of prospectively fixed one-sided tests. The selected ten-channel extension also inherits its selection history and correlated measurements.

The paper distinguishes a passed frozen criterion, an exploratory point estimate, a descriptive tail, and an unresolved mechanism. None is substituted for another.

8. The 2025-26 holdout and the next prospective test

8.1 What was frozen

The 2025-26 confirmation specification was frozen and hashed before analytical opening of the quarantined season: population, clock, eligibility, estimator, bands, evaluability thresholds, primary predictions, channel sign set, and dispositions. The registered evidence is the program's dated artifacts and hashes, not a public registry timestamp.

The season had already been played. The term cold holdout therefore refers to analytical opening under a frozen specification, not to the absence of every earlier qualitative observation of those teams. The case discussions of 2025-26 games are not independent new holdout confirmations.⁹

The execution was one-shot under that specification, with numbered amendments identified in the source record. The 2026-27 specification was frozen before its season's first game and is described separately as preregistered.

8.2 Population and integrity

All 365 D-I team-seasons were resolved. There were 6,318 scheduled events, including 18 zero-zero placeholders excluded as unplayed, leaving 6,300 completed games. All matched between the compared sources, with zero unmatched in either direction.

There were 5,752 D-I/D-I games and 548 non-D-I transition events. Six D-I losses to non-D-I opponents included two that terminated a live winning streak. Stage A contains 5,718 games, 11,436 rows, 365 team-seasons, and 4,130 dyads. Thirty-four games fail the BPI pregame stamp check.

The channel checks cover 6,299 games, with 6,287 passing the construction gate, 12 unrecornciled, zero attachment failures, and 12,029 rows. The season's defective weekly rating archive was replaced before any confirmation coefficient was computed.¹⁰

⁹The author reports qualitative observation of 2025-26 teams during the season, and those games also appear in the case-study history. Analytical quarantine and total ignorance of the season are different claims. No exact date or extent of earlier quantitative case exposure is certified by this manuscript.

¹⁰The archive's failure was proved by static team ratings through time, not by its data-through field. The repair preceded the confirmation coefficients under Amendment A1. Full diagnostic figures are in Technical Note B.

8.3 The lifecycle prediction remains not evaluable

The 9+ band contains 213 rows and 46 clusters against requirements of 500 and 50. The 6-8 band contains 379 rows, also below the row requirement. The frozen lifecycle prediction P1 is therefore **NOT EVALUABLE**, neither a pass nor a failure.

The September 5 reconstruction flagged the older 2025-26 band-null output as presumptively affected by the same instrument lineage. No corrected holdout band output is supplied for this revision. The old descriptive band excesses are consequently retained only in the historical note, not as current numerical support.¹¹

The coverage-based P1 disposition does not depend on those descriptive excesses. It remains unchanged.

8.4 The signed pooled criterion was met

State	Excess, 500 draws	Tail / 500	Earlier 200-draw result
Win streak	-0.07876	48	-0.08296, 17 / 200
Loss streak	+0.07216	71	+0.08127, 24 / 200

The frozen P3 criterion was directional. Both signs meet it, and both magnitudes are in the neighborhood of discovery's -0.0949 and +0.1182. The tails are weaker than discovery's zero of 500 and are reported rather than reclassified after the result.

The all-non-D-I-win sensitivity yields -0.07877 and +0.07201. Amendment A2's refit sensitivity yields -0.09233, tail 35, and +0.09020, tail 47. These are additional reported comparisons, not a reason to select the most favorable version.

The appropriate substantive description remains supported out-of-sample sign and magnitude concordance. The result is not a separate stringent significance confirmation of the entire lifecycle shape.

8.5 Ten of ten channel directions were concordant

All ten discovery-selected channels had the predicted sign in the holdout. Opponent assist rate was the strongest individual result at one of 500.

No joint probability follows from that count. The channels overlap mechanically and the two sides of a game are dependent. The earlier independence calculation remains withdrawn, and the correlation-preserving joint test is reserved for the prospective specification.¹²

This pooled sign result does not independently validate the later September 5 deep-band extension or the exploratory scoring decomposition. Those are different analyses.

8.6 The 2026-27 specification

The next preregistration includes population and acquisition rules, rating validation, a pooled two-season evaluability path for P1, a correlation-preserving joint channel test, and pre-declared dispositions. Streaks reset at season boundaries under that specification.

¹¹v0.9.3's descriptive band excesses were +0.1717, +0.1401, -0.1043, and -1.9728. R1 flags the 2025-26 band file as presumptively affected, not reproduced. They are retained here only as historical values and carry no current inferential weight. P1 was already not evaluable on coverage. [R1]

¹²A ten-independent-flips calculation is invalid because true shooting, effective field goal, and three-point percentage overlap, fouls and foul rate overlap, and the two sides share a game. The prospective joint test is not retrospectively applied to the result that motivated it.

The final rating validator rejects an archive with fewer than 90% of teams showing within-team variation, fewer than 90% having different first and last values, a median within-team rating standard deviation below 0.5, or a single shared team-rating fingerprint across all snapshots. The data-through field is recorded rather than gated. Its earlier misuse is documented in Technical Note B.

This paper does not amend a future criterion after observing these new discovery results.

9 Cross-substrate recurrence

The positive soccer and tennis findings deserve their full descriptions. They are not merely supporting anecdotes, and they are not interchangeable copies of the basketball test. v0.9.5 changes the soccer record materially: the prospective EPL anchor remains intact, but the soccer program now includes a completed multi-league, two-period Understat atlas and a same-league measurement-system bridge.

9.1 Soccer: from EPL confirmation to completed football atlas

The corrected, locally replicated EPL Football-Data instrument remains the prospective soccer anchor. It reports adverse entering-depth coefficients in shot differential, shots-on-target differential, and goal differential, not goal differential alone. [R5]

EPL channel	Entering-depth coefficient	Fraction at least as adverse
Shot differential	-0.176187	0.006
Shots-on-target differential	-0.099589	0.011
Goal differential	-0.077780	0.000

These are the coefficients and replicate fractions from the local v0.5 console record. A reported fraction of 0.000 is not a probability of zero. The frozen object is consecutive EPL league wins. A draw or loss resets that league clock. The target match is scored regardless of whether it is a win, draw, or loss. The model includes team-season fixed effects, pre-match opponent season-to-date goal-difference strength, venue, and rest, with a within-team-season permutation reference.

Since v0.9.4, the football atlas has added a second measurement system and a second time window. EPL Window A (2014-15 through 2021-22; 2,251 observations) overlaps the Football-Data EPL period and serves as a measurement-system overlap bridge: same league, same years, different taxonomy. EPL Window B (2022-23 through 2024-25; 853 observations) is a later-period EPL readout. The same Understat taxonomy was also applied to La Liga, Bundesliga, Ligue 1, and Serie A in discovery and confirmation periods. [R8-R9]

Across the full governed football record, 14 readouts across eight distinct football environments show an adverse goal-differential coefficient. Those 14 readouts represent 13 unique league-period cells plus one overlapping EPL measurement-system bridge. They are not 14 independent cross-sport confirmations. The value of the count is narrower: no governed football readout has returned a flat or favorable goal-differential coefficient under accumulated winning duration. [R8-R9]

Within the ten Understat league-period cells, the directional tally is:

Channel	Adverse cells / 10	Reading
Goal differential	10/10	Universal across the Understat cells
Own goals	10/10	Own scoring decline highly conserved
Opponent goals	9/10	Strongly recurrent, not invariant
Own finishing residual	10/10	Direction universal; prominence varies
Expected-goal differential	9/10	One reversal
Own expected goals	9/10	One reversal
Opponent expected goals	9/10	One reversal
Opponent finishing residual	7/10	Most variable sub-scoreboard channel

The tally changes the interpretation of the soccer result. The discovery atlas had identified opponent finishing residual as the clearest common sub-layer. Fresh seasons did not confirm that claim: no confirmation league reached the earlier 0.95 upper-tail marker, and Germany and France reversed sign. The conserved object sits higher in the decomposition than that proposed carrier. Goal-differential registration recurs. Own scoring decline is highly conserved. Opponent scoring rise is strongly recurrent. The statistical prominence of the decomposition beneath them varies. [R8]

The EPL Window A to Window B comparison supplies the cleanest within-league demonstration. Own-goals changes little (-0.043 to -0.050), while own-finishing-residual moves from -0.042 to -0.008 and own expected goals from -0.002 to -0.043. The higher-order own-scoring registration is nearly stable while the coefficient decomposition changes. This is evidence of carrier plasticity in statistical prominence, not evidence that one channel causes another. [R9]

Deep-shape claims remain bounded. Window A clears the frozen collapsed 1-4 versus 5-8 adequacy rule and supplies channel-specific shape information; Window B does not. Full 1-2 / 3-5 / 6-8 morphology remains not interpretable across the atlas because the deep cells are sparse. The soccer result therefore remains an enter-depth compression result, not a claim that football reproduces the full deep-load shape available in college basketball.¹

9.2 Tennis: score-thirds lifecycle aging

The confirmed tennis object is within-streak score-channel aging under the frozen lifecycle-null instrument, not the entire phase-tier or personal-ceiling program. The clock is early, middle, and late thirds of completed winning streaks of length at least six. [R6]

The instrument walks 131,187 matches and identifies 2,825 eligible streaks containing 24,350 matches. The structure-preserving residual null accounts for tournament round, surface, era, best-of format, level, and pre-match strength bands under a frozen cell-collapse rule.

Tennis lifecycle quantity	Filed result
Observed residual slope	+0.0496
Null median	+0.0083
Null band	[-0.0031, +0.0201]
Reported excess over null median	+0.0412
Replicates reaching observed slope	0 / 2,000

¹The 14 governed readouts include later-period repetitions of the same leagues and one overlapping EPL measurement-system bridge. The ten-cell directional tally is Understat-only. It should not be read as 14 independent environments or as 14 additional Grade A substrates. [R8-R9]

The excess is reproduced as filed from unrounded calculations. Later-phase wins required more sets under this construction after the specified structural adjustment. Two synthetic fixtures, including a structure-only case, were passed before execution. Those fixtures establish performance on the tested constructions, not exhaustive protection against every possible structural account.

Approximately 21% of eligible opponent ranks were missing and handled by the predeclared fallback, not dropped. The phase-tier and bridge results remain supporting history. Personal-ceiling rupture and the score-channel lifecycle are not treated as one established mechanism.²

9.3 Construct audit after the soccer atlas

The basketball clock correction made one question unavoidable across sports: does the clock represent the intended ordered state independently of analytical availability?

The soccer development sequence identified in v0.9.4 is now complete under an intentionally league-only object. The atlas does not claim that a league-only streak is identical to an all-competition streak. It retains the league definition, reconstructs the same EPL period under a second measurement system, separates that overlap bridge from a later EPL window, and repeats the same enter-depth construction across four continental leagues and a fresh time window. At the level actually tested, the soccer clock is a declared league-state clock, not an accidental clock truncated by channel availability. [R8-R9]

That does not erase every construct question in football. Cup interaction, multi-competition load, and all-competition winning states remain different candidate objects. They are not defects in the filed league-only instrument unless a future specification claims to measure them.

Tennis still carries the analogous post-basketball audit. Qualifying rounds, walkovers, retirements, competition boundaries, and missing records remain construction questions for a future tennis development sequence. Its existing Grade A finding remains a finding under the architecture actually tested. Comparable rigor does not require identical depth bins, channels, or coefficients.

9.4 The complete substrate record

Substrate	Recorded standing	Qualification
CBB	Discovery result with supported 2025-26 sign and magnitude concordance	Lifecycle holdout not evaluable; within-episode composition unresolved.
Soccer	Grade A EPL anchor; completed football atlas	14 governed readouts across eight football environments; 13 unique league-period cells plus one EPL measurement-system bridge. Full deep-band morphology remains sparse.
Tennis	Inherited Grade A	Score-thirds lifecycle confirmation; post-basketball construct audit still open.
NHL	Grade B, not confirmed	Real holdout did not clear frozen gate.
NFL	Grade C	Pre-holdout feasibility gate failed; reserved data unopened.
CFB	Grade C	Discovery selection and pre-holdout feasibility limit.
MLB	Historical Grade D, newer null ungraded	Well-powered starting-pitcher null reported in v0.9.3.

The non-confirmations and feasibility outcomes are retained rather than counted as equivalent events or

²The break-channel ceiling and bridge interpretations are not the Grade A confirmation. The supplied memorial reports approximately 21% missing opponent ranks under the frozen fallback. Its observed-minus-median excess is reported from unrounded values. [R6]

treated as additional confirmations. Their execution details and limitations are in the notes.³

Soccer is no longer a research priority in the sense stated in v0.9.4. The football atlas is at a natural stopping point. The next development sequence is tennis: reproduce the current result, certify the intended clock and coverage, and separate any new construction from the inherited confirmation.

10 Alternative explanations: the present position

Selection and mean reversion. A large portion of the raw depth slope is reproduced by the benchmark. The remaining excess is the target, not the raw slope. The direct accumulated-overperformance account is constrained under KenPom and BPI and succeeds differently under Torvik.

Inflated entry and calendar position. Entry-tercile ordering runs against the simplest hot-entry account, and season-week controls leave the coefficient essentially unchanged. These observations do not settle within-episode versus across-episode composition.

Fatigue, recent form, and opponent preparation. The specified rest and schedule-density proxies do not carry the association. Recent form accounts for a minority of its magnitude on the flagship rulers. Opponent proxies do not absorb focal depth. Unmeasured versions remain possible.

Rating construction. Using raw margin or raw channels as outcomes removes rating subtraction from those outcomes. It does not remove ratings from the simulated benchmark. Torvik disagreement and the two-reference scoreboard discrepancy keep this explanation materially open. The paper no longer treats a raw outcome as a rating-free refutation.

A single deteriorating channel. The deep channel pattern does not support general sloppiness across all measured dimensions. The complete scoring identity rules out a missing source of points. It does not establish that the adverse two-point component under one reference causes the scoreboard shortfall under another. The soccer atlas points in the same methodological direction: a higher-order adverse registration can recur while the statistical prominence of sub-scoreboard coefficients changes across league-periods.

Tempo. The pre-specified linear slowdown was not supported by its powered historical instrument and remains retracted. The newer exploratory possession measurements do not revive it. A different nonlinear or corrected-clock test would require a separately specified question.⁴

The evidence constrains particular alternatives. It does not claim that every possible rival has been removed or that unexplained residual variation belongs to RDT by default.

11 Falsification and the remaining identification question

The theory must remain exposed to results that would weaken it. The prospective lifecycle inequalities may fail when sufficient deep observations accumulate. The signed excess may fail to reproduce on adequate future data. The loss-side comparison may cease to separate. A better-specified rival may absorb the depth association. The tennis construct audit may change or remove an inherited result.

The channel findings also carry specific risks. Their directional pattern may not reproduce on independent

³Technical Note B retains the NHL gate failure, NFL and CFB power stops, selection disclosures, and MLB history. The completed soccer atlas does not erase non-confirming results elsewhere and does not create additional cross-sport substrates.

⁴The historical tempo estimate is +0.004548, t +0.552, rather than the earlier -0.07979 claim. It tested a specific linear slowdown on the older clock. A different tempo hypothesis is untested, not automatically supported by the failure of this one.

data. A coherent common-benchmark basketball decomposition may substantially alter the relationship between the process channels and the scoreboard. In soccer, later periods may eventually break the present directional recurrence or reveal that the apparent carrier plasticity is an artifact of the two-window design. Those possibilities are not failures to be defined away after a test.

11.1 Within-team-season is not automatically within-streak causation

The flagship uses within-team-season comparisons. It is therefore not merely a comparison of stronger teams with weaker teams. It does not, by itself, exclude changes in which episodes and game states populate the deeper cells.

The unresolved question is whether a sufficiently powered confirmatory within-episode instrument would establish adverse ordering after addressing composition across episodes. Earlier authorized instruments hard-stopped on recovery power before a verdict-bearing real-data test was authorized.⁵

Release Governance Amendment R1 permits publication only with that objection preserved. It does not permit the claims that pure level-composition has been excluded, that within-episode deterioration has been confirmatorily established, or that the strongest identification claim is complete.

The bounded statement is that deeper entering winning-streak states show worse adjusted performance than the specified strength and memoryless benchmarks predict within team-season. It is not that the paper has demonstrated the same deterioration inside each individual streak.

The selected 2025-26 game narratives do not close this gap. They can illustrate how a lead or a winning state fails. They are not a representative comparison establishing that accumulated duration made those failures more likely.

11.2 Disposition discipline

A frozen prediction retains its recorded disposition. The deep-channel intersection rule remains not confirmed. The 2025-26 lifecycle remains not evaluable. The pooled signed holdout retains its directional pass with weaker tails. Neither rhetorical emphasis nor later explanation changes those results.

Correcting a demonstrable code defect is different from changing a statistical rule to obtain a preferred verdict. The band correction is identified as a post-result mechanical repair, with its changed estimates reported. The scoreboard benchmark issue remains open rather than being assigned a preferred interpretation. The soccer confirmation interpretation is likewise allowed to revise its own discovery-side carrier story: opponent finishing residual was proposed as conserved, fresh data did not confirm it, and the paper says so.

12 Discussion: what the new discoveries change

The central empirical contribution remains a duration-linked competitive-performance pattern beyond the declared memoryless benchmark. Its sign changes with the ordered state. Its depth-band form is not captured by one constant slope. It persists under the specified alternative-explanation tests on the two flagship rulers.

The September 5 basketball analyses improve the description of that pattern. They show that deep entering duration is not accompanied by a general unfavorable movement across the ten selected process channels.

⁵The two power stops and the non-confirmatory exploratory successor are preserved in Technical Note B. Amendment R1 expressly forbids treating that successor as confirmation that pure episode-composition has been excluded.

They establish a bilateral assist-rate pattern on common support. They place all scoring into a complete identity, revealing an adverse two-point term alongside favorable three-point and free-throw terms under the exploratory reference. Those findings make a simple account based on indiscriminate deterioration less satisfactory. They do not establish why the mixed pattern occurs.

The soccer atlas adds a different kind of information. The original EPL result could have been read as one league's specific process signature. The completed atlas shows recurrence at a higher level while the decomposition beneath it changes. Goal differential is adverse in all 14 governed football readouts. Within Understat, own-goals and own-finishing-residual are adverse in all ten league-period cells; several xG and scoring directions are adverse in nine of ten; opponent finishing residual is adverse in seven of ten and failed as the conserved carrier proposed in discovery. The record is not uniformity. It is recurrence at one level and plasticity below it. [R8-R9]

The within-EPL comparison makes that distinction concrete. Own-goals remains nearly unchanged from Window A to Window B (-0.043 to -0.050), while own-finishing-residual flattens (-0.042 to -0.008) and own expected goals deepens (-0.002 to -0.043). The higher-order own-scoring registration remains, but the coefficient decomposition changes. A statistical carrier should therefore not be mistaken for the phenomenon itself. The atlas does not identify what determines which carrier is most prominent in a given league-period.

The author's interpretation is that sustained competitive order can remain visibly capable while its continuation becomes more difficult. Skill may preserve performance in some dimensions while other dimensions become less effective. That is an interpretation of the evidence, not a measurement of compensating effort or a latent burden reservoir.

The interpretation must also survive its strongest measurement question. The basketball rating-reference scoreboard shortfall and the near-zero box-score-reference result are not one reconciled effect. A theory of compensation cannot decide which reference is appropriate merely because the word fits the observed mixture.

The cross-substrate record now has a more mature soccer component. Football registers the proposed form through a stable higher-order goal-differential direction with recurrent bilateral scoring deformation and variable sub-scoreboard coefficient prominence. Tennis registers it through the work needed to complete wins across a streak's relative lifecycle. Their clocks and samples differ. Soccer has completed the development sequence identified in v0.9.4 under its league-only definition; tennis has not yet completed the analogous audit.

Nothing here measures entropy directly. Nothing fixes a personal breaking point for a team or player. Confidence, nested within-game order, headwinds, tailwinds, and the selected game narratives remain questions for later work, not newly added empirical conclusions.

The updated result is more specific than a general decay story: sustained winning is associated with an increasingly adverse competitive-performance profile under the main basketball benchmark, while the measured process response is mixed rather than uniformly worse; in football, the higher-order adverse registration recurs even as the statistical decomposition beneath it changes. The remaining task is to explain and independently reproduce that form, not to replace it with a metaphor.

13 Claim-status ledger

Claim	Current standing
Raw residual slope is adverse under all three rulers.	Established on discovery under filed models.
KenPom winning-side excess is -0.09493 beyond its floor.	Established on discovery, 0 / 500.
Loss-side excess is +0.11817.	Established on discovery, 0 / 500.
Corrected residual bands are +0.2749, -0.1249, -0.6421, -1.7444.	Discovery ordering preserved, not a new holdout verdict.
Corrected 9+ realized-margin excess is -0.7419.	Supported under rating-based reference, 17 / 500.
Duration survives accumulated-overperformance control.	Strong on KenPom and BPI; Torvik exception open.
Ten pooled channel contrasts exceed their floors at 0 / 500.	Filed discovery finding; channels correlated.
Nine selected channels point favorably in each band.	Descriptive common-support extension; auxiliary rule not confirmed.
Focal and opponent assist rates are lower at 9+.	Discovery measurement; mechanism unresolved.
Disjoint scoring terms at 9+ are -1.108, +0.659, +0.529.	Recalculated point estimates under box-score reference.
Their sum is +0.080, not -0.742.	Exact within-construction accounting; reference reconciliation open.
Recent form attenuates the flagship depth coefficient.	Minority share, not a causal percentage allocation.
2025-26 signed pooled criterion was met.	Supported sign and magnitude concordance; weaker tails.
2025-26 lifecycle ordering replicated.	Not evaluable; no such claim.
Ten holdout channel directions agree.	Concordant pattern; no independent-channel joint probability.
Football goal differential is adverse across 14 governed readouts in eight environments.	Established within the governed soccer record; 13 unique league-period cells plus one overlapping EPL measurement-system bridge.
Understat own-goals are adverse in 10/10 cells; opponent-goals in 9/10.	Own scoring decline established within the decomposition; opponent scoring rise strongly recurrent / supported, not invariant.
Opponent finishing residual is a conserved football carrier.	Not confirmed: 7/10 adverse in the Understat tally; two continental confirmation reversals; 0/4 confirmation leagues past the earlier 0.95 marker.
Sub-scoreboard coefficient prominence is stable across league-periods.	Not confirmed. EPL Window A to Window B reallocates own-side coefficient prominence between finishing residual and expected goals.
Tennis remains a positive inherited substrate.	Grade A score-thirds lifecycle confirmation; post-basketball construct audit remains open.
Pure episode-composition is excluded.	Not established; remains open.
Entropy is the measured cause or a team's threshold is calibrated.	Not claimed.

13.1 Retractions and historical outcomes

The pace-slowdown claim and v0.8's broad adverse raw-channel claim remain retracted. They are not restored by the mixed basketball channel pattern or by the soccer atlas. Numerical repairs and working-record withdrawals are listed separately in the notes so that ordinary corrections are not mislabeled as additional formal retractions.

13.2 What changed in v0.9.5

This version preserves every v0.9.4 college basketball number and disposition. It updates soccer from an inherited Grade A EPL result with an open development sequence to a completed football morphology atlas. The revision adds the EPL Understat measurement-system overlap bridge, the later-period EPL window, the two-period four-league continental decomposition, the ten-cell directional tally, and the negative confirmation

result for opponent finishing residual as a conserved carrier. It also carries forward the atlas’s central distinction between directional recurrence and coefficient-prominence plasticity. [R8-R9]

The abstract, Section 1.1, Section 9, Section 12, the claim-status ledger, and provenance are conformed to that record. No new college basketball analysis, tennis population run, or additional substrate holdout is reported in v0.9.5. The soccer work does not multiply the number of cross-sport substrates or convert later-period and measurement-system repetitions into independent Grade A confirmations.

14 Provenance, reproducibility, and availability

14.1 Evidence sources for this revision

[R0] Castranova, J. (2026). *Entropy to the Mean*, v0.9.4. The supplied 30-page preprint is the immediate manuscript authority for carried-forward population counts, basketball results, alternative-explanation tests, holdout results, governance disclosures, and historical artifact identifiers.

[R1] `r1_reconstruction_result_and_band_null_defect_20260905.md`. Reconstruction and parity report, including the corrected 12-cell band decomposition. The report originally submitted the correction for adoption. [R2] subsequently identifies the compliant result as its band authority.

[R2] `deep_band_channel_finding_PUBLICATION_DRAFT_v3_20260905.md`. Adopted publication draft with corrected margin figures and the S1 common-support channel table. It identifies `item4_band_decomposition_R1_ALLGAMES_v7_COMPLIANT_RESULT.json`, hash prefix `f1141833`, and `s1_v1_4_RESULT.json`, hash prefix `c38df9c0`. Prefixes are reproduced as prefixes, not expanded into invented full hashes.

[R3] `scoreboard_decomposition_R1_DISCOVERY_RESULT.json` and `scoreboard_decomposition_R1_DISCOVERY_20260905.md`. Discovery-only, 500-replicate exploratory output. The component labels and reference interpretation in the prose memo are qualified and corrected in Sections 5.9 and 5.10 using the supplied numerical output and code.

[R4] `scoreboard_decomposition_R1.py` and `assemble_score.py`. Supplied instrument and result assembler. The point-accounting recalculation does not regenerate the simulations. The joint replicate arrays bundled with v0.9.4 permit uncertainty calculations for derived linear combinations but do not reconcile the box-score and rating-based reference constructions.

[R5] Local Replication of EPL compression findings.md, the v0.4 freeze and v0.5 execution history preserved in `Soccer_RDT_findings.md`, and the prior soccer adjudication. These supply the prospective three-channel EPL result and its league-clock definition.

[R6] `tennis_score_thirds_lifecycle_null_memorial_v1_0.md` and `v0_7_section_5_tennis_frozen.md`. These supply the exact tennis confirmation, population, missingness handling, and interpretation limits.

[R7] `rdt_substrate_evidence_ledger_v0_6_frozen.md` and `v0_7_section_7_non_confirming_frozen.md`, with newer dispositions retained from [R0]. These support the historical grading and non-confirmation notes, not superseded basketball coefficients.

[R8] `cross_league_soccer_morphology_atlas_v1_3_CONFIRMATION_INTERPRETATION_20260908.md`, final SHA-256 `9b9d45ebeebe877fcce07c7d437b731aa3246765a5cea8043f4bcd752141e5ab`. This is the final continental confirmation interpretation. It records the temporal replication, the failure of opponent finishing residual as a conserved carrier, the revised claim register, and the distinction between higher-order recurrence

and sub-scoreboard coefficient plasticity.

[R9] epl_understat_atlas_v1_3_INTERPRETATION_20260908.md, final SHA-256 50881bf90af6a2a03295005877756460863af9a4172fd7dc057c4bb3959eb0df. This is the final EPL Understat interpretation. It records the measurement-system overlap bridge, later-period EPL window, ten-cell directional tally, collapsed-shape result, and post-EPL claim register.

14.2 File identity and execution scope

The following full SHA-256 values were checked against the supplied files for this revision. Long identifiers are set separately so that every character remains readable.

Supplied v0.9.4 PDF	b653df2ccb651424a10fa5f53e1fbef78b11cf08f23f982fb7fe10a6c07109be
Continental confirmation interpretation	9b9d45eb9e877fcce07c7d437b731aa3246765a5cea8043f4bcd752141e5ab
EPL Understat interpretation	50881bf90af6a2a03295005877756460863af9a4172fd7dc057c4bb3959eb0df
Exploratory scoreboard result JSON	1fb57bf29b254b2f0bfafeb52072dbf998f6c87a7088f38445cc91585df95aff
Exploratory scoreboard instrument	8c614b9518432591ac88f67821d257235a64a95e76ca34f1592dcb86dcb3da86
Scoreboard result assembler	5155fdb4c898082de5ae6c1745e08b9ff8b11dacab4cd269a765cc5bc2ac275

The soccer raw-result hashes cited inside [R8] and [R9] are transcribed from those documents’ provenance sections. The two interpretation files themselves were rehashed for this revision. The underlying Understat archives, drivers, and JSON result files were not independently re-executed as part of manuscript assembly.

The original 500-draw basketball arrays, source frames, and cached simulation objects were not regenerated for this manuscript revision. Reported parity results are attributed to [R1], not represented as a new independent replication. The source paper’s older artifact hashes remain in Technical Note C for reconstruction history.

The scoreboard result JSON’s meta string described its corpus as 2017-18 through 2024-25. Direct inspection of the built frame (cached object `A_score.pkl`) confirms the actual corpus is the eight-season discovery frame: 2016-17, 2017-18, 2018-19, 2019-20, 2021-22, 2022-23, 2023-24, and 2024-25, with 2020-21 excluded for COVID irregularity, matching the paper’s Section 3 population definition. The JSON meta string is corrected in the release-bundled artifact; the numerical result is unaffected. The scoring table is identified by its actual result file and the 87,962-row common-support frame.

14.3 Mechanical repair and analytical revision

A mechanical repair fixes a demonstrable data or wiring defect and retains a documented relationship to the earlier construction. The initial v7 data repairs were pre-result under their recorded rule. The R1 band-null correction is a post-result mechanical repair discovered through reproduction, not a pre-result repair retroactively asserted.

A result-responsive change to the hypothesis, estimator, or pass criterion is different and cannot be represented as the original prospective test. The paper preserves failed and unevaluable dispositions accordingly. The soccer atlas revisions in [R8] and [R9] are interpretation revisions responding to fresh results: they revise subsidiary carrier claims without changing the previously executed estimators or pass rules.

14.4 Limitations and availability

The unresolved exclusions, historical source disagreements, and rating-coverage gaps are enumerated in the underlying artifacts. The full 36-channel basketball output and source datasets do not accompany this review manuscript. The present basketball tables reproduce the specified reported outputs and add a limited arithmetic recalculation.

The release artifact bundle includes the compliant band result, the S1 result, the full frame manifest, and the joint scoring replicate arrays (`score_reps_a.pkl` and `score_reps_b.pkl`, 500 replicates total, verified to reproduce every reported coefficient in the exploratory scoring result to floating-point precision). Those artifacts allow a reader to verify the corrected disjoint decomposition, compute tail counts for derived linear combinations, and re-execute the exploratory scoring instrument against the same frame. The bundle is not a substitute for external independent replication.

The v0.9.5 revision packet additionally identifies the final soccer interpretation artifacts [R8] and [R9]. Their provenance sections contain the governing raw-result and driver hashes. This manuscript revision does not redistribute the Understat source archive or represent the interpretation files as an independent re-analysis of those raw data.

14.5 Disclosures

The paper is not a betting model and uses no market data in its empirical results. No thermodynamic identity or causal mechanism is established. The strongest within-episode identification claim remains gated by Section 11.1.

The author reports no external funding, affiliation with a rating provider, or wagering position in a market related to the analyzed substrates. The author is not a statistician by training. Methodological review has been internal and adversarial, including multiple AI systems, not a substitute for independent peer review. Correspondence and artifact requests: jcastra@gmail.com.

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Technical notes

A. Data repairs, band correction, and retained history

Institutional identity. The historical membership population omitted 81 D-I team-seasons associated with names, transitions, or cross-source identity differences. The bounded identity repair resolved those and four current-season cases, giving 2,855 team-seasons in the crosswalk.

Stat-block attribution. Event-summary stat blocks were reversed relative to competitor order across 49,005 events. Positional attachment mixed focal scores with opponent statistics. The points identity reconciled on 3 of 96,888 team-games by index and on 96,811 by team name. The repair changed attribution rather than selecting favorable outcomes. The original 145 synthetic checks missed it because they generated matching orders. This defect invalidated channel coefficients independently of the absent-channel-floor inference that underlay the formal Claim 13 retraction.

Schedule recovery. Twenty independently verified missing events entered the clock as transition-only records, producing 30 rows and changing 33 stored depth cells, all by +1, across 20 team-seasons. Six one-source

games remained unresolved. A fuzzy matching predecessor generated 429-595 spurious mismatches and was superseded by exact identity handling.

Rating aliases. Exact aliases repaired 775 games and made 744 newly eligible for the three-ruler stage. Stage A increased from 86,694 to 88,182 rows, with 1,488 added and none removed. A further 125 games lacked a third-ruler value and remained excluded. Eighteen source-score disagreements were retained under the primary-source rule and enumerated.

Clock completeness. The census identified 2,423 completed games missing from the former analytical-sample clock. The matched v4 population had 42,253 contests. The repaired D-I/D-I authority has 44,676. The v7 clock has 93,204 rows, distinct from the 89,352-row D-I/D-I panel and the 88,182-row Stage A subset.

September 5 band-replicate defect. The separate band replicate had not applied the fixed-event outcome override. Setting those simulated margins to zero reproduced all 192 filed adjudicative-layer cells exactly. Zero is not a win, so every such event terminated the simulated streak. The compliant override retains each non-D-I realized outcome, as the frozen rule required. Channel-floor outputs reproduced exactly with the correct override and were unaffected. The pooled engine was separate and its signed excesses were unaffected. [R1]

Corrected 9+ numbers. Realized-margin excess changes from -0.8433, tail 11, to -0.7419, tail 17. Expected-margin excess changes from +0.9344 to +1.0025. Residual excess changes from -1.7777 to -1.7444 and remains at zero of 500. The old split-tail and 2025-26 band outputs are not carried forward as corrected results without their own compliant reproduction.

Version lineage. v0.9 rebuilt v0.8 under the all-games clock. v0.9.1 repaired provenance, claim-history, population-hierarchy, and identification disclosures. v0.9.2 repaired publication and availability descriptions. v0.9.3 added the CC BY 4.0 grant without analytical changes. v0.9.4 integrated the September 5 basketball findings and corrections while retaining the still-open limits. v0.9.5 integrates the completed September 8 soccer atlas and its negative carrier confirmation without changing the v0.9.4 basketball results.

B. Formal retractions, withdrawals, and other dispositions

Pace slowdown. v0.6 reported -0.07979, t -5.8. A later dedicated instrument on 50,397 contests returned +0.004548 possessions per combined entering win, SE 0.008235, t +0.552, 95% interval [-0.0116, +0.0207]. Its documented validation returned three false detections in 500 and full recovery of a planted -0.05 linear slowdown. The pre-specified historical linear claim was retracted. It ran on the older matched clock and does not evaluate every possible nonlinear tempo response.

Broad raw-channel claim. The v0.8 claim that thirteen of eighteen channels broadly deteriorated was not tested against channel-specific floors. Most movement was mechanical under the subsequent references. Its coefficients were also invalid under the attribution defect. The narrower ten-channel result is not a revival of that claim.

Independent-channel probability. The 2025-26 result memo's joint probability for ten concordant signs was withdrawn because the channels are dependent. That withdrawal belongs to the confirmation memo, not to the original v0.8 channel claim.

S1 intersection rule. Seven favorable deep-channel cells reached the individual 25-of-500 threshold, short of the specified nine-of-ten requirement. The rule returned not confirmed. A later power analysis does not reverse that verdict. The descriptive point estimates remain reportable with their selection history.

Ratings archive and validator. The defective 2025-26 file repeated season-final ratings across 23 weekly

dates. Its within-team variation and first-versus-last change rates were both zero, against 100% in all eight genuine discovery archives. Its median within-team standard deviation was zero, versus 1.766-1.987 in discovery and 2.038 in the replacement. Median absolute rating error was 3.72, maximum 18.66. Replacement reduced auxiliary R-squared from 0.5611 to 0.4774. A data-through field was constant in genuine files too and could not validly serve as a rejection gate. The prospective validator was revised before 2026-27 data existed.

Composition instruments. FW2 recovered 74 of 500 planted worlds against 416 required. FW3 recovered 371 of 500 at the frozen -0.10 effect. Both hard-stopped before an authorized confirmatory real-data verdict. A downstream exploratory coefficient of -0.25875 with p_{lower} approximately 0.005 is retained as a discovery-only historical result and is not used as support for the strongest identification claim under Amendment R1.

NHL. The holdout slope was -0.002335 with 154 of 400 exceedances, corrected empirical p 0.386534, against a rule requiring zero. The result was not confirmed. Its opener history includes an unauthorized preview followed by a byte-identical governed reproduction. The tied-state carrier had been selected after another fixture failed. A secondary migration test lacked sufficient deep observations and was not evaluable.

NFL and CFB. NFL's YAC-per-reception candidate recovered 172 of 500 planted worlds against 416 required. CFB's defensive carrier emerged from a 42-channel scan after the predesignated tier returned null and recovered 292 of 500 at its power gate. Reserved real holdouts were not opened. Neither feasibility failure is a real-data confirmation or a measured absence of the candidate effect.

MLB. The historical record includes construction failures and a failed team-offense primary with an outcome-discovered HR/PA anomaly. The later v0.9.3 paper additionally reports a well-powered starting-pitcher null and boundary results. This revision preserves that newer null without substituting the older feasibility label for it. It does not reopen the current MLB modality.

C. Historical artifact identifiers carried from v0.9.3

These identifiers are transcribed from the supplied paper, not claimed as freshly checked against each underlying artifact. The old band decomposition is marked superseded and is not the authority for Section 5.3.

all-games clock canon and null rule v1.0

11000442d5847f98ed1e8a52f40fa6ba15ee7e59b719bd6440648cc133e1ce87

historical identity repair v1.0

5d4127c457c406afa2dfeea1ef64eaccf1ee1a7a214e6a15f5c34b2932c1d57e

clock completeness census v2.0

1ecce05df035726ebc1ae5e9410c0fed2a3c191c2ef00695267eea8e188bdb62

recovered transition events v1.0

9e30334e08877e2c9d76fb01beeba3089610e5fc4f2dda91b3478e8035da76f1

ruler alias repair v1.0

f94285564948a631ebfcf16e52c5655f9f3cca2a498a0b695dc1e66b622b67f1

discovery panel, full authority (v7)

cfa0463b1b56473fc281270080601c41906292230ee15f28637ea6864789c884

discovery panel, Stage A (v7)

edd9458714427210b7b3355c1d5dcde05b2447e8651cfc18a2b338b4f32d74a

Item 1 recertification v7.0

12bd4f34feb9481478c7b08431ab2a192421082ca992efa4255bbc9cdb9a5129

band decomposition, all-games v7 (SUPERSEDED)

5e5845cae26d72a3b42b47195da5b9bb4969f6512e21f2931f581d775d424820

channel floors v7, focal

62c5d8fc960bb3ae0f3397423a805df2ae4692ab09399b25dbf9607bcba5cc8d

channel floors v7, opponent

0215bb481d6467be5aaa9bf16cb56417cd113886e716a5369e77eebd1d380938

horse race v7.0

877255add475a7040f350b4904ba64de0bf26289325574daeeecf9f8352541e6

falsification battery v7.0

328c5c038d131f0fba124bec6909dd09aabf1f264280fd41e44e32a1f2a4336b

entry stratification v7.0

fd424e7f55ea41b45e55ada752f81cd2ac6bb3a690a7330b06123178ac1654da

2025-26 membership and identity v1.1

239b3e2578a91bfe6ce3e45330eed083e1a6e7ab9f2533ddf8902fcc533dae50

2025-26 schedule reconciliation v1.0

5b64ff02b34cea7660422f3f2ab434884e13aa73d029593f202b068d342c964d

2025-26 all-games clock v1.1

7f760e4ccf67e3192715212f8ca6892976b9220760897b340f088feb51a85070

confirmation specification v1.2

eca03b06bdc3c057905ba9bf96718f068b86b5b7e9d37ad61d8d915e4e052edc

confirmation amendments A1, A2

7cc1f2c024a1c9c2f85e84b00c8d4eb32929327ef27f07e8bdd68b5cb2982b4

2026-27 preregistration (markdown)

4b2f1d3c7b1dbd0afc563b8bbfddc8b916597d67b2084e101b0e5a6a200927e90

2026-27 preregistration (JSON)

9b49ed036fb773c0df3acaaa0bb0948238ab2540a6be63d2081da3beb3c5c592

release governance amendment R1

e51767c5338ac5e3918c57dff0917f0b575a22bc6f05ade935a41dfc45c4c38d

tempo instrument (retraction 1)

773ed2ab87723e1e5698cb6d8e00abd176c18b573f351f9eedbc4c3387039690

stat-block attribution defect

0fe79c8d5d7aeb2f2b392a5e60cff6891c0f1651b6ef2ee0fd9087b04b8d64ae

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Gilovich, T., Vallone, R., & Tversky, A. (1985). The hot hand in basketball: On the misperception of random sequences. *Cognitive Psychology*, 17(3), 295-314.

Miller, J. B., & Sanjurjo, A. (2018). Surprised by the hot hand fallacy? A truth in the law of small numbers. *Econometrica*, 86(6), 2019-2047.

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The research literature supplies context and methodology, not evidence for the program’s empirical result. Program-source references [R0-R9] are specified in Section 14.1.