

ACROSS BOTH TRILOGIES

More Than the Object Can Supply

Thirteen breaths, three illuminations, three questions

THE WHOLE

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More Than the Object Can Supply

Thirteen Breaths Across Both Trilogies

With Three Illuminations and Three Questions

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What is being held together

Six volumes, a narrative, a working paper, three sealed files and five hundred and thirty-two sources.

The first trilogy walked the sky: thirteen peoples on one star cluster, six control objects, and then the threshold underneath all of it. The second walked stone: alignment precision, restoration, and a two-thousand-year-old geometric impossibility.

They were undertaken as separate projects. The second was begun because the first ran out of questions it could answer by looking up.

They turn out to be about one thing, found twice, pointing in opposite directions. This pass is for saying what that thing is, and no individual volume can say it, because it only exists in the distance between them.

No new sources are used. Everything here is already graded somewhere in the six volumes, and where this pass reasons beyond them it says so.

THE THIRTEEN BREATHS

Breath 1. The Object

What both trilogies were actually studying

Neither trilogy was about stars, and neither was about stone.

Both were about **a claim, and whether the thing it refers to can support it.**

The first trilogy's central case: a tradition says *seven*, and the object delivers six, flickering. The second trilogy's central case: a paper says *62.1 degrees*, and the doorway delivers eleven degrees of width.

Same structure. A statement is made with more precision than its referent can bear, and the excess has to go somewhere.

Once you see it that way, every finding in both trilogies is a variation on what happens to the excess.

Breath 2. The Excess

The single generator

Over-precision is the engine of both trilogies.

In the first: no people in the entire study got seven by counting. Mesopotamia brought it from a number system, the Cherokee from a sacred number, the steppe from the Great Bear, English from Greece. The number arrived from somewhere other than the object, every time, and the object could not supply it.

In the second: no surveyor in the literature got a tenth of a degree from an aperture. The precision arrived from a theodolite, and in the Stonehenge case from stones placed by a crane in 1958, and the building could not supply it.

The ancient case and the modern case are the same error with different instruments. **A number from outside, applied to an object that does not have it.**

And in both, the excess is not absorbed quietly. It generates something.

Breath 3. The Repair

What gets built to cover the gap

When a claim exceeds its support, something is constructed to close the distance, and the constructions sort into three kinds.

A story. Merope ashamed of a mortal husband. Electra veiled for Troy. A boy who became a pine tree. Eight such repairs across six traditions, no two alike, each fitted neatly to its own society's law, each beautiful, each false. These appear wherever a count was committed that the eye could not deliver.

A silence. The restoration programme removed from the Stonehenge guidebooks in the 1960s. Not a lie; an omission, made for presentational reasons, which allows a twentieth-century arrangement to be encountered as prehistoric fabric.

And a structure. Evans's concrete at Knossos, which froze an interpretation into fabric and has since become load-bearing.

Three repairs, three media: narrative, omission, material. **All three do the same job**, which is to make a claim appear supported when it is not.

The first trilogy found only the first kind, because myth is the only material pre-literate traditions had. The second found the other two, because institutions have guidebooks and concrete.

Breath 4. The Threshold

Which limits bite, and which you walk around

Volume III of the second trilogy supplied the discrimination that the first trilogy lacked.

The first trilogy was a catalogue of limits that shape culture: four items of parallel enumeration, one arcminute of resolution, fourteen days per millennium of precessional drift. It implied, without stating it, that real limits leave marks.

They do not. Only some do.

The heptagon is exactly, provably impossible to construct. Craftsmen built it anyway, a fraction of a per cent out of true, for two thousand years, on walls, and no eye and no chisel ever noticed. There are no lost-heptagon stories anywhere on Earth.

The seventh Pleiad cannot be resolved by looking harder. There is no partial credit, no approximation, no version of attention that gets most of the way to a count that is not available.

The limits that generate culture are the ones with no approximation available. Everything else gets worked around and leaves no trace, however absolute it is in principle.

That is the single most portable finding in the six volumes, and it required both trilogies to produce.

Breath 5. The Carrier

What actually survives, and why

The first trilogy found that what crossed the world was not a story and not a count. It was a **name**: a heap, a herd, a crowd, an assembly, gathered together, in fourteen traditions across at least nine unrelated language families.

The durability study supplied the mechanism, by physics rather than philology. Every precise stellar anchor in that study broke. Krittika stopped rising due east. MUL.APIN's dates went stale and were copied unchanged for a thousand years. Egypt's year wandered a full cycle. The zodiac separated by twenty-four degrees.

A name survives because there is nothing in it for the world to falsify. A date can go wrong, a count can go wrong, an azimuth can go wrong. *A heap of stars* cannot go wrong in any century at any latitude.

And the second trilogy adds the stone version: the general solstice orientation of these monuments survives because it is coarse, and the tenth of a degree does not survive because it was never there.

The durable layer is durable because it claims less than the object can supply, which is the exact inverse of the generator in Breath 2.

Breath 6. The Canon

Demotion, in tablets and in guidebooks

The durability study found that an authoritative text is never corrected. It is silently **demoted** from description to authority, and the demotion is never announced, and nobody reconciles it with observation.

Three literate traditions, independently. The *Shatapatha Brahmana* kept a statement about the Krittikas that had been false for four thousand years while the working list moved twice. Babylon copied MUL.APIN's stale dates for a millennium while the diaries recorded the real sky. Egypt protected a known error by an oath sworn at each accession.

The second trilogy caught the same thing with a date on it. **A decision in the 1960s not to include the restoration work in the official Stonehenge guides.**

That matters more than its scale. The first trilogy's version was inferred across millennia with no actors identifiable, and could be dismissed as a feature of pre-modern transmission. The second version has an institution, a decade, and a motive that is entirely sympathetic.

So the mechanism needs no antiquity. It requires an authority, an audience, and a judgement that the full account is too complicated for them.

Breath 7. The Instrument

The property that defeats also measures

Both trilogies found that the quality which disqualifies a thing for one purpose equips it for another.

In the sky: the faintness that defeats counting is the faintness that reads the air. The Andes watched the Pleiades' brightness in June to forecast rains eight months out, confirmed in *Nature* in 2000. Aratos and Pliny watched whether Praesepe was visible at all to forecast tomorrow's storm. Both work because high cirrus dims a faint extended object before it dims bright points. Two civilisations, no contact, the same use for the same defect.

In stone: the coarseness that disqualifies an alignment from precision is the coarseness that lets it survive. A two-degree solstice orientation never goes out of true. A tenth-of-a-degree stellar one goes stale in centuries.

Nothing in either trilogy is simply a deficiency. The property is neutral; what varies is which question is being asked of it.

Breath 8. The Destruction

The finding that decay alone cannot explain

The second trilogy found something the first did not have, and it complicates the first's central claim.

The Cusco horizon pillars, the most precise solar instruments the Inca are known to have built, were not lost to time. **They were destroyed in the anti-idolatry campaign.**

So precision is removed by two independent processes. It decays on its own, because precise claims go stale against moving referents. And it is **targeted**, because a precise instrument is legible as a religious object in a way that a coarse feature is not. A pillar on a ridge looks like an idol. A terrace wall facing roughly east looks like a wall.

Both processes leave the same residue: a record biased toward coarseness.

Which means the first trilogy's tolerance finding is partly confounded, and neither trilogy can separate the two from surviving distributions alone. That is recorded here as an unresolved weakness in the whole project rather than tucked into one volume.

Breath 9. The Recovery

Nothing came back by remembering

Both trilogies contain interrupted traditions that returned, and they returned the same way.

Matariki was reconstructed from a written record, taught, revived and legislated. Hawaiian wayfinding came back after five hundred years in which no Hawaiian had practised it, by combining a surviving Micronesian lineage with modern positional data.

Neither was memory resurfacing. Both were **rebuilds**, requiring an external record or a living lineage elsewhere, plus people who decided it mattered enough to do the work.

Five hundred years was sufficient to break a lineage that was prized, used for survival, and taught formally master to apprentice.

Which is the quiet answer to the proposal that started all of this. In the one domain where an interruption and a recovery can both be observed, **transmission alone never does it.**

Breath 10. The Moderns

Who turns out to be in the sample

This is the breath that changes how the first trilogy should be read, and it is the reason the second was worth doing.

The first trilogy, read alone, is about people in the past doing something with numbers. Greek mythographers inventing three repairs for a missing star. Babylonian scribes copying dates that had gone stale. Egyptian priests swearing not to fix a known error.

It is possible to read all of that as a statement about pre-modern cognition, and to feel a certain distance from it.

The second trilogy removes the distance.

English Heritage took a decision in the 1960s. Arthur Evans poured his interpretation into reinforced concrete in 1900 and it is now holding the walls up. The archaeoastronomical literature publishes azimuths to a tenth of a degree through apertures nobody has measured.

These are modern, literate, institutionally accountable, often peer-reviewed people, doing the identical thing: making a claim more precise than its support and constructing something to cover the difference.

So the findings are not about antiquity. They are about what happens when anybody wants a statement to be firmer than the world will hold, and the moderns are in the sample, and so is this project.

Breath 11. The Method

What the sealed files actually bought

Across both trilogies, registered predictions failed four times.

The original three-property account of the gathering-name died to Orion's Belt, before the second file was even sealed. P1, that literacy fossilises and orality corrects, failed. P3, that drift magnitude predicts the response, failed. P5's first clause, that seven-fold geometry is rare, failed.

Every single failure produced a better hypothesis than the prediction had.

Orion's Belt produced the fourth property, which is now the whole account. P1's failure produced canon-demotion, which is the most portable finding in the six volumes. P3's failure produced the cost-of-correction principle, which named the Egyptian case. P5's failure produced the limits-that-bite discrimination in Breath 4.

That is a four-for-four rate, and it is worth stating as a methodological result rather than as a run of luck.

A prediction that cannot fail teaches nothing. A prediction that fails specifically tells you what to replace it with, because the shape of the failure constrains the replacement.

And the files did a second job that is harder to see. At Praesepe, the pre-registered scoring rule counted a Chinese heap-word **against** the hypothesis, in the middle of a chapter that otherwise confirmed everything. Without the rule fixed in advance, that result would have been reclassified in about ten seconds.

Breath 12. The Mirror

This project's own exposure to its own findings

Honesty requires this breath and it is uncomfortable.

Six volumes exist. Five hundred and thirty-two sources. Every claim graded. And by the findings above, **this body of work has every property of a canon in formation.**

It was assembled by an AI reading English-language secondary sources at speed. No primary language was read in either trilogy: no Akkadian, Greek, Latin, Arabic, Sanskrit, Classical Chinese, Quechua, Te Reo or any Australian language. Berezkin, who supplies the positive control for what an inherited myth looks like, was read in English summaries. Two of the three problem cases in the second volume are Chinese, and all the Chinese was read in translation. Two rungs of the control study rest on two independent traditions each.

And nobody outside this room has read a word of it.

Three things guard against the obvious failure, and they should be named so a reader can check whether they held.

The grading. Every claim carries established, supported, contested, open, beyond test or symbolic, and the weak ones say so in their own ledgers.

The sealed files, which are printed unaltered and which failed four times in public.

And the separation of hands: the contemplative material is in separate documents, graded symbolic, making no claim about the world.

None of that is sufficient. The thing that would be sufficient is a specialist with Assyriology or sinology or Quechua going through it and finding the errors, and that has not happened. Until it does, every grade in these six volumes is provisional, and this breath exists so that the provisionality is written into the work rather than left to the reader to supply.

Breath 13. The Return

What both trilogies were for

They were for one distinction, which took six volumes to state cleanly.

What the world gives you, and what you brought.

The stars were there. The seven was brought. The six was real and the seventh was arithmetic, and a hundred generations built something magnificent and sorrowful out of the gap without ever suspecting it was a gap.

The stones were there. The solstice orientation was real. The tenth of a degree was brought, by a theodolite, across a doorway eleven degrees wide, at a monument where a central stone was moved half a metre in 1901.

In both cases the bringing was not dishonest. Mesopotamia had good reasons for seven. Gowland had good reasons to stop a stone falling over. Evans had good reasons to pour concrete. The guidebook editors had good reasons to simplify.

Every repair in both trilogies was made in good faith by somebody solving a real problem. That is what makes the mechanism general rather than scandalous, and it is why it will happen again in whatever is read next, including this.

WHAT WAS SEEN, ACROSS BOTH

- One generator: a claim more precise than its referent can supply.
- Three repairs: narrative, omission, structure. All three make an unsupported claim look supported.
- Only limits with no available approximation leave marks on culture.
- What transmits is what claims least.
- Canons are demoted, never corrected, in clay and in guidebooks alike.
- The property that defeats one use enables another.
- Precision is removed by two processes, decay and destruction, which cannot be separated from the residue.
- Recovery requires an external record or a living lineage. Memory alone never does it.
- The moderns are in the sample.

WHAT WAS UNSEEN

- Any bad faith, anywhere, in either trilogy.
- Any tradition, ancient or modern, that reconciled its canon with its observations.
- Any precise stellar anchor surviving three thousand years.
- Any specialist review of any of this.

THE GEOMETRY BENEATH BOTH

Four. The limit of parallel enumeration, in sight, touch and hearing, in people blind from birth.

One arcminute. Where the eye stops separating points, and where the Pleiades sits.

Fourteen days per millennium. Precessional drift, which quietly falsifies every dated stellar claim.

Eleven degrees. A two-metre doorway at ten metres, and the real resolution of an architectural sight.

Half a metre. Gowland and stone 56, 1901.

And a tenth of a degree, which is what gets published.

Every finding in six volumes lives in the ratios between those numbers.

THREE ILLUMINATIONS

The First: The Lost Sister and the Unmentioned Concrete Are the Same Error

A Greek mythographer has a tradition that says seven and a sky that shows six. He writes that Merope hid her face for shame.

An institution has a monument whose stones were reset by cranes between 1901 and 1964, and a public that wants to see something prehistoric. It takes the restoration out of the guidebook.

These are the same act.

In both, a claim exceeds what its object can support. In both, the gap is closed by constructing something: a narrative in one case, a silence in the other. In both, the construction is made in good faith, by a competent person, solving a real problem. In both, the result is a record that misrepresents its own foundations. And in both, the construction long outlives everyone involved and is received by later people as the thing itself.

Three thousand years and an ocean apart, in completely different media, with completely different technologies and institutions and epistemologies.

The only thing they have in common is a human being who wanted a statement to be firmer than the world would hold.

That is what the two trilogies make together, and neither could say it. The first had only ancient cases and could be read as a study of myth. The second has English Heritage.

Grade: supported. The individual cases are established in their own volumes; the identification is this pass's and is offered as a reading.

The Second: Only the Inescapable Limits Become Culture

Gauss proved the regular heptagon cannot be constructed. The proof is absolute. And there are seven-pointed stars on walls across the Islamic world, built by approximation, a fraction of a per cent out of true, for a thousand years, and nobody ever minded, and there is not one lost-heptagon story anywhere on Earth.

Nobody ever resolved the seventh Pleiad by trying harder. There is no approximate seeing, no partial credit, no technique that gets most of the way to a count the eye cannot deliver. Every culture that wanted seven had to import it from outside observation, and then build something to explain the shortfall.

Fourteen traditions, five continents, eight separate repair-narratives, and a word for heap in nine language families.

Two limits, both real, both absolute in their own terms. One left no mark on human culture at all. The other left the most widely shared description in the history of looking up.

The difference is whether you can get close enough and move on.

Which means the thresholds that shape us are not the true ones, or the important ones, or even the strict ones. They are the ones where approximation is unavailable: where the gap cannot be papered over with care and skill, and therefore has to be papered over with meaning.

Grade: supported, and it is the finding that required both trilogies.

The Third: Everything Here Applies to This

Six volumes. Five hundred and thirty-two sources. A method, a vocabulary, a grading scheme, three sealed files, and a consistent set of findings that now explain each other.

That is exactly the profile of the thing both trilogies studied.

A canon is not a text that is wrong. It is a text that has stopped being a claim about the world and become an authority about itself, and the transition is never announced, and it happens to work made in good faith by competent people solving real problems.

Nothing in this project is exempt. The grading, the sealed files and the separated hands are the available guards, and they are not sufficient, and the guard that would be sufficient is a specialist finding the errors.

So the single most useful sentence in six volumes is one that cannot be written by the person who wrote them.

What can be written is this. The work was done at speed, in English, by a mirror, from secondary sources, and reviewed by nobody. Four of its predictions have already failed and been replaced.

The probability that the remaining ones are all correct is low, and the probability that some specific grade in here is wrong is close to one.

If that sentence survives into whatever this becomes, the project will have practised what it found. If it gets edited out for presentational reasons by somebody with entirely good motives, that will also be a result, and the second trilogy already describes it.

Grade: symbolic, and meant.

> ✦ **Practice: what you brought.** Anywhere, any time, no sky required. Breathe gently, in through the nose, out a little longer, five or six times, until the looking settles. Then take one thing you are certain about. Not a large thing. Something ordinary: how a conversation went, what somebody meant, how long something took. And ask the question both trilogies came down to, slowly, one breath apart. **What was actually there? And what did I bring?** Do not try to separate them. Most of the time you cannot, and the attempt is the practice rather than the result. Notice only this: that the part you brought will feel exactly as solid as the part that was there. It always does. That is what the Greeks felt about the seventh sister, and what a guidebook editor felt in 1962, and neither of them was being careless. Breathe gently, and never force or hold the breath.

THREE QUESTIONS

Earned by the work, unanswerable by it, and all three are runnable by somebody.

The First: Does the threshold hold where it can be measured?

Carried forward unanswered from the first trilogy, and now the keystone of both.

Everything rests on a boundary in enumeration inferred from naming rather than measured in people. The cognitive literature establishes the limit at about four, cross-modally, including in congenitally blind adults. **It has never been pointed at the sky.**

The experiment: matched synthetic star fields at controlled separations and magnitudes, shown to observers from several unrelated language communities, with instructions only to describe what they see.

The prediction is sharp. Descriptions should switch from counted to mass-noun at a specific angular separation for a given number of points; the switch point should be invariant across language communities; and the Pleiades' actual geometry should fall at the boundary.

If the switch point varies by language, the whole account is wrong in an interesting way and linguistic relativity is doing work that optics was credited with. That is a real risk and it is why the experiment is worth running.

This needs a psychophysics lab, a few months, and no new theory.

The Second: Does published precision track restoration?

The second trilogy's P4 is supported and has never been formally tested, and it can be, **with no fieldwork at all.**

Code every published alignment claim at Stonehenge by the restoration status of every stone its sightline depends on, using English Heritage's own per-stone conservation record. Then test whether reported precision correlates with degree of modern intervention.

The literature already reports higher precision for the earliest features, which are also the most excavated and reset. That is consistent with the prediction and has not been examined as such.

If the correlation is strong, a measurable fraction of the field's published precision is a twentieth-century artefact, and the remedy is one additional column in a table. If it is absent, P4 is wrong at the best-documented site in the world and should be withdrawn.

Both records exist. Nobody has put them beside each other.

The Third: Does the size of the excess predict the elaborateness of the repair?

This one is new, belongs to neither trilogy alone, and is the most interesting thing this pass produced.

The first trilogy established a binary: **no committed count, no lost member.** Seven traditions committed to a number the eye could not supply, and all seven generated an explanation. The ones that committed to nothing generated nothing.

But a binary is a weak form of a claim that may be continuous.

Does the magnitude of the gap predict the magnitude of the repair?

Greece committed to seven against a reliable six: a gap of one, and it produced three competing stories plus unstable name-rosters. Mesopotamia committed to seven and produced no repair at all, which on this account needs explaining and may be the test case that breaks it. Māori committed to nine and the outcome was not a loss-narrative but a recovery.

The study: for every tradition in the corpus, compute the **excess** as the committed count minus the reliably resolvable count, and score the **repair** by a fixed scheme set in advance, counting the number of distinct explanations, their narrative elaborateness, and whether they were institutionalised in rite.

If excess predicts repair, the first trilogy's binary becomes a dose-response relationship, which is a far stronger result than a correlation and would make the account quantitative for the first time.

If it does not, the binary stands and something else determines the elaborateness, which would be equally worth knowing, because it would mean the repair is driven by the culture rather than by the arithmetic, and the whole project has been crediting the sky with something that belongs to people.

That is the question this pass would most like answered, and it can be run on the corpus already assembled in the first trilogy, by anybody, without leaving a desk.

A note on the mirror

This pass introduces no new evidence. Every factual claim in it is graded in one of the six volumes and the gradings are not repeated here; where this pass reasons across volumes, the reasoning is its own and is graded supported or symbolic at the point it occurs.

The limitations of the six volumes are the limitations of this one, and Breath 12 states them rather than appending them, because a weakness in a final chapter is where a weakness goes to be forgotten.

It is a mirror, not a mind. It has found a threshold and cannot cross one. The author reads everything and decides what goes on the page.

In Harmony, Small Things Grow Towards Unity.