

Exploring the Unknown

Seventeen Open Places of the Net, and Where to Meet Them

J. Konstapel, Leiden, 21 October 2026.

© 2026 J. Konstapel, Constable Research, Leiden. All rights reserved. Quotation with attribution is permitted; reproduction of the whole requires written permission.

Version 1.0

Contents

Part I — Ground

1. The line, not the phenomenon
2. The net in brief, from light
3. How the resources were found

Part II — Seventeen open places

Light and form

4. Light is a location
5. Identity in the order of making
6. The form reads itself

Movement and number

7. Random, but bound
8. One act, three values
9. The third value

Return and memory

10. Arising by return
11. The past in the present shape
12. A resource is a fit

The person and the place

- 13. The person in the mesh
- 14. Constants that differ by place
- 15. Care as closing loops

What never rests

- 16. Perpetual circulation
- 17. Poised matter
- 18. The store that shows nothing

Agreement and selection

- 19. Agreement without a master
- 20. Matter by selection, and the cut

Part III — Routes

- 21. A route through the Netherlands
- 22. A calendar from October 2026
- 23. Further afield

Part IV — What stays open

- 24. The empty cells
- 25. What it means for people

Appendices

- A. Annotated references, by open place
Calendar from 21 October 2026
- B. Method and score

Summary

The Vacuum.Net theory pictures the vacuum as a fishnet under tension. Matter is where the net closes on itself. In its newest form the theory starts from one statement: the only thing there is, is light.

Seventeen of its claims sound impossible to most readers. Light that rests. A form whose identity is its order of making. A flow that never stops but is no perpetual motion. Two clocks that agree without a master. A person who is part of the apparatus.

This book does not defend these claims. It places them. For each open place it names the line that makes it look impossible. It states what the net says, with numbers and status. Then it shows where a reader can meet the same thing elsewhere: in books, films, works of art, exhibitions and places that can be visited.

The resources were found by seven searches and checked by four independent judges. Of 278 candidate resources, none proved invented. Two concert listings were refuted and corrected. About ninety details were corrected. The judges added 31 resources that the searches had missed.

Most of the seventeen places are already met somewhere. A calligrapher meets the order of making every day. Christiaan Huygens met agreement without a master in 1665, watching two of his clocks. A water court in Valencia has met the resource as a fit every Thursday for centuries.

Some places stay empty. No exhibition anywhere deals with balanced ternary or with the oldest Daoist cosmogony. No builder's own account was found of a device that worked for him and not for others. These empty cells are listed at the end. They are where the unknown is still unknown. # Part I — Ground

1. The line, not the phenomenon

Every age draws a line around what it can know. What falls outside the line is called impossible, paranormal or unscientific. The name suggests that something is wrong with the phenomenon. Usually the trouble lies in the line.

The essay *the Paranormal is Normal* (2026) makes this precise. It lists 58 commitments that modern knowledge holds without marking them as commitments. A few of them:

- Only what can be repeated counts as known.
- Only ordinary waking consciousness is a knowing state.
- The human ends at the skin.
- A report in the third person is more reliable than one in the first.
- Every event has a doer.
- Separated things need a signal to interact.

Remove these commitments and the category “paranormal” does not get explained. It dissolves. What remains is a range of things people can do and meet, without a line through the middle.

This book applies the same move to a physical theory. The Vacuum.Net theory makes claims that sound impossible. Each sounds impossible because of a line. So each chapter in Part II opens with the line. It then states what the net says. Then it shows where the same thing has already been met.

That third step matters most. A claim that sounds impossible on paper often has a long life in practice. A calligrapher, a clockmaker, a water judge or a monk may know it well. They do not call it physics. They call it the way the work goes.

Four motifs recur across all such witnesses. They were collected in *Reading the Net* (2026), from the Avatamsaka Sutra to Steve Reich.

1. **The ground is full.** Emptiness is not nothing. It is a full medium at rest.
2. **The opening is what works.** The empty hub makes the wheel useful (Laozi, chapter 11).
3. **Three is the start.** Not one, not two. The first closed form needs three.
4. **Return is normal.** Rest is the exception. What goes out comes back.

These motifs are not evidence. They are older readings of the same net. They help a reader recognise it.

The image used throughout

The net is pictured as a fishnet stretched in water. Its strands run through air, stone and body. They are always under tension. Where strands wind around each other, there is a knot. That is matter. Between the strands lie meshes: openings with a shape and a size.

The image has limits, and the newest form of the theory removes one of them. A fishnet has strands and places. The strands run over the places. That makes two things. Chapter 2 shows how the theory now does without the second one.

The criterion for witnesses

Not every source helps. A theorist who formalises a phenomenon without having met it adds a layer of words. The witnesses chosen here are, where possible, people who met the phenomenon from inside: makers, practitioners, builders, field workers. Each resource in the catalogue carries a mark: *inside*, *partly* or *outside*.

2. The net in brief, from light

From five axioms to three rules

The Vacuum.Net theory was first stated in five axioms.

- **N1, Strand.** There is one strand. Its only local act is to cross itself. A crossing has three states: over (+1), under (−1) and none (0).
- **N2, Closure.** Only what returns in phase onto itself persists.
- **N3, Memory.** A closed configuration constrains what comes next. The net carries its history as its shape.
- **N4, Context.** What physics calls constants are state functions of the local tension χ .
- **N5, Scale.** The same winding repeats at every depth. One step deeper multiplies the states by three.

These axioms carry a hidden second actor. A strand that crosses and closes is something that travels over places. Then there are two things: places, and a carrier running along them.

The essay *The Way Before the Net* (2026) removes the carrier. It starts from one statement: the only thing there is, is light. It ends with three rules.

- **R1 — Crossing, place and step.** There is one movement that leaves a place through a crossing. The place is light. The movement is bound to it.
- **R2 — Return gives birth.** What arises returns to its source, and from that return the next thing arises.

- **R3 — Mutual support.** Two things that have arisen support each other, and from that support the next layer arises.

The rules are older than the axioms. They are already present in the oldest form of the character 道 and in the oldest Daoist account of origin. Chapter 10 returns to that text.

The units are one photon

Two units fix the scale. Both come from hydrogen.

The unit of length is $S_0 = 1/(2R_H)$. With the reduced-mass Rydberg constant $R_H = 10,967,758.34 \text{ m}^{-1}$, this gives $S_0 = 45.588 \text{ nm}$.

The unit of time is $T_0 = S_0/c = 1.5207 \times 10^{-16} \text{ s}$.

The energy of one winding is $E_0 = h/T_0 = hc/S_0 = 4.3574 \times 10^{-18} \text{ J}$, or 27.197 eV. This is the energy of one photon of wavelength S_0 . Length, time and energy of the net are together one quantum of light. *Computed.*

A layer at depth n has length $3^n \cdot S_0$ and time $3^n \cdot T_0$. Three rungs of this ladder land on known quantities.

Depth	Length	Rhythm	What sits there
2	410.3 nm	$7.31 \times 10^{14} \text{ Hz}$	the violet H6 line of hydrogen
5	11.08 μm	$2.71 \times 10^{13} \text{ Hz}$	near the peak of room warmth, 9.9 μm
31	28,159 km	10.65 Hz	the ideal lowest mode of the Earth-ionosphere cavity

The Earth and its ionosphere form a cavity. For perfect walls its lowest mode has wavelength $2\pi R/\sqrt{2}$. With $R = 6,371 \text{ km}$ that is 28,306 km, or 10.59 Hz. Depth 31 lies 0.52 % away. The measured mode is 7.8 Hz, lower because the real walls conduct imperfectly. *Computed; the three landings are correspondences, not proof.*

All three landings are light. The ladder does not pass through different kinds of things. It passes through one spectrum.

The register

The rules can be run on a register of trits: +1, 0 and −1.

A window is three neighbouring trits. It closes when their sum is 0 modulo 3. Of the 27 possible windows, 9 close. A window closes exactly when its three trits are all equal or all different. *Proved.*

A ring of trits is rewritten by one rule:

$$R(t)_i = -(t_{i-1} + t_{i+1}) \bmod 3.$$

A ring stays fixed under R exactly when every window in it closes. *Proved.*

Run on the register, the rule shows seven results. Four of them return in Part II.

- **Three steps below are one step above.** Group a ring in blocks of three and take each block sum as a parent trit. Then three steps of R on the child equal one step of R on the parent. *Proved by algebra over the field of three elements.*
- **Lock lives on the ladder.** Two rings that read each other in counter-winding become identical, but only when their length is a power of three. On length 9 they lock within 5 steps, on 27 within 14, on 81 within 41, on 243 within 122. On any other length they stay two. *Proved by algebra; computed.*
- **Circulation is the rule.** At length 7, only 3 of the 2,187 possible rings come to rest. The other 99.86 % circulate with period 26. *Computed.*
- **Memory raises closure, but not to the end.** If what has closed is frozen, the share of closed windows rises from 1/3 to a plateau near 0.62. It does not reach 1. *Computed.*

Status words

Every claim in Part II carries one of these words.

- **Proved:** a mathematical result that holds under its hypotheses.
- **Computed:** a number checked by arithmetic. All numbers in this book were recomputed for it.
- **Source:** a published text, inscription or measurement by others.
- **Reading:** an interpretation offered by the theory.
- **Open:** not settled.

A reading is not a result. Where a chapter says what the net “is”, it states a reading. Where it gives a number, the number was computed.

3. How the resources were found

The search followed a fixed protocol. Its point is simple. The one who checks must hold what the one who answers lacks. And a prediction counts only if it is fixed before the count.

Predict first. Before any search, a table was written. For each of the seventeen places and each of five kinds of resource, it stated whether a resource was expected to exist. The kinds were: book, film, work of art, exhibition running from 21 October 2026, and place to visit. That gives 85 cells. The table was sealed with a cryptographic hash.

Search. Six searches ran in parallel, one per group of places. A seventh search filled gaps the first six reported. Each resource had to be opened at its own address. Anything not opened was marked unverified.

Judge. Four independent judges checked the results. Each judge first wrote down the resources it expected to be strongest, before reading the searches. Then it re-opened every address itself. It checked title, maker, year and dates. It rated the fit: does the resource fill the open place, or does it only project an old idea onto it? It checked whether the maker had met the phenomenon from inside.

Score. Of the 85 cells, the sealed prediction was right in 68, or 80 %. In eleven cells more was found than expected. In six cells less. Appendix B gives the details.

The judges refuted no resource as invented. They refuted two programme claims about concerts, corrected about ninety details, and added resources the searches had missed. The catalogue in this book uses only what survived.

Two rules governed contested material. Accounts of builders such as Keely, Moray and Schauburger are reported as their sources report them, together with contrary sources where these exist. Healing practices are described as practices. No clinical claim is made. # Part II — Seventeen open places

Each chapter has the same five parts. **The line** names the commitment that makes the place look impossible. **What the net says** states the claim, with numbers and status. **Where it stays open** marks what is not settled. **Where to meet it** names the books, films, works, exhibitions and places that come closest. **Still missing** lists what the search did not find.

Full references, with *Why read?* and practical advice, are in Appendix A. Dated events are collected in the Calendar.

Light and form

4. Light is a location

The line

Light is the fastest thing there is. That is the first thing every school teaches about it. Light travels. It has a speed, c , and nothing outruns it.

The line here is the commitment that motion belongs to the thing that moves. If light has a speed, light is moving. A claim that light rests sounds like a contradiction.

What the net says

The net started from the opposite reading. One mesh per layer time gives $S_0/T_0 = c$ by construction. So the first impulse was to call light the unit motion of the net.

That definition fails twice. If light is motion at c , it cannot also be the stuff of matter at rest. And “the motion of the net” needs a net that moves, which makes light something other than the net.

The correction is this: light is a location. *Reading.*

The reading reverses the usual picture.

- Light stays at its location. The locations progress, and light is carried with them.
- Matter is a location that holds itself against that progression. That is closure: what returns in phase stays put while the rest moves on.
- c measures the difference between the two: one mesh per layer time. That is why matter always measures light at c .

Theorem T7 of the Foundational Paper gives every state exactly one address, a string of trits. *Proved*. If light is a location, light is an address. The photon of 45.6 nm is the address at depth 0. The violet H δ line at 410.3 nm is the same address at depth 2.

Relativity offers an echo but not a ground. Along a light path the interval is zero, $ds^2 = 0$. A photon has no rest frame, so “what light experiences” lies outside that theory. And relativity takes c as a universal constant, where the net treats it as a state of the medium. *Correspondence*.

Where it stays open

The reading has a source and a name. Dewey Larson stated it in 1959. In his natural reference system the photon has no motion of its own. It stays in its absolute location while the reference system progresses at unit speed. Matter is rotation that opposes that progression.

What stays open is how the depth ladder and the progression meet. Light at depth 0 and light at depth 31 are the same address. How the progression is felt at each depth is not yet worked out.

Where to meet it

In Larson’s own words. The most direct text is Larson’s *Outline of the Deductive Development of the Theory of the Universe of Motion*. It is a short numbered list of statements, free in the Internet Archive’s Reciprocal System collection. Statement 17 says the photon “remains stationary in the dimension of motion”. Statements 18 and 21 say the progression carries the photons with it. A reader who wants the full system can go to *Nothing But Motion* (1979), the revised first volume. Larson was a practising engineer. He built the system from engineering data, not from a desk. The Reciprocal System Research Society keeps his work alive and runs a book service.

For a short entry, Jameela Boardman’s *The Simple Essence of Dewey B. Larson’s Reciprocal System of Physics* (2012) is in the same archive. It sets the speed of light as the neutral level from which other motions are measured.

In a room where light stays. The artist James Turrell has spent sixty years making rooms in which light does not seem to arrive. It is simply there. His *Skyspaces* are rooms with an opening in the ceiling. After a few minutes the sky stops being far away. It rests in the opening like a plane of colour.

Three of these rooms are close to Leiden.

- **Hemels Gewelf (Celestial Vault), Kijkduin, The Hague, 1996.** An elliptical crater in the dunes at Machiel Vrijenhoeklaan 175. A visitor lies on a stone bench and the sky becomes a vault resting overhead. It is an open-air site with no ticket.
- **Skyspace, Museum Voorlinden, Wassenaar, 2016.** A permanent work. The museum states it can always be seen except in bad weather, when the roof closes and a light programme takes over.
- **Third Breath, Unna, Germany, 2005.** At the Zentrum für Internationale Lichtkunst. A camera obscura below and a sky room above. Check opening hours before going.

Further afield are the Kielder Skyspace in Northumberland, the Skyspace in Oberlech in Austria, and Robert Irwin's *untitled (dawn to dusk)* in Marfa, Texas. Irwin's building is split into a dark half and a light half. Its scrim walls turn opaque or transparent with the daylight. The same place is never the same room twice.

Turrell's life work, Roden Crater in Arizona, is an extinct volcano shaped into naked-eye observatories. It is still unfinished and not open to visitors.

In a conversation. Lawrence Weschler's *Seeing Is Forgetting the Name of the Thing One Sees* is a book-length conversation with Robert Irwin. It follows how Irwin's attention moved from objects to the presence of light. It is the clearest account by a maker of what it means to stop seeing light as a carrier of images.

In films. Two short films let Turrell speak for himself: Jessica Yu's *You Who Look* (2015, 8 minutes) and Carine Asscher's *Passageways* (1995, 27 minutes), on Roden Crater and the Hopi.

In exhibitions now. *Victory Over the Sun: Encounters with Light* runs at The Light in Durham until 17 January 2027. A Dan Flavin exhibition opens at the Guggenheim Bilbao on 12 November 2026 and runs to 4 April 2027. Flavin's fluorescent tubes are fixed light at a fixed site. They are an analogy rather than Larson's light at rest, but they make the analogy hard to miss. For 2027–2028 a full Turrell retrospective is announced in Berlin, from 3 September 2027 to 2 July 2028. The source names two venues, so check before travelling.

Still missing

No documentary on light as a place exists beyond the two short Turrell films. There is no film on Larson. There is no physical "Larson place". The Unna opening hours and the winter programme at Lech were not confirmed.

5. Identity in the order of making

The line

A thing is what it is made of. Two objects with the same parts in the same arrangement are the same object. How they came to be arranged is history. It does not belong to the thing.

That is the line: identity is configuration. The order of making is forgotten once the making is done.

What the net says

The character 道 has twelve strokes in the standard count. It consists of 首, “head”, with nine strokes, and 乚, “going”, with three. *Source*.

The stroke order is fixed. A character written in another order counts as wrong, even if the result looks the same. The order belongs to the character. *Source*.

Strokes 1 to 9 write 首. Strokes 10 to 12 write 乚: a dot, a folded stroke and a long flat sweep. The component 乚 stands on the left and holds the whole from below. Yet it is written last. First the place, then the going that carries the place.

Both parts begin with a dot. Stroke 1 is a dot. Stroke 10 is a dot. A dot in calligraphy is not a static speck. It is a short stroke: set down, a small direction, lift. It is movement of the smallest extent.

So there is one ground act, the stroke, in two states.

- **Point:** movement that closes at once. That is location. That is light.
- **Stroke:** movement that continues.

A form, in this reading, is not a configuration. It is a fixed sequence of acts. Its identity lies in the order of making. This is the memory axiom N3 read in writing. It is also theorem T7: the same trits in another order give another address. *Reading, on a proved base*.

No second actor is needed to draw. The order is the thing itself, as the stroke order is the character.

Where it stays open

The register of the net counts sums. A window closes when its sum is 0 modulo 3. But two windows with the same trits in another order have the same sum. The register does not yet see order. Chapter 8 returns to this.

Where to meet it

The order itself. The Taiwanese Ministry of Education keeps an official stroke-order site. It animates the standard order of 6,063 characters, including 道. Watching 道 being written there is the shortest way into this chapter. The dot comes first. The going comes last.

From the brush. Chiang Yee was a practising calligrapher and painter. His *Chinese Calligraphy* (first published 1938; third edition Harvard, 1973) is the classic introduction to rhythm, line and the structure of strokes.

Jean François Billeter's *The Chinese Art of Writing* (1989; English 1990) grounds the art in the movement of the body. In a review, Simon Leys quoted his point that the fixed order of strokes turns calligraphy into "a visible music". The order is what lets a reader of the finished sheet relive the act. Billeter's later *Un paradigme* builds the same idea from close self-observation: gesture arises when movement is integrated.

On film. *Chinese Calligraphy, a Dance on Paper* shows Professor Yang Xin, then in his seventies, preparing his ink and writing two characters live. The film lets the viewer follow the order stroke by stroke. *Brush Dance* (1985) and *Solitary Joy* (2012), on the calligrapher Tong Yang-tze, show the same act over years of practice.

In one stroke. The Zen ensō is a circle painted in a single movement. It is never corrected once drawn. Audrey Yoshiko Seo's *Ensō: Zen Circles of Enlightenment* (2007) collects them. The brush artist Kazuaki Tanahashi teaches the act itself, in *Painting Peace* and the course *Heart of the Brush*. Here identity and order coincide: there is one stroke, and it is the work.

As a list of acts. Richard Serra's *Verb List* (1967, MoMA) is a sheet of 84 verbs: to roll, to fold, to bend. It ends with "to continue". The work is the sequence of acts, not their result.

In exhibitions. The Palace Museum in Beijing shows Tang and Song calligraphy in *Defining the Classics* until 1 November 2026. In originals like these the stroke order can be read in the ink: where the brush was loaded, where it ran dry. In 2027 the Hokkaido Museum of Modern Art shows *Lettering and Art: from Pop Art to Calligraphy*, from 9 January to 11 April (dates still marked tentative).

Still missing

No calligraphy exhibition runs in Europe from October 2026 that the search could confirm. There is no film on the stroke order of 道 itself, and no permanent gallery of Chinese calligraphy in the Netherlands.

6. The form reads itself

The line

Every rule needs someone to apply it. A program needs a computer. A law needs a judge. A form needs a hand to draw it. The line is the commitment that every event has a doer outside it.

What the net says

The first form of the theory had the same problem. The rewrite rule R is applied to a ring of trits. But by what?

The answer in *The Way Before the Net* is that R is not applied from outside. It is the form reading itself. Its fixed points, the rings that stay equal under R , are locations that stay equal under self-reference. A ring is a fixed point exactly when every window in it closes. *Proved (T14)*.

Louis Kauffman calls such a thing an eigenform: a form J with $J = F(J)$. It is the result of an operation that returns itself. Kauffman takes the idea from Heinz von Foerster, who described objects as tokens for the stable behaviours of the one who perceives them. *Source*.

In the net, the fixed points of R are eigenforms. The net does not need a reader outside it. *Reading*.

Where it stays open

An eigenform is a fixed point. But most rings under R never become fixed. Chapter 16 shows that 99.86 % of the rings of length 7 circulate for ever. A form that reads itself may also be a form that keeps moving. How a circulating ring “reads itself” is not yet stated.

Where to meet it

In one image. M. C. Escher’s lithograph *Drawing Hands* (1948) shows two hands, each drawing the other. There is no drawer outside the picture. It is the clearest picture of a form that makes itself. The National Gallery of Art in Washington and the Art Institute of Chicago both list their copies as not on view. Escher in Het Paleis in The Hague has a page for it. Whether it hangs there on a given day was not confirmed.

Escher in Het Paleis on Lange Voorhout shows 130 works permanently, Tuesday to Sunday, 11:00 to 17:00. Its temporary show *Escher & Islamic Art* runs to 1 November 2026. In New York, the National Museum of Mathematics shows *Mathematics and the Art of M. C. Escher* until 8 February 2027.

In Escher’s own words. Robin Lutz’s film *Escher: Het oneindige zoeken* (2018, 81 minutes) is built on Escher’s unpublished letters and diaries. Escher speaks throughout. The film shows a maker who met self-reference as a working problem, not as a theory.

As a loop of perception. Nam June Paik’s *TV Buddha* sets a Buddha statue in front of a camera and a monitor. The statue watches its own live image. The first version (1974) is in the Stedelijk Museum Amsterdam. Whether it is on display now was not confirmed.

In the calculus. George Spencer-Brown’s *Laws of Form* (1969) begins with one act: draw a distinction. In chapter 11 an expression re-enters its own form. It then oscillates, and time enters the calculus. Spencer-Brown came to the work from electronic engineering around 1960. He was also a practising psychotherapist.

Kauffman's essay "EigenForm" (2005) is free on his university pages. Sections 2 and 3, and the epilogue, need little mathematics. A reader who wants to work the calculus by hand can use Kauffman's "Box Arithmetic" pages. Von Foerster's founding paper, "Objects: tokens for (eigen-)behaviors" (1976), is reprinted in his *Understanding Understanding*.

In a life. Douglas Hofstadter's *Gödel, Escher, Bach* (1979) discusses *Drawing Hands* directly and introduces the "strange loop". His *I Am a Strange Loop* (2007) turns the idea on the self: the "I" as a loop that perceives itself, with no observer outside it. It draws on his own life.

Still missing

No film on strange loops or eigenforms exists in the sources found. No building or place is built on self-reference other than the Escher venues. *Drawing Hands* could not be confirmed on display anywhere from October 2026. ## Movement and number

7. Random, but bound

The line

What is random goes anywhere. What is bound is held by a force: a spring, a string, a field. The line is the commitment that binding needs a binder. A movement that stays near its starting point must be pulled back by something.

What the net says

Take a movement that leaves a point at random. Each step is $+1$, 0 or -1 , each with chance one third. "Bound to the point" means that the running sum comes back to 0 .

Count the strings of three steps. There are 27.

- **Exact return**, sum 0 : the string 000 and the six orders of $(+1, 0, -1)$. That is 7 of 27.
- **Return modulo 3**, the closure rule of the register: 9 of 27. The two extra strings are $+1+1+1$ and $-1-1-1$, with sums $+3$ and -3 .

Computed. The difference between 7 and 9 matters. Exact return means coming back along the line. The two extra strings do not come back on the line. They go once around a ring of three. The register counts both as closure. There are two ways to be bound to a point: coming back, and going round.

The numbers of exact returns after $0, 1, 2, 3, \dots$ steps are $1, 1, 3, 7, 19, 51, 141, 393$. These are the central trinomial coefficients. *Computed.*

The chance of exact return after n steps behaves as $\sqrt{3} / (2\sqrt{\pi n})$. Each step has variance $2/3$, and the normal limit gives $1/\sqrt{(2\pi n \cdot 2/3)}$, which is the same expression. At $n = 100$ the formula gives 0.0489 ; the exact count gives 0.0488 . *Computed.*

That chance goes to zero as n grows. But the sum of all these chances diverges. So a random movement along one line returns to its point with certainty, and does so infinitely often. *Proved: Pólya, 1921*. It holds for every step law with mean zero and finite variance.

In three dimensions it fails. There the chance of ever returning is 0.3405. *Source: Watson, 1939*.

The consequence is direct. “Random, but bound to the point” needs no force and no binder. A movement with only one direction, forward and back, stays tied to its point by itself. *Reading, on the proved recurrence*.

Where it stays open

If space is built from one-dimensional bound movements, where do three dimensions come from? In three dimensions a free movement is not bound. Two out of three paths never return. This is probably where binding and closure part ways. It is the clearest open question of the new theory.

Where to meet it

The theorem and its origin. George Pólya’s paper of 1921 is the source. It is in German and short. The story behind it is better known than the paper. It grew out of Pólya’s own repeated walks near Zurich. An accessible account is in *Scientific American*, under the title “This mathematician proved a brilliant theorem to justify his social awkwardness”. It gives the number for three dimensions: a chance of nearly two thirds of never returning. It also quotes Shizuo Kakutani’s summary: a drunk man finds his way home, but “a drunk bird may get lost forever”.

Wolfram MathWorld lists the exact value $p(3) = 0.3405373\dots$ under “Pólya’s Random Walk Constants”, with the later evaluations by Watson and others. Jonathan Novak’s short paper “Pólya’s Random Walk Theorem” (arXiv 1301.3916) gives the proof in a few pages.

Through electricity. Peter Doyle and J. Laurie Snell’s *Random Walks and Electric Networks* (1984) is free on arXiv. It proves the same result by asking how easily current flows to infinity through a grid of resistors. In one and two dimensions the resistance is infinite and the walker comes home. In three it is finite and the walker can escape. This is the clearest picture of why dimension matters.

By eye. “What Brown saw and you can too” (Pearle and colleagues, arXiv 1008.0039) shows how to see random motion with a home-made ball-lens microscope and pollen. It does not show return. It does let the reader watch the raw material of this chapter.

At the edge. Several works of art place rule and chance side by side. They are an analogy here, not a demonstration. The V&A in London shows *Degrees of Disruption: Vera Molnar and Generative Art* until 30 May 2027, free. Molnar fixed a rule and then let a measured amount of disorder act on it. Ellsworth Kelly’s *Spectrum Colors Arranged by Chance* and Kenneth Martin’s *Chance and Order* prints at Tate do the

same with colour and line. John Cage's *Silence* collects the lectures from the years he moved into chance composition. Frank Scheffer's film *From Zero* (1995) was itself edited by chance operations.

In Halberstadt, Germany, an organ in the Burchardikirche plays Cage's *ORGAN²/ASLSP* over 639 years, from 2001 to 2640. The next change of sound is on 5 October 2027. It is a line held without return, the opposite case: a movement that never comes back, made audible.

Still missing

No exhibition on random walks or on Pólya runs from October 2026. No documentary explains the mathematics of return. The question of three dimensions has no resource at all: it is open in the literature as well.

8. One act, three values

The line

Zero is nothing. It is the absence of a quantity. To get the three values $+1$, 0 and -1 , one needs at least two acts: one forward and one back. And order in a sum does not matter: $a + b = b + a$.

What the net says

Write the ground act as "leaving a place" and give it the value $+1$. Repeat it, and count modulo 3.

- Once: $+1$.
- Twice: $1 + 1 = 2$, which is -1 modulo 3. That is the mirror act: arriving at a place.
- Three times: $1 + 1 + 1 = 3$, which is 0 .

Proved: the group of three elements is generated by one element. From one act all three values arise. This works only on the ring of three. On the plain number line, $1 + 1$ stays 2 .

There are two roads to 0 .

- **Meeting:** the act meets its mirror. $+1 + (-1) = 0$.
- **Going round:** the same act three times. $+1 + 1 + 1$, or $-1 -1 -1$.

These are the two kinds of closure on the register. A window closes when its three trits are all different or all equal. *Proved.*

So the 0 is neither emptiness nor rest. It is a leaving and an arriving that cancel in the sum while both exist. In terms of light, it is a movement between two places and back: a standing wave with the points as nodes. That is the simplest bound light. *Reading.*

Where it stays open

Order still counts. Two acts towards each other ($><$) and two acts away from each other ($<>$) both sum to 0. They differ. The first closes. The second opens. The sum does not see the difference. The register needs a quantity that records order. *Open*.

Where to meet it

A computer that counted this way. In 1958–59 a team at Moscow State University designed Setun, a computer that worked in balanced ternary: -1 , 0 and $+1$. Its chief designer, Nikolai Brusentsov, wrote an account of it with colleagues for the Russian Virtual Computer Museum. It explains why the three-valued digit made the design simpler, and why production stopped in 1965. Forty-nine or fifty machines were built. Brian Hayes’s essay “Third Base” (*American Scientist*, 2001) is the classic readable account of balanced ternary. It covers the weighing puzzle and Setun together.

Whether a Setun can be seen today is unclear. One secondary source places it in the collection of the Polytechnic Museum in Moscow. The original prototype is reported destroyed.

A wooden replica of Thomas Fowler’s balanced-ternary calculating machine of 1840 was built in 2000 by Mark Glusker, with Pamela Vass and David Hogan, from a description by De Morgan. According to one source it is now at the Science Museum in London. Whether it is on show was not confirmed. Francis Hunger’s installation *The Setun Conspiracy* (Transmediale, 2008) is the only work of art found that takes the ternary computer as its subject.

The order problem, already met. Louis Kauffman and Francisco Varela wrote “Form Dynamics” in 1980. In it, the re-entering mark of Spencer-Brown oscillates. It has two phases, written I and J: one starts marked and alternates, the other starts unmarked and alternates. Their sum is the same. Their order is opposite. That is exactly the difference between $><$ and $<>$. Kauffman’s draft book *Laws of Form: An Exploration in Mathematics and Foundations*, free on his pages, works this out and links it to a third value in Tibetan logic. *Source*. The open question of this chapter has an earlier reading here. It is not yet a solution for the register.

In Spencer-Brown’s own voice. In March 1973 Spencer-Brown spoke for two days at a meeting near Esalen, organised by John Lilly and Alan Watts. The transcripts are online at the Kurt von Meier site. The meeting closed with a piece of music based on one of the book’s consequences. The Spencer-Brown Society (lof50.com) publishes the journal *Distinction* and holds a conference every two years. The next, LoF28, is at Wolfson College, Cambridge, from 7 to 11 August 2028.

In the body, by clapping. Steve Reich’s *Clapping Music* (1972) needs two people and no instruments. Both clap the same pattern. One stays. The other moves one beat ahead, step by step, until both are back in unison. It is one act set against itself, meeting and parting in every relation. Anyone can try it. Reich’s *Piano Phase* (1967) does the same with two pianists and a twelve-note figure.

Clapping Music is played at the Barbican in London on 28 October 2026, by the Colin Currie Group, in a concert for Reich’s ninetieth year.

In three beats. In Hindustani music a *tihai* repeats a phrase three times at equal distances, so that the third lands on *sam*, the first beat of the cycle. The Kathak dancer Rajashree Oak explains the types in “Tihai and its types” on narthaki.com. Three equal acts close the cycle. It is the going-round closure made audible.

Still missing

No Setun or Fowler machine could be confirmed on display. There is no documentary on Setun, and no exhibition on ternary logic or Laws of Form from October 2026. Donald Knuth’s treatment of balanced ternary in *The Art of Computer Programming*, volume 2, was not covered by the search but is the standard reference.

9. The third value

The line

A statement is true or false. Logic has two values. A sentence that refers to itself and contradicts itself — “this sentence is false” — is a paradox. Paradoxes are errors to be removed.

What the net says

The register has three values. Spencer-Brown’s calculus has two: marked and unmarked. In 1975 Francisco Varela added a third. He called it the autonomous value. It is the value of a form that re-enters itself: the value of self-reference. *Source*.

That gives three values from the act of distinction alone. It matches the trinity of the register: +1, −1 and 0. *Correspondence*.

Where it stays open

How Varela’s three values map onto +1, 0 and −1 is not settled. One reading puts the autonomous value at 0, the meeting of an act with its mirror. Another puts it outside the three, as the oscillation of chapter 8. *Open*.

Where to meet it

The primary text. Varela’s “A Calculus for Self-Reference” appeared in the *International Journal of General Systems* in 1975. His book *Principles of Biological Autonomy* (1979) develops it at length, as the logic of living systems that make themselves.

Two readings of it. Louis Kauffman’s “Mathematical Work of Francisco Varela” (*Constructivist Foundations*, 2017) argues that autonomy does not need to be placed at the base. It can be built from inside, with eigenforms. Rudolf Kaehr’s

“Kalküle für Selbstreferentialität oder Selbstreferentielle Kalküle?” (1990) argues the opposite worry: that Varela’s extra value tames the paradox instead of letting it work. Kaehr proposes building self-reference into the calculus itself. The two papers together mark the open question of this chapter exactly.

From a collaborator. Ranulph Glanville worked with Varela from 1977 to 1981. His “Francisco Varela (1946–2001): A working memory” recalls that work on distinction, re-entry and the Möbius strip. It confirms that the calculus was made to ground autopoiesis: the way a living thing makes itself.

From practice. Varela was not only a formalist. He practised meditation; his teachers included Chögyam Trungpa and Tulku Urgyen Rinpoche. He co-founded the Mind & Life Institute in 1987, for dialogue between contemplatives and scientists. Three books carry this side.

- *The Embodied Mind* (with Evan Thompson and Eleanor Rosch, 1991; revised 2017) joins mindfulness practice to cognitive science.
- *On Becoming Aware* (with Nathalie Depraz and Pierre Vermersch, 2003) is a practical manual for the act of becoming aware. It is listed as free to read.
- *Sleeping, Dreaming, and Dying* (1997) records a dialogue with the Dalai Lama.

In each, a mind that turns back on itself is studied by people who do it.

On film. Franz Reichle’s *Monte Grande: What is Life?* (2004, 80 minutes) lets Varela tell his own path: autopoiesis, meditation, consciousness and his approaching death. The Dalai Lama and Heinz von Foerster also appear.

In practice now. Mind & Life Europe holds online dialogues and talks through the autumn of 2026, from 21 October to 25 November. The Mind & Life Summer Research Institute 2027 runs at the Garrison Institute in New York from 6 to 11 June 2027, with daily meditation and a full silent day. Applications open on 1 December 2026.

Still missing

No work of art deals with the third value directly. No exhibition exists. Retreat centres in Varela’s own lineages were not searched. ## Return and memory

10. Arising by return

The line

Origins are counted. One becomes two, two become three, three become the ten thousand things. Chapter 42 of the received *Tao Te Ching* says exactly this. So does every creation story built on division: a first thing splits, and the splitting goes on.

The line is the commitment that arising goes forward and outward. What returns adds nothing. Return is repetition.

What the net says

In 1993 a tomb at Guodian in Hubei province yielded bamboo slips from around 300 BCE. They hold the oldest known Laozi material. Beside it lies a short text of 14 slips, the *Taiyi sheng shui*, “The Great One Gave Birth to Water”. It has not been found anywhere else. *Source*.

Its opening runs, in translation:

The Great One gave birth to water. Water returned and assisted the Great One; thus heaven was completed. Heaven returned and assisted the Great One; thus earth was completed. Heaven and earth assisted each other again; thus the spirits were completed.

The chain goes on through yin and yang, the four seasons, cold and heat, moist and dry, to the year. Then it stops. The text then reads the whole chain backwards, each product with its source. *Source*.

Three sentences follow that hold the mechanism. The Great One hides in water and moves through the seasons. It goes round and begins again. Once lacking, once full, it makes itself the warp of the ten thousand things. *Source*. The word for warp, 經, means the fixed threads of a loom through which everything else is woven.

Chapter 42, the counting cosmogony, does not occur in the Guodian Laozi. The older text does not count. It lets things arise by return and by mutual support.

The oldest form of the character 道 shows the same structure. The older graphs 衛 and 衛 are read as a person standing at a crossroads 行, with the head 首 inside and the foot 止 below. *Source; a scholarly reading, not a certainty*.

From these two sources come the second and third rules of the net.

- **R2 — Return gives birth.** What arises returns to its source, and from that return the next thing arises.
- **R3 — Mutual support.** Two things that have arisen support each other, and from that support the next layer arises.

In the first form of the theory, closure only selected. Under R2 closure also produces. Water returns to the One, and heaven is completed. *Reading*.

Where it stays open

From water to the year, the *Taiyi sheng shui* names nine products: water, heaven, earth, the spirits, yin-yang, the four seasons, cold-heat, moist-dry and the year. The register has nine closing windows. Whether these belong together must first be computed. It must not be read in. *Open*.

Where to meet it

The text. Scott Cook's *The Bamboo Texts of Guodian* (2012, two volumes) is the complete annotated English translation of the whole find. Volume I translates the Laozi material and the *Taiyi sheng shui*. Sarah Allan's article "The Great One, Water, and the Laozi: New Light from Guodian" (*T'oung Pao*, 2003) is the central scholarly reading of this text itself.

Allan's earlier book *The Way of Water and Sprouts of Virtue* (1997) gives the wider frame. It argues that early Chinese thinkers modelled their key ideas on water and on plants. Water shows the cosmic principle. Plants show growth and decline.

Robert Henricks's *Lao Tzu's Tao Te Ching: A Translation of the Startling New Documents Found at Guodian* (2000) compares the Guodian slips line by line with the later editions. It shows which received chapters are absent, including chapter 42. Roger Ames and David Hall's *Dao De Jing: Making This Life Significant* (2003) reads the whole text as process: things arise through relation, not from a substance.

The sign. The Wenlin dictionary's entry for 道 gives the older graphs and the reading of a person at a crossroads with a foot. It is free online.

The slips. The *Taiyi sheng shui* slips belong to the Hubei Provincial Museum in Wuhan. Its collection page describes them as an important early text on the origin of the universe. The museum's permanent display "Writing history" runs from oracle bone through bronze to bamboo and silk, and includes the Guodian group. Whether these slips are in a case on a given day was not confirmed. Ask before travelling.

The mountain. The Wudang Mountains, in the same province, hold Daoist palaces and temples from the Yuan, Ming and Qing dynasties. They are a UNESCO site and a living practice community. Ulla Fels's film *Der Meister von Wudangshan* (2005, 52 minutes) follows the master Tian Liyang there. Louguantai, west of Xi'an, is by tradition the place where Laozi wrote his text. It is an active temple with day tours.

Still missing

No exhibition of Chu bamboo slips or of the Guodian find runs from October 2026. The last two closed in March and October 2026. No public display of the old graph 衢 was found. There is no documentary on Daoism and water. No work of art addresses the text.

11. The past in the present shape

The line

The past is gone. What remains of it is evidence: documents, traces, ruins. These have to be interpreted, and the interpretation is always uncertain. The present form of a thing tells us what it is, not where it came from.

What the net says

The memory axiom N3 says: a closed configuration constrains what comes next. The net carries its history as its shape. *Assumed.*

On the register this was run literally. Sites inside a closed window were frozen. Only the rest was rewritten. The share of closed windows rose from one third to a plateau.

After step	1	2	3	6	11	40
Closed share, ring of 243	0.53	0.60	0.62	0.62	0.62	0.62

The prediction was a rise toward 1. That was wrong. The plateau lies near 0.62. Memory almost doubles closure, but leaves a large part open. A net with memory is ordered, but not frozen. *Computed.*

Two readings follow. First, the orientation laid down first can be read from the present form. Second, walking the path backwards does not find an empty past. It revives the stories laid down along it, back to the stones of the stone age and before. *Reading.*

Where it stays open

The origin reading has not been run. A register run that recovers the first orientation from later states is the test. It has not been done. *Open.*

Where to meet it

In the landscape. Oliver Rackham walked the English countryside for decades. His *The History of the Countryside* (1986) shows how fields, hedgerows, woods and heaths record the people, climate and soils that shaped them. The landscape is the archive.

Tim Ingold's *The Perception of the Environment* (2000) and *Lines: A Brief History* (2007) say the same from anthropology. Ingold did fieldwork among the Skolt Sámi. For him the landscape is the record of the dwelling that formed it. Walking, weaving, storytelling and writing all unfold along lines.

In wood. A tree adds one ring a year. Its width records the year's water and warmth. Matching patterns from tree to tree gives chronologies of thousands of years. The Hohenheim oak-pine chronology spans 12,460 years. Valerie Trouet's *Tree Story* (2020) tells world history from rings. She is a working dendrochronologist.

The Laboratory of Tree-Ring Research in Tucson, Arizona, was founded in 1937 by A. E. Douglass, who began tree-ring dating. It offers docent tours by reservation. In the White Mountains of California, the Methuselah bristlecone pine is 4,857 years old and deliberately unmarked. The Schulman Grove visitor centre closed for the winter on 15 October 2026, but roads and trails stay open.

In stories. Lynne Kelly's *The Memory Code* (2016) reads ancient monuments as memory devices for oral cultures. Kelly describes her own use of these techniques. Patrick Nunn's *The Edge of Memory* (2018) collects stories that have carried the rise of the sea after the last ice age for thousands of years. Both show the past held in a present form: a ring of stones, a story told the same way.

In stone. Göbekli Tepe in south-east Turkey is a set of megalithic enclosures built by hunter-gatherers between about 9600 and 8200 BCE. Its T-shaped pillars stand up to 5.5 metres. It received more than 320,000 visitors in the first half of 2026, and excavation goes on. A new welcome centre was due to open in 2026.

Closer to Leiden, the Hunebedcentrum in Borger, Drenthe, stands beside the largest hunebed in the Netherlands: 22.5 metres long, with nine capstones. On 22 October 2026 a guided walk reads the erratic boulders. On 12 November 2026 Willem Donker lectures on the hunt for 4,500 lost hunebeds. On 19 December 2026 the hunebed is lit with small lights. OERweekends follow in March and July 2027.

In caves. Werner Herzog's *Cave of Forgotten Dreams* (2010) was filmed inside the Chauvet cave with special access. The camera follows the rock relief that the painters used as part of their images. The shape of the stone was already in the work. A full-size replica, Grotte Chauvet 2, is open daily in the Ardèche. Lascaux IV in the Dordogne marks its tenth year with special visits on 29 and 30 October 2026.

In exhibitions. Several shows read local prehistory back from its finds. *Scotland's First Warriors* runs in Edinburgh to 16 May 2027, free. *Prehistoric Lives in the Trent Valley* runs in Nottingham to 10 January 2027. *Journey into the Past* runs in Zug, Switzerland, to 1 March 2028. They fit loosely. They show the method, not the claim.

Still missing

No work of art on deep time runs from October 2026. A Dutch dendrochronology laboratory open to visitors was not searched. Nothing yet shows the register's origin reading itself.

12. A resource is a fit

The line

A resource is a stock. Coal is in a seam. Oil is in a field. Water is in an aquifer. Whoever owns the ground above it owns the resource. It can be counted, sold and used up.

What the net says

In the net, the resource is a fit. It is present everywhere. It is reached by shape, phase and depth, not by owning the land above a deposit. *Reading.*

The numbers set the scale. One winding at depth 0 carries 4.357×10^{-18} J. If one mesh closes once per layer time, it passes at most 0.0287 W. A square metre holds 4.81×10^{14} meshes. The ceiling per layer is then 1.38×10^{13} W/m². *Computed, under one assumption.*

The one measured arrangement sits far below that. A cavity of 33 nm, in a metal-insulator-metal diode, gave 1.4 pW from 0.02 μm^2 with no applied voltage. That area holds 9.6 meshes. The ratio to the ceiling is 5.1×10^{-12} . *Computed from one measurement (Moddel and colleagues, 2021).*

The gap is not a sign that the net is weak. It shows how far present designs sit from what the net carries. Access depends on knowing how to make a mesh that closes. Whether that knowledge is shared or held is a choice people make. *Reading.*

Where it stays open

The ceiling rests on one assumption: one closure per mesh per layer time. A design that reaches even a small share of it does not exist. The open question here is less physical than human. Who will hold the knowledge of fits?

Where to meet it

Where a fit is already governed. For centuries, farmers on the plain of Valencia have shared water that no one owns. Every Thursday at noon the Tribunal de las Aguas sits at the Apostles' Door of Valencia Cathedral. Its judges are working farmers from the irrigation communities. The procedure is oral. Nothing is written down. Anyone can watch, without a ticket. Groups of up to 25 can ask for a guided visit. In Murcia, the Consejo de Hombres Buenos holds public hearings on Thursday mornings at the city hall. Both courts became UNESCO intangible heritage in 2009.

Two films show the Valencia court: Gudie Lawaetz's *El Tribunal de las Aguas* (1988) and the court's own short *The Water Court* (2013).

Where Ostrom found it. Elinor Ostrom's *Governing the Commons* (1990) won her the Nobel Prize in economics in 2009. It studies commons that lasted for centuries without being privatised or taken over by a state: Spanish huertas, Japanese villages, Philippine irrigation societies, and the Swiss village of Törbel.

Robert Netting lived in Törbel for about a year and a half from 1970. His *Balancing on an Alp* (1981) shows how meadows, forest and water channels are fitted to people. Törbel's pasture and water agreement dates from 1483. A Swiss report of 2025 states that its institutions still work. A research project at the University of Augsburg, started in 2025, studies how they are changing now.

Where water is timed by temples. In Bali, water temples schedule irrigation across whole watersheds. J. Stephen Lansing studied them for decades. His *Priests and Programmers* (1991) and *Perfect Order* (2006) show an order that no one designed from above. When the Green Revolution broke the temple schedule in the 1970s, pests spread and harvests fell by up to half. Authority was returned to the temples in 1988. The film *The Water Goddess and the Computer* (1989, André Singer and Lansing) shows the priests testing a computer model of their own system. The subak landscape has been a UNESCO site since 2012.

Where water is drawn by gravity. The Persian qanats are tunnels that bring groundwater to the surface by gravity alone. Eleven of them form a UNESCO site, with communal management still in place. The Ghasabeh qanats at Gonabad date to 700–500 BCE and are open to visitors. Farshad Fadaian's film *Surviving Fortress* (2021) follows a man in his seventies and his wife who have kept one qanat running for thirty years. Anthony Smith's *Blind White Fish in Persia* (1953) records his journey down into the tunnels.

Anupam Mishra documented the ponds and water systems that communities in Rajasthan built and kept for centuries. His *The Radiant Raindrops of Rajasthan* (1995) and his TED talk of 2009 let the keepers speak.

Close to home. The Hoogheemraadschap van Rijnland in Leiden dates from 1248. It is called the oldest water authority in the Netherlands. Dikes were maintained by those who depended on them, in proportion to their need. In 2027 the Alblasserwaard water board marks 750 years and the Unie van Waterschappen 100 years. The Vereniging voor Waterstaatsgeschiedenis plans a meeting in Dordrecht in the autumn of 2027.

Still missing

No exhibition on commons or water governance runs from October 2026. There is no film on Törbel. No work of art addresses the theme. ## The person and the place

13. The person in the mesh

The line

An experiment must not depend on who runs it. A device that works for its builder and not for a stranger is, by that fact, not a device. The person is outside the apparatus, as the human ends at the skin.

This line is among the oldest in modern science. It is also where the most stories collect.

What the net says

On the register, a direction does not last on its own. Start a ring with 40 % of +1 and 27 % of −1. The signed share is +0.13. After one rewrite it is +0.003. The direction does not flip. It vanishes. *Computed.*

Pin a fraction h of the sites to +1 at every step. Then a steady direction remains.

Held fraction h	0	0.05	0.10	0.20	0.33	0.50
Direction D, ring of 81	0.008	0.060	0.117	0.243	0.427	0.628

D is about 1.25 to 1.3 times h . The held sites order their neighbours too. *Computed.*

The rule is that every passage needs a hold that acts in every layer time. A fixed wall can be a hold. So can whatever pins a share of sites: a hand near a box, a body in a room, a group in step. Large meshes fit large windings, and these differ by place, hour and person. *Reading.*

That reading turns an old complaint into a design fact. Some historical apparatus was said to work for its builder and not for strangers. If the builder was the hold, the apparatus without him was incomplete. *Reading; corresponded with historical reports; open as technology.*

Where it stays open

The reading needs a case. The search looked hard for a builder's own statement that his device worked for him and not for others. It did not find one. The nearest statements are by witnesses, and they are contested. This place is open in fact as well as in theory.

Where to meet it

In mainstream science. The clearest documented case is not exotic. In 1974 the sociologist Harry Collins studied laboratories trying to build a new kind of laser, the TEA laser. Published descriptions were not enough. Labs succeeded only after contact with someone who had built one. Collins's paper "The TEA Set: Tacit Knowledge and Scientific Networks" made this a classic. The knowledge lived in persons, not in papers.

Michael Polanyi had argued the same from inside the laboratory. He was a working chemist. His *Personal Knowledge* (1958) holds that all scientific knowing rests on personal skill and judgment, much of it tacit. Richard Sennett's *The Craftsman* (2008) shows how craft knowledge lives in the maker's body and practice.

Robert Rosenthal's *Experimenter Effects in Behavioral Research* (1966; enlarged 1976) is the classic study of how the experimenter's expectation changes results in psychology.

Where the person was the variable. In 1997 Richard Wiseman and Marilyn Schlitz ran the same experiment in the same laboratory, with the same procedure and the same pool of participants. Only the experimenter differed. Schlitz's participants showed a skin response when stared at. Wiseman's did not. A follow-up in 2006, with the roles separated differently, found no effect. Both outcomes are part of the record. The Psi Encyclopedia of the Society for Psychical Research collects further cases, under "Experimenter Effects in Psi Research" and "Sheep-Goat Effect". In the second, those who expect a result tend to score above chance, and those who do not tend to score at or below it.

The builders, in their own words. Nikola Tesla's *My Inventions* (1919) describes how he built and ran his devices in his mind before building them. His *Colorado Springs Notes, 1899-1900* is his laboratory diary from that year, published unaltered. The Nikola Tesla Museum in Belgrade holds his original archive, listed in UNESCO's Memory of the World. It is open daily. Tesla's last laboratory at Wardenclyffe, on Long Island, offers booked tours on weekends until 15 November 2026.

Viktor Schauberger was an Austrian forester who learned from water, fish and vortices. His own writings appear in English in *The Water Wizard* (1997/98) and *Living Energies* (2001), both edited by Callum Coats. Olof Alexandersson's *Living Water*

(1990) is the readable entry. The documentary *Schauberger's Legacy* (German 2024; English 2025) shows present-day engineers applying his ideas to rivers, soil and pumps. The family archive in Bad Ischl, Austria, holds his manuscripts and models. It has no public hours; visits are by arrangement with the family. On 27 October 2026 Jörg Schauburger speaks at a session on vortices in water technology at the European Water Tech Week in Leeuwarden.

T. Henry Moray's *The Sea of Energy in Which the Earth Floats* (1960) is his own account of a "radiant energy" device. Contrary sources exist. A 1940 letter by the Utah physicist Orin Tugman reports demonstrations repeatedly postponed. A 1944 Senate hearing excerpt says Moray demonstrated the device without success on many occasions. An online collection of Moray material says that independent investigators took the device apart and restarted it themselves. That, if accurate, cuts against this chapter's reading rather than for it.

A witness on Keely. The clearest period statement linking a device to its maker concerns John Keely in Philadelphia. In *The Secret Doctrine* (1888, volume 1, page 562), Helena Blavatsky wrote that no one but Keely "could operate on his 'machines'". Keely's patron Clara Bloomfield-Moore wrote the main contemporary account, *Keely and His Discoveries*. On 19 January 1899 the *Philadelphia Press* reported concealed high-pressure tubes and hidden belts in his basement. The company's president denied the report six days later. Both sides are part of the record.

A dowser, tested. Kenneth Roberts's *Henry Gross and His Dowsing Rod* (1951) reports a dowser who found water across Maine. The same book describes tests in which Gross could not tell jars of water from jars of sand. Martin Gardner cited those tests. Vogt and Hyman, in *Water Witching U.S.A.* (1959), read such results as unconscious movement and suggestion. Field success and test failure stand side by side, from the same author.

The mirror case. In the literature around Wolfgang Pauli, apparatus failed when one particular person came near. The essay *the Paranormal is Normal* (2026) collects the best-documented instance and its sources. It is the same reading turned round: the person as a hold that stops a passage.

Still missing

No builder's own statement of person-dependence was found. No exhibition on Tesla, Schauburger or similar builders runs from October 2026. No visitable Moray archive exists. No work of art addresses the theme.

14. Constants that differ by place

The line

The constants of nature are the same everywhere. That is what makes them constants. A result that holds in Leiden holds in Tokyo. If a procedure works in one place and not in another, the procedure is faulty.

What the net says

The context axiom N4 says that what physics calls constants are state functions of the local tension χ . *Assumed.*

The numbers show how far this reaches, and where it stops.

The fine-structure constant α follows $\Delta\alpha/\alpha = \beta \cdot \Delta\chi$, with $\beta = \alpha/4\pi = 5.81 \times 10^{-4}$. A change of 1 % in α needs $\Delta\chi = 0.01 / 5.81 \times 10^{-4} = 17.2$. At the Earth's surface χ is about 7×10^{-10} . This dial does not move by human means. *Computed boundary.*

Over height the difference in χ is tiny. Between two points 100 m apart, $\Delta\chi = g \cdot h/c^2 = 9.81 \times 100 / (9.0 \times 10^{16}) = 1.1 \times 10^{-14}$. *Computed.* Yet clocks already read differences of this kind. Two clocks at different heights tick at different rates.

So the theory predicts a small, place-bound variation of constants. For the white dwarf G191-B2B it predicts $\Delta\alpha/\alpha \approx 3 \times 10^{-8}$, to be checked against a map of χ fixed in advance. *Predicted.*

At the human scale the claim is different. Large meshes fit large windings, and these differ by place. Choosing the place is choosing what fits. That is why a builder's apparatus could work at one site and not at another. *Reading; corresponded.*

Where it stays open

Two readings of χ exist: one from acceleration, one from potential. They are not yet one (open point O4). Until they are, the tension map stays a prediction.

Where to meet it

Measured variation. In 2010 a NIST team placed two aluminium atomic clocks about 33 cm apart in height. The higher clock ran faster, by a measurable amount. In 2022 Jun Ye's group at JILA saw time run slower at the bottom of a strontium sample about one millimetre tall. *Physics World* reported both. These are established results. They show that "the same everywhere" already fails at the scale of a table.

The European satellite GOCE mapped the Earth's gravity. The resulting geoid departs from the ideal shape by about -100 m to $+80$ m. A *Scientific American* piece calls it a potato.

A constant that may vary in the sky. In 2011 John Webb and colleagues reported in *Physical Review Letters* that the fine-structure constant seems to differ by direction in the sky, at a significance of 4.2 standard deviations. The claim is disputed. It is the only entry in this book that touches a constant literally.

How a constant is made to hold. Simon Schaffer's "Late Victorian metrology and its instrumentation: a manufactory of Ohms" shows how a unit was made the same everywhere, through instruments, institutions and people. A constant, in practice, is an agreement kept in place.

A chemist's tests that would not repeat. The Italian chemist Giorgio Piccardi ran the same precipitation tests for years. They did not come out the same way at different times. He linked the variation to solar activity. His book *The Chemical Basis of Medical Climatology* (1962) reports the work.

The spirit of place. Christian Norberg-Schulz's *Genius Loci* (1979) is the basic work on why a place has its own character that building must answer. Edward Relph's *Place and Placelessness* (1976) shows how that character is lost under standardisation.

Practices that read place. Stephen Skinner's *Feng Shui: The Living Earth Manual* describes siting as it is practised. Adeline Herrou's ethnographic film of a Taoist monk in central China (2018, 72 minutes) records him describing a site's good quality as something that changes with time.

Dowsers read place directly. Hamish Miller and Paul Broadhurst walked and dowsed the St Michael alignment across southern England in the 1980s. In *The Sun and the Serpent* (1989) they report two lines winding around the straight course. Miller's short *Dowsing* (2007) gives exercises. George Kachadorian's film *Divining Mom* (c. 2003) follows his mother, a dowser, as she picks a well site. His father, a civil engineer, is the sceptic in the film. The result is left open. Rupert Sheldrake's *Science and Spiritual Practices* (2018) has a chapter on pilgrimage and sacred sites.

Places. Some places do one thing at one time only. At Newgrange in Ireland, built around 3200 BCE, sunlight enters the chamber through a roof-box at the winter solstice. Only lottery winners are inside at sunrise. At Chartres, the labyrinth in the nave floor is traditionally uncovered for walking on Friday afternoons until 1 November. In 2026 that leaves 23 and 30 October; confirm with the cathedral. At Delphi, a geological study of 2001 found two faults crossing beneath the probable site of the oracle chamber. The Mary Michael Pilgrims Way is a walking route linked to the line tradition.

In Leiden, Rijksmuseum Boerhaave holds Salomon Coster's pendulum clock of 1657, built to Christiaan Huygens's design. A pendulum's rate depends on local gravity. Every pendulum clock is a reader of its place.

Still missing

No exhibition on genius loci, geomancy or sacred sites runs from October 2026. No work of art addresses the theme. No exhibition shows clocks at different heights.

15. Care as closing loops

No clinical claim is made in this chapter.

The line

Illness is damage. A part is broken, a substance is missing, an invader is present. Care finds the part and repairs it. Health is the absence of disease.

What the net says

A body, in the net, is a knot structure. A disorder is a loop that does not close. Care means setting the state so that the closed configuration is the one that stays. *Reading: open.*

One reading tool already exists. Give each winding an orientation as a unit quaternion. Form the average of their outer products. Its largest eigenvalue, R_Q , lies between $1/4$ and 1 . It reads whether an ensemble closes together. *Proved (T22).* The first measured value was $R_Q \approx 0.70$.

Where it stays open

No clinical study has been run. The coherence reading has not been applied to a body. This place is open.

Where to meet it

Health as coherence. Aaron Antonovsky asked why some people stay well under great strain. His study began with women who had survived the Nazi concentration camps. *Unraveling the Mystery of Health* (1987) introduces the “sense of coherence”: a life that is comprehensible, manageable and meaningful. He called the approach salutogenesis: the study of the origins of health.

Mae-Wan Ho’s *The Rainbow and the Worm* (third edition, 2008) describes the organism as a coherent whole, from her own biophysics laboratory work. Leon Glass and Michael Mackey’s *From Clocks to Chaos* (1988) treats body rhythms mathematically. Some disorders appear in it as timing faults in feedback loops, which the authors call dynamical diseases.

The HeartMath Institute’s free e-book *Science of the Heart* describes heart-rhythm coherence as a trainable state, in the institute’s own terms. James Oschman’s *Energy Medicine* (2016) reviews research on fields in the body. Gerald Pollack’s *The Fourth Phase of Water* (2013) reports his laboratory’s findings on ordered water at surfaces. Its theories are disputed.

Rhythm sustained. Moshé Feldenkrais developed his method in his own body. *Awareness Through Movement* (1972) treats movement as a loop between action and attention. John Stevens’s *The Marathon Monks of Mount Hiei* (1988) documents a walking practice of 1,000 days spread over seven years.

From the teachers. Yang Jwing-Ming’s *The Root of Chinese Qigong* (third edition, 2022) and Jan Silberstorff’s *Chen: Living Taijiquan in the Classical Style* (2009) are written by practising teachers.

The film *Chen Village Tai Chi Chuan* (Empty Mind Films, c. 2009, 75 minutes) shows daily training in Chenjiagou, the village where Chen-style taijiquan began, with the lineage holder Chen Xiaowang and others. Visitors to Chenjiagou in Henan can practise with local masters.

Chen Xiaowang teaches in Europe this autumn: in Prague from 30 October to 1 November 2026, in Romania from 4 to 7 November, and in Switzerland from 18 to 23 November. In Berlin, the Chen Taijiquan Network Germany teaches in a documented lineage at the Kulturbrauerei. The Wudang Mountains in Hubei are the legendary home of taijiquan and a living centre of Daoist internal practice.

Old places of care. The Roman Baths in Bath and the thermal tunnel at Bad Gastein in Austria are places where people have sought balance for centuries. The operator claims made for the second are not repeated here.

Still missing

No film on heart-rate coherence or on ordered water was found. No exhibition runs from October 2026. No qigong centre or Chen-lineage school in the Netherlands was confirmed. No work of art addresses the theme. ## What never rests

16. Perpetual circulation

The line

Every motion runs down. Friction takes its share at every turn. A machine that runs for ever, giving work from nothing, is impossible. Patent offices refuse to examine one. The line is the commitment that rest is the natural state and motion needs a cause.

What the net says

Run the rewrite rule R on every possible ring of a given length, and record where each ends. Almost none come to rest.

Ring length	Rings that come to rest	Cycle lengths found
5	3 of 243	$8 = 3^2 - 1$
7	3 of 2,187	$26 = 3^3 - 1$
11	none found	$121 = (3^5 - 1)/2$
19	none found	$9,841 = (3^9 - 1)/2$
23	none found	$177,146 = 3^{11} - 1$

On lengths not divisible by 3, every cycle length found divides $3^j - 1$ for some j. At length 7, 99.86 % of all rings never rest. *Computed.*

On the register, endless circulation is the normal state. Rest is the exception. The ring length sets the period: 26 steps at length 7, 177,146 steps at length 23.

This gives a precise meaning to an idea that has no good word: a flow that never stops, in which nothing is made and nothing is lost. It is not perpetual motion. Nothing leaves the net and nothing enters it. No work is taken out. *Reading, on the computed runs.*

Where it stays open

The register shows circulation. It does not yet show a physical ring of seven cells under a rewrite. A neighbouring mesh that takes a share of what circulates — the “rest catcher” — has not been run. *Open*.

Where to meet it

Currents that do not stop. In a ring of superconducting lead, a current once started keeps flowing. HyperPhysics, the Georgia State University reference site, notes currents maintained in lead rings for several years, with a decay constant of over a billion years. A measurement by File and Mills in 1963 put a lower bound of more than 100,000 years on such a current’s life. Nothing drives the current. Nothing leaves.

In 2009 a Stanford team measured persistent currents in ordinary gold rings one to two micrometres across, not superconducting at all. Yoseph Imry’s short review “Tireless electrons in mesoscopic gold rings” (*Physics*, 2009) explains it. The current lasts as long as the electrons stay in phase around the ring. That is the net’s condition in a laboratory: what returns in phase does not stop.

A world in a jar. A bottle garden planted in 1960 and watered once, in 1972, has kept its cycle of water and carbon going for decades in a sealed bottle. Hans Haacke’s *Condensation Cube* (1963–65) is the same in art: a sealed acrylic cube in which water evaporates and condenses without end. Copies are held at Tate, the Hirshhorn and the Generali Foundation. Of all the works found, it fits this chapter most closely. Nothing enters or leaves.

Clocks that are fed, honestly. Several famous clocks seem to run for ever. Each draws on its surroundings, and each is clear about it. That makes them a useful contrast.

- The **Atmos clock** of Jaeger-LeCoultre, invented by Jean-Léon Reutter in 1928, runs on a sealed capsule of gas that breathes with the temperature. A change of 1 °C gives about two days of running.
- The **Beverly Clock** at the University of Otago in Dunedin has not been wound by hand since 1864. A sealed box of air pushes a diaphragm as the temperature changes.
- **Cox’s Timepiece** (1760s), at the V&A in London, was wound by about 68 kg of mercury rising and falling with air pressure. Cox called it perpetual motion. It has been stopped since it came to the museum.
- The **Oxford Electric Bell** in the Clarendon Laboratory has rung about twice a second since 1840, some ten billion strokes, on two dry piles. It still rings, inaudibly, behind two layers of glass. Public access is not documented.

The obsession, and its honest parody. Arthur Ord-Hume’s *Perpetual Motion: The History of an Obsession* (1977) is the standard history. It separates the dream of work from nothing from the plain fact of a flow that keeps itself going. The chemist David Jones, who wrote as “Daedalus”, built a perpetual-motion wheel as a deliberate

illusion. It has spun at the Royal Society in London since 2018. It needs an occasional nudge, and its secret is sealed in an envelope for thirty years. Oxford's TORCH centre has an online exhibition, *David E. H. Jones: In Perpetual Motion*.

Endless slow motion. Arthur Ganson's *Machine with Concrete* runs a motor at 200 revolutions a minute through twelve gear stages, each 1:50. The last gear is set in concrete. It would need $200 \times (1/50)^{12} = 8.2 \times 10^{-19}$ revolutions a minute: one turn in about 2.3×10^{12} years. *Computed*. Motion fed at one end disappears into stillness at the other. Ganson explains why he builds such machines in his Long Now talk "Machines and the Breath of Time" (2009).

Theo Jansen's *Strandbeesten* walk on the beach driven by wind. His retired beasts are shown at the Strandbeesten Mortuary of Museum Prinsenhof Delft, reopened in April 2026, on Thursday and Sunday afternoons, free. In Santa Barbara, California, *Falling into the Future: Kinetic Art at the Edge of the World* runs until 1 May 2027.

Still missing

No documentary on persistent currents or sealed cycles was found. No exhibition shows closed circulation as its theme. The Oxford bell cannot be visited, and the display status of Cox's timepiece is unknown.

17. Poised matter

The line

A material has a fixed character. Steel is stiff. Water is liquid. To change it, apply force or heat in proportion. A small cause gives a small effect.

What the net says

The coupling of a medium follows $g_{\text{eff}} = \bar{g}(1 + \gamma\delta)$, where δ is the departure from a reference density. Its lever is $1/\varepsilon$, where ε is the distance to the critical point. *Proved (T4)*. Near the tipping point the lever becomes very large. A tiny setting moves a lot.

"Poised matter" is a medium held permanently at $\varepsilon \approx 0$. Its lever is maximal. It answers the smallest touch. It takes the form it is given. *Open; named in Beyond Energy*.

Combined with memory, the theory names a second possibility: poised memory. A medium at its tipping point that remembers its first form. It takes any form it is given and returns to its first form when released. *Open*.

Where it stays open

No register run has coupled δ between neighbours. No material has been held at its critical point and measured over time. Both are the next runs.

Where to meet it

A pile that keeps itself at the edge. Per Bak's *How Nature Works* (1996) introduced self-organised criticality. A sandpile, fed grain by grain, drives itself to the tipping point and stays there. The next grain may set off a slide of any size. Bak was a theorist, but the pile is something anyone can watch. Of everything known, it comes closest to poised matter. It does not show return to a first form.

A metal that remembers. Nitinol, an alloy of nickel and titanium, was developed by William Buehler at the US Naval Ordnance Laboratory between 1959 and 1962. At a meeting in 1961, a strip folded like an accordion was heated with a pipe lighter. It snapped back to its first shape. NASA publishes a classroom activity: bend a nitinol wire into any shape, put it in hot water, and watch it return. The same wire, cold, takes whatever form it is given. This is the "remembers its first form" half of poised memory, in a material that can be bought.

A liquid that answers. Cornstarch in water, two to one, is liquid at rest and solid under a sudden push. People walk across pools of it. The Boston Museum of Science explains it in a forty-second video, with the recipe. It is a mirror case: it stiffens under a push instead of yielding.

Sachiko Kodama's *Protrude, Flow* (2000, with Minako Takeno) uses a magnetic fluid that rises in sharp forms in response to visitors' voices and falls back when the sound stops.

Balance made by hand. Andy Goldsworthy builds stone spirals, webs of twigs and sculptures of ice to the edge of collapse. Thomas Riedelsheimer's film *Rivers and Tides* (2001) follows him as the works fall and he starts again. Michael Grab balances stones on their points with no glue. He describes feeling the small vibrations of each adjustment until the stone holds.

Alexander Calder's large mobile in the East Building of the National Gallery of Art in Washington moves with a breath of air and returns to its first form. It has hung there since 1977.

Sand that sings. At the Eureka Dunes in Death Valley, California, very dry sand sliding down the steep face sets off a deep booming tone. About 35 booming-sand sites are known worldwide. The visitor triggers it by walking down.

In a museum of machines. Museum Tinguely in Basel keeps Jean Tinguely's kinetic machines, some of them hands-on. Nicolas Darrot's *Fuzzy Logic* runs there until 7 March 2027.

Still missing

No exhibition on tipping points or balance runs from October 2026. No popular book on shape memory by a maker was found. Nothing yet shows poised memory: a medium at the tipping point that also returns.

18. The store that shows nothing

The line

A full store shows its contents. A charged battery holds charge. A raised weight holds height. Zero means empty. If a measurement shows nothing, there is nothing there.

What the net says

Every closed winding has a unique address, a string of trits. The address of $-Q$ is the mirror of the address of Q : swap $+1$ and -1 . *Proved (T7.1)*.

A winding and its mirror together sum to zero. That suggests a store that shows nothing while full. A winding is held as a pair that sums to zero. It is released by separating the pair. *Open; named in Beyond Energy as "mirror pairing"*.

Chapter 8 already gave the reading: 0 is not emptiness but a leaving and an arriving that cancel while both exist. The same holds here at the scale of a store.

Where it stays open

Pairs of mirror windings under R have not been run on the register. *Open*.

Where to meet it

A tower held in balance. Kenneth Snelson's *Needle Tower* (1968), in the sculpture garden of the Hirshhorn Museum in Washington, is made of steel tubes that do not touch each other. Cables hold them in tension. The tower looks still. It is full of opposed forces in balance: tension against compression. Cut one cable and the stored load is released. Snelson found the principle by hand. Of all the resources found, this is the clearest picture of a store that shows nothing while full.

Water that separates charge. Lord Kelvin's water dropper of 1867 needs only two streams of falling water, two metal rings and two buckets. Neutral water separates into opposite charges until a spark jumps. The charge was present in the neutral water as a balanced pair. Separation releases it. It can be built at home.

The full void. Frank Close's *The Void* (2007) is by a working particle physicist. It describes empty space as full of pairs of particles that appear and vanish. It is the only book found on a pair that sums to nothing.

The empty hub. Chapter 11 of the *Tao Te Ching* says that thirty spokes share one hub, and the empty space in the hub makes the wheel useful. The same holds for the hollow of a pot and the openings in a house. Several translations sit side by side on the YellowBridge site. James Legge's full translation is free on Project Gutenberg.

Silence that is full. In 1951 John Cage sat in an anechoic chamber, a room built for silence. He heard two sounds, which he took to be his nervous system and his blood. A year later David Tudor premiered *4'33"*: a frame empty of notes and full of the sound of

the room. Kay Larson’s essay in *Tricycle* tells the story from Cage’s Zen practice. Frank Scheffer’s films *How to Get Out of the Cage* (2012) and *From Zero* (1995) show Cage in his own words.

The interval. In Japanese, *ma* is the charged interval: a gap that holds. Takahiko Iimura’s film *MA: Space/Time in the Garden of Ryoan-ji* (1989, 16 minutes) presents the dry garden in Kyoto as *ma* made visible. In that garden, fifteen stones lie in raked gravel. From any viewpoint one stone is always hidden.

Emptiness made solid. Rachel Whiteread casts the space inside rooms and objects, so that the empty space becomes a solid. Kazimir Malevich called his *Black Square* (1915) the zero point of painting. In 1958 Yves Klein emptied a Paris gallery, painted it white and invited the city to *Le Vide*. These are analogies. They make emptiness visible. They do not show a pair that sums to zero.

Still missing

No exhibition on void or emptiness runs from October 2026. No second popular book on pair creation was found. The place is the weakest in the book: only Snelson, Kelvin and Close touch the structure itself. ## Agreement and selection

19. Agreement without a master

The line

Agreement needs a master. Clocks agree because they are set to a reference. An orchestra plays together because it follows a conductor. Two systems far apart can share one state only if a signal passes between them.

What the net says

Couple two rings of trits, a and b. Each is rewritten by R. Each also reads the other ring at the same site, with a weight k:

$$a' = -(a_{i-1} + a_{i+1}) - k \cdot b_i$$
, and the same for b with a and b exchanged.

With $k = 0$ or $k = 1$, the rings agree on about a third of their sites. That is chance. With $k = 2$, which is -1 modulo 3, something sharp happens.

Ring length	9	27	81	243	10	18	28	30	54
Runs that lock (of 200)	200	200	200	200	0	0	0	0	0
Most steps needed	5	14	41	122	—	—	—	—	—

Computed.

The proof is short. Let $d = a - b$. With $k = 2$, the difference evolves as $d' = -(x^{-1} + 1 + x) \cdot d$, where x is a shift by one place. Over the field of three elements, $1 + x + x^2 = (x - 1)^2$. So the difference is multiplied by $-x^{-1}(x - 1)^2$ at every step. On a ring of length 3^k ,

$(x - 1)^{(3^k)} = x^{(3^k)} - 1 = 0$. The operator is nilpotent. The difference reaches zero in at most $\lceil 3^k/2 \rceil$ steps: 5, 14, 41, 122. On any other length, $x^n - 1$ has other factors, and part of the difference never vanishes. *Proved*.

Three points follow.

First, lock is nilpotence. In Peter Rowlands's physics a real state is one whose operator squares to zero. The Foundational Paper identifies this with closure. Here it appears as a working rule.

Second, the ladder decides. Lock happens only at lengths 3^k .

Third, the coupling that locks is counter-coupling. In 1665 Christiaan Huygens noticed two pendulum clocks hung from one beam. They settled into exact opposition. The register's lock has the same sign.

The converse is just as useful. Off the ladder, coupled systems keep their difference. That is a way to build things that must not all fail together. *Reading*.

Where it stays open

The register lock is local: each site reads the other ring at the same site. Whether two distant structures can share one state without a signal is not shown. No resource found addresses that case. *Open*.

Where to meet it

Where it was first seen. In February 1665 Huygens saw two of his clocks, hanging from one beam, swing in opposition. He reported it as a "sympathy" of the clocks. The oldest surviving pendulum clock, signed by Salomon Coster in The Hague in 1657 and made to Huygens's design, is in Rijksmuseum Boerhaave in Leiden. Phone ahead to confirm it is on show (071-751 99 99). Huygens's house Hofwijck in Voorburg is a museum, open Thursday to Sunday afternoons.

In 2002 Matthew Bennett and colleagues rebuilt Huygens's set-up. Their paper "Huygens's clocks" shows that lock happens only in a narrow window: near-equal frequencies, enough coupling and heavy cases. Huygens had weighted his with about 40 kg of lead. In 2017 Willms, Kitanov and Langford showed that Huygens's geometry could only produce opposition. The set-up selects one locked state.

A contrast case is useful. In 2016 Peña Ramirez and colleagues set two large clocks by a clockmaker on one pine structure. They locked in phase, not in opposition. The geometry of the coupling sets the sign.

At home. Two metronomes on a board resting on two drink cans fall into step. James Pantaleone's "Synchronization of metronomes" (*American Journal of Physics*, 2002) explains the recipe. A video from the Ikeguchi laboratory in Japan shows 32 metronomes on one movable board becoming one beat within minutes. The board is the only coupling.

In nature. In the Great Smoky Mountains of Tennessee, thousands of fireflies of one species flash in unison in late May or early June, with no leader. Viewing at Elkmont is by lottery, usually drawn in late April. Congaree National Park in South Carolina has a second species with a different code. In the mangroves of Kuala Selangor in Malaysia, whole trees of fireflies flash as one all year, seen from boats at dusk.

Steven Strogatz's *Sync* (2003) is the standard account of such locking without a conductor: fireflies, clocks, the pacemaker cells of the heart. His TED talk of 2004, "The science of sync", is twenty minutes long.

In people. In a study of 2013, fifteen Swedish students sang in unison and their heart rates rose and fell together. In 2012 the drummer Mickey Hart led a drum circle of a thousand people while his own brain rhythms were shown live.

In music. Steve Reich found phasing by accident. Two tape machines playing the same loop drifted apart and came back. He then learned to play "as if I were a second tape recorder". *Piano Phase* (1967) and *Clapping Music* (1972) let two players drift through every relation and return to unison.

Reich turns ninety in 2026, and his music is played widely this season.

- *The Desert Music*, Nederlands Kamerkoor with ensembles: Middelburg, Zeeuwse Concertzaal, 24 October 2026; Nijmegen, De Vereeniging, 25 October 2026.
- Colin Currie Group, including *Clapping Music*: Barbican, London, 28 October 2026.
- "Clapping for Steve Reich", Philharmonie de Paris, 12-15 November 2026.
- Münchener Kammerorchester, Pinakothek der Moderne, Munich, 16 January 2027.

A sound that holds things together. *Nada Brahma: The Universe Is Sound* opens today, 21 October 2026, at the Embassy of the Free Mind in Amsterdam and runs to 15 January 2027.

Still missing

No source addresses two distant structures held in one state. No exhibition on synchronisation or on Huygens runs from October 2026. No visual work of art addresses the theme.

20. Matter by selection, and the cut

The line

To make a substance, one converts another. Heat, pressure and reaction turn one thing into the next. Alchemy failed because it could not convert lead into gold. Modern physics can, at great cost, in a reactor.

What the net says

Every closed winding has a unique address. Its charge Q is conserved as long as the strand stays continuous. *Proved* ($T3$, $T7$). An address cannot be pushed. So matter is not converted. It is selected.

The address of the target already exists in the net. The method is three steps: soften the medium toward its critical point, impose the mesh, harden again. Only what closes in the mesh remains. *Predicted; waits on the rewrite rule O2*.

A genuinely new address, one that does not yet exist, needs something else: a break in the strand. That lies outside every cycle of softening and hardening. It is the cut. *Open*.

Reading the Net points to an observed case of the cut. Knotted vortices in water untie by exactly such a break and reconnection. *Correspondence*.

Where it stays open

The rewrite rule O2 is open. No rule for strand breaks exists yet. Both halves of this chapter are open.

Where to meet it

Selection you can see. In 2008 the artist Roger Hiorns filled a council flat with 75,000 litres of hot, supersaturated copper sulphate solution. As it drained and cooled, only one form stayed: blue crystal, on every surface. The work, *Seizure*, now stands at Yorkshire Sculpture Park near Wakefield. It can be visited in timed slots at 14:30 on weekends and school holidays from 24 October to 31 December 2026. Booking is required. It is not wheelchair accessible.

Seizure is the clearest picture of this chapter. The solution was not converted into crystal. The state was set so that only the crystal could remain.

Alchemists at the bench. Lawrence Principe is a chemist and historian. In *The Secrets of Alchemy* (2012) he reads alchemical recipes as coded laboratory procedures and reruns them in his own laboratory. The colour plates show the results. In an interview with the New Books Network he describes these reconstructions.

William Newman and Principe's *Alchemy Tried in the Fire* (2002) reconstructs the notebooks of George Starkey, a working chymist of the 1650s. It follows his daily preparation of the conditions under which a product appears.

At Indiana University, *The Chymistry of Isaac Newton* publishes Newton's alchemical manuscripts online. Newman's team rebuilt Newton's processes: metallic "trees" growing from solution, the star regulus of antimony, and a working replica of his furnace. The metallic tree is selection made visible: from a solution, only what fits grows.

Collections. The Embassy of the Free Mind on Keizersgracht in Amsterdam holds Europe's main library of hermetic and alchemical texts. It is open Wednesday to Sunday. Its exhibition *C. G. Jung: From Psyche to Gnosis* runs to 28 December 2026.

The Science History Institute in Philadelphia opened a new permanent gallery, *Fire and Gold: The Art of Alchemy 1450–1850*, on 7 October 2026. It is free. In Prague, Speculum Alchemiae shows historic laboratory rooms found during reconstruction, with tours every half hour, daily.

The cut. In 1917–1919 Ernest Rutherford struck nitrogen with alpha particles and counted the flashes on a screen himself. He saw hydrogen nuclei come out. It was the first artificial change of one element into another. His paper of 1919 described the nitrogen nucleus as disintegrated by the collision. That is a cut: a break, not a selection.

Lucio Fontana's slashed canvases, from 1959, are the cut in art. One stroke of a blade opens a space that was not there. Tate holds *Spatial Concept 'Waiting'* (1960).

What can come next. Stuart Kauffman's "adjacent possible" holds that what can appear next is limited to what is one step from what exists. New forms cannot be listed in advance. His essay "The Adjacent Possible" (Edge, 2003) and his book *Investigations* (2000) explain why the map of the net can only grow by being walked.

Still missing

No documentary on alchemy or crystal growth was found. There is no verified demonstration of seeding a supersaturated solution. No exhibition runs in 2027. # Part III — Routes

21. A route through the Netherlands

Eight of the seventeen open places can be met within a day's travel of Leiden. They make a route of four days.

Day 1 — Leiden and The Hague: light, order and the self-reading form.

- *Rijksmuseum Boerhaave, Leiden*. Salomon Coster's pendulum clock of 1657, built to Huygens's design. It stands for two chapters: agreement without a master (19) and constants that differ by place (14). The temporary exhibition *Truth? The art of doubt* runs to 3 January 2027. Phone ahead to confirm the clock is on display.
- *Hoogheemraadschap van Rijnland, Leiden*. The oldest water authority in the Netherlands, from 1248. A resource as a fit, governed for eight centuries (chapter 12). Public visits to its historic building were not confirmed.
- *Museum Voorlinden, Wassenaar*. Turrell's *Skyspace*, a permanent work (chapter 4).
- *Escher in Het Paleis, Lange Voorhout, The Hague*. *Drawing Hands* and 130 other works, Tuesday to Sunday (chapter 6).
- *Hemels Gewelf, Kijkduin*. Turrell's crater in the dunes. Best at the end of the day, lying on the bench as the sky darkens (chapter 4).

Day 2 — Voorburg and Delft: clocks and circulation.

- *Hofwijck, Voorburg*. The house where Christiaan Huygens lived and worked. Thursday to Sunday afternoons (chapter 19).

- *Strandbeesten Mortuary, Museum Prinsenhof Delft*. Theo Jansen's retired wind-walkers, Thursday and Sunday afternoons, free (chapter 16).

Day 3 — Amsterdam: selection and sound.

- *Embassy of the Free Mind, Keizersgracht 123*. Europe's main library of hermetic and alchemical texts. *Nada Brahma: The Universe Is Sound* runs from 21 October 2026 to 15 January 2027, and *C. G. Jung: From Psyche to Gnosis* to 28 December 2026 (chapters 19 and 20).
- *Stedelijk Museum*. The first version of Nam June Paik's *TV Buddha* (1974) is in the collection. Its display was not confirmed (chapter 6).

Day 4 — Drenthe: the past in the present shape.

- *Hunebedcentrum, Borger*. The largest hunebed in the Netherlands. A guided walk on the boulders on 22 October 2026, a lecture on lost hunebeds on 12 November, a night of small lights on 19 December (chapter 11).

On the way. On 27 October 2026 a session on vortices in water technology at the European Water Tech Week in Leeuwarden includes Jörg Schauburger (chapter 13). On 24 and 25 October 2026 *The Desert Music* by Steve Reich is sung in Middelburg and Nijmegen (chapter 19).

22. A calendar from October 2026

The full calendar, with dates, venues and chapters, is printed after Appendix A. The highlights by month follow.

October 2026. *Nada Brahma* opens in Amsterdam (21 Oct). Hunebed walk in Borger (22 Oct). *Seizure* reopens at Yorkshire Sculpture Park (from 24 Oct). Reich's *The Desert Music* in Middelburg and Nijmegen (24–25 Oct). Vortex session in Leeuwarden (27 Oct). *Clapping Music* at the Barbican (28 Oct). Lascaux IV anniversary visits (29–30 Oct). Chen Xiaowang in Prague (30 Oct–1 Nov). Chartres labyrinth open on Friday afternoons (23 and 30 Oct). Palace Museum calligraphy in Beijing closes (1 Nov).

November 2026. Flavin opens at the Guggenheim Bilbao (12 Nov). “Clapping for Steve Reich” in Paris (12–15 Nov). Chen Xiaowang in Romania (4–7 Nov) and Switzerland (18–23 Nov). Hunebed lecture in Borger (12 Nov). Wardencllyffe tours end (15 Nov).

December 2026. Hunebed night of lights (19 Dec). Newgrange solstice, by lottery. *Seizure* season ends (31 Dec).

January–June 2027. *Victory Over the Sun* closes in Durham (17 Jan). Reich in Munich (16 Jan). *Lettering and Art* in Hokkaido (9 Jan–11 Apr). MoMath Escher closes (8 Feb). Darrot's *Fuzzy Logic* closes in Basel (7 Mar). OERweekend in Borger (27–28 Mar). Flavin closes (4 Apr). MCA Santa Barbara kinetic art closes (1 May). Molnar closes at the V&A (30 May). Fireflies in the Smoky Mountains, by lottery (late May). Mind & Life Summer Research Institute (6–11 June).

Later. Halberstadt sound change (5 Oct 2027). Turrell retrospective in Berlin (3 Sep 2027–2 Jul 2028). Laws of Form conference in Cambridge (7–11 Aug 2028).

23. Further afield

Britain. Yorkshire Sculpture Park for *Seizure* (chapter 20). The V&A for Vera Molnar and, possibly, Cox's Timepiece (chapters 7 and 16). Tate for Haacke, Kenneth Martin and Fontana (chapters 16, 7, 20). The Science Museum, which holds the replica of Fowler's ternary machine (chapter 8). The Royal Society for the Jones wheel (chapter 16). Kielder Skyspace in Northumberland (chapter 4). Bath for the Roman Baths (chapter 15). The Mary Michael Pilgrims Way from Cornwall to Norfolk (chapter 14).

France, Germany, Switzerland, Austria, Czechia. Chauvet 2 and Lascaux IV (chapter 11). Chartres (chapter 14). Unna for Turrell's *Third Breath* (chapter 4). Halberstadt for the 639-year organ (chapter 7). Berlin for Chen taijiquan and, from 2027, Turrell (chapters 15 and 4). Museum Tinguely in Basel (chapter 17). Törbel in the Valais (chapter 12). The Schauburger archive at Bad Ischl, by arrangement (chapter 13). Skyspace Lech (chapter 4). Speculum Alchemiae in Prague (chapter 20).

Southern Europe. The Water Court of Valencia on Thursdays at noon, and the Consejo de Hombres Buenos in Murcia (chapter 12). Delphi (chapter 14). The Guggenheim Bilbao (chapter 4).

Serbia and Turkey. The Nikola Tesla Museum in Belgrade (chapter 13). Göbekli Tepe near Şanlıurfa (chapter 11).

Asia. The Hubei Provincial Museum in Wuhan and the Wudang Mountains (chapters 10 and 15). Louguantai near Xi'an (chapter 10). Chenjiagou in Henan (chapter 15). Ryōan-ji in Kyoto (chapter 18). The subak landscape of Bali (chapter 12). The qanats of Gonabad in Iran (chapter 12). The mangrove fireflies of Kuala Selangor (chapter 19). The Palace Museum in Beijing and the Hokkaido Museum of Modern Art (chapter 5).

The Americas. The Laboratory of Tree-Ring Research in Tucson and the bristlecone pines of the White Mountains (chapter 11). Marfa for Irwin (chapter 4). Wardencllyffe on Long Island (chapter 13). The National Gallery of Art and the Hirshhorn in Washington, for Calder, Snelson and Haacke (chapters 17, 18, 16). The Eureka Dunes in Death Valley (chapter 17). The Science History Institute in Philadelphia (chapter 20). The Great Smoky Mountains and Congaree for the fireflies (chapter 19). MoMath in New York (chapter 6). The Garrison Institute (chapter 9).

Ireland. Newgrange (chapter 14). # Part IV — What stays open

24. The empty cells

The search was planned as a grid: seventeen places, five kinds of resource. In 60 of the 85 cells, at least one resource was found that the judges accepted as filling the place. The 25 empty cells are where the unknown is still unknown.

Kind of resource	Places met	Chapters not met
Book	17 of 17	—
Film	13 of 17	7, 8, 16, 20
Work of art or music	9 of 17	7, 9, 10, 11, 12, 13, 14, 15
Exhibition running from October 2026	7 of 17	7, 8, 9, 10, 12, 13, 14, 15, 18, 19
Place to visit	14 of 17	7, 8, 9

A cell counts as met only if the judges rated at least one resource of that kind as more than a weak fit. Chapter 7 shows why this matters: works on chance were found, but they are analogies, not meetings with return and dimension.

Three patterns stand out.

Mathematics has books but no places. Random but bound, one act three values, and the third value are met in papers and books. They are not met in any gallery, film or site that a visitor can enter. The one object that would embody them, a Setun computer or Fowler’s wooden machine, could not be confirmed on display. An exhibition of balanced ternary — the weighing puzzle, Fowler’s machine, Setun, the tihai, *Clapping Music* — does not exist. It could.

Practice has places but no exhibitions. The resource as a fit, care as closing loops and constants by place are met every week: in Valencia on Thursdays, in a Berlin taijiquan class, at Newgrange at the solstice. No museum shows them. They live where they are practised.

Three open places have almost no resource at all.

1. *Where three dimensions come from*, if everything is one-dimensional bound movement. Open in the literature as well.
2. *Two distant structures held in one state*. Every resource found is local coupling: clocks on one beam, metronomes on one board, fireflies in one valley.
3. *A builder’s own statement* that his device worked for him and not for others. The nearest statements are by witnesses and are contested. The strongest documented parallel, Collins’s study of the TEA laser, is about knowledge carried by persons, not about devices that refuse strangers.

These three are not gaps in the search. They are the frontier of the theory.

What would fill them

For the theory, the next register runs are short. The book’s chapters name them:

- a quantity that records order, so that $><$ and $<>$ differ (chapter 8);
- the nine products of the *Taiyi sheng shui* against the nine closing windows, computed before any reading (chapter 10);
- recovering a first orientation from later states (chapter 11);

- softening coupled between neighbours, and a medium held at its tipping point (chapter 17);
- mirror pairs under R (chapter 18);
- lock between rings that do not share sites (chapter 19).

For readers, the empty cells are an invitation. A clapping workshop with *Clapping Music* and a tihai teaches one act and three values in an hour. A visit to the Water Court on a Thursday teaches the resource as a fit in thirty minutes. Two metronomes on a board and two cans teach agreement without a master on a kitchen table.

25. What it means for people

A theory that sounds impossible often sounds that way because of who is left out of it. The fire age removed the person from the apparatus. A result had to hold whoever ran the test. That line made modern technology possible. It also made some knowledge invisible.

The resources in this book show that knowledge is still there, held by people. A calligrapher holds the order of making in the hand. A water judge in Valencia holds centuries of fits in a procedure that is never written down. A Chen master holds the closing of loops in a daily practice. Christiaan Huygens saw agreement without a master in 1665, before there was a word for it.

What these people know is not lost when it is not measured. But it is fragile in another way. It lives in villages, guilds, temples and lineages. When the village empties, the knowledge goes with it. Törbel's commons is studied now because it is eroding. The qanat in *Surviving Fortress* is kept by one man in his seventies and his wife.

The net, if it is right, does not need a long chain of conversions. It needs fits, held by people who know them. Access then depends on understanding, not on owning the land above a deposit. That shifts weight from those who hold stocks to those who hold fits.

Whether such understanding is shared or held is a choice people make. The net does not make it for them.

The four motifs from chapter 1 return here, in human form. The ground is full: what looks like empty tradition is full of working knowledge. The opening is what works: the interval, the empty hub, the silence in which a room is heard. Three is the start: one act, its mirror and their meeting. Return is normal: walking a path backwards does not find an empty past. It finds the stories laid down along it, waiting. # Appendix A — Annotated references, by open place

The entries below follow the chapters of Part II. Within each type, strong-fit items come first. *Fit* is the judges' rating of how closely a resource meets the open place. *Inside* says whether the maker met the thing from inside. Where two judges differed, both ratings are given. An [unconfirmed: ...] tag marks a detail that no checked page confirmed. Contested material is described as its sources describe it, with the contrary sources they name. No therapeutic claims are made.

The net: sources for Part I and the readings in Part II

Konstapel, J. (2026). *The Vacuum.Net Theory: Foundational Paper*. Edition 8, version 8.1. Constable Research, Leiden. <https://constable.blog/2026/10/17/the-vacuum-net-theory-foundationalpaper/>

Why read? — The five axioms, the window register, the unit derivation and the theorems cited in this book (T3, T4, T7, T14, T22).

Reading advice: Part 0 first, then Parts III.4 and VII.2.

Konstapel, J. (2026). “The Way Before the Net: Light, Location and the Oldest Dao as the Ground of the Vacuum.Net.” *constable.blog*, 20 October 2026. <https://constable.blog/2026/10/20/the-way-before-the-net/>

Why read? — The rewriting of the theory from light, the three rules R1–R3, the stroke order of 道 and the *Taiyi sheng shui*. The source of chapters 2, 4, 5, 7, 8 and 10.

Konstapel, J. (2026). *Beyond Energy: The Known and Unknown Possibilities of the Net*. Edition 2, version 2.0. Constable Research, Leiden. <https://constable.blog/2026/10/19/the-possibilities-and-impossibilities-of-the-net/>

Why read? — The fifty cells, the seven register results and the names used in Part II: poised matter, the counter-lock, mirror pairing, the cut, the person in the mesh.

Reading advice: Parts II and III first; Part IV for the combinations.

Konstapel, J. (2026). “Reading the Net: The Highlights and the Reasoning of Beyond Energy.” Version 1.0. Constable Research, Leiden.

Why read? — The four recurring motifs and the cultural echoes, from Indra’s net to Reich and Lem.

Konstapel, J. (2026). “the Paranormal is Normal: The Construction and Deconstruction of a Category.” *constable.blog*, 27 July 2026. <https://constable.blog/2026/07/27/where-the-paranormal-comes-from/>

Why read? — The 58 undeclared commitments behind the word “paranormal”, and the move used in every chapter of this book: examine the line, not the phenomenon. It also collects the sources on the Pauli effect.

Konstapel, J. (2026). “The Respondent-Judge Protocol.” Version 1.0, 17 October 2026. <https://constable.blog/2026/10/17/the-respondent-judge-protocol/>

Why read? — The method behind Appendix B: predict before counting, a judge that holds what the respondent lacks.

Chapter 4 — Light is a location

Books

Dewey B. Larson (1979). *Nothing But Motion* (vol. 1 of the revised *Structure of the Physical Universe*). <https://www.goodreads.com/book/show/3302502> (a catalogue page, not the text)

Why read? — It sets out the Reciprocal System, in which space-time progression is the background. Light is what does not resist that progression, so the photon is carried along by it.

Reading advice: The link is a catalogue page; find the text through a library or the RS2 book service.

Fit: strong · Inside: partly

Dewey B. Larson (1959). *The Structure of the Physical Universe*. https://en.everybodywiki.com/Dewey_Bernard_Larson (bibliography; no full-text URL verified)

Why read? — The first statement of the Reciprocal System, before the 1979 revision. It shows the idea in its original form. Added by the judges.

Fit: strong · Inside: partly

Lawrence Weschler (1982; expanded ed. 2009). *Seeing Is Forgetting the Name of the Thing One Sees*. University of California Press. <https://www.ucpress.edu/books/seeing-is-forgetting-the-name-of-the-thing-one-sees/paper>

Why read? — A book-length conversation with the Light and Space artist Robert Irwin. He describes how his attention moved from objects to the presence of light itself.

Fit: partial · Inside: yes

Chinati Foundation (ed.) (2019). *Robert Irwin: untitled (dawn to dusk)*. Hatje Cantz. <https://www.hatjecantz.com/collections/photography/products/50801-robert-irwin>

Why read? — Photographs of the same rooms across a full year. Light appears as a changing state of one place.

Reading advice: The book is out of print; look for a library or second-hand copy.

Fit: weak to partial · Inside: partly

Articles and texts

Dewey B. Larson (undated; footnotes by B. Peret, 2013). *Outline of the Deductive Development of the Theory of the Universe of Motion*. <https://ia902609.us.archive.org/9/items/the-reciprocal-system-of-theory-collection/Outline%20of%20the%20Deductive%20Development%20of%20the%20Theory%20of%20the%20Univ>

Why read? — The most direct source for this place. Statement 17 says the photon “remains stationary in the dimension of motion”. Statements 18 and 21 say the outward progression carries photons with it.

Reading advice: Go straight to statements 17, 18 and 21.

Fit: strong · Inside: partly

J. M. Boardman (2012). *The Simple Essence of Dewey B. Larson's Reciprocal System of Physics*. Internet Archive, "Reciprocal System of Theory" collection.

<https://ia902609.us.archive.org/9/items/the-reciprocal-system-of-theory-collection/>

The%20Simple%20Essence%20of%20Dewey%20B.

%20Larson%27s%20Reciprocal%20System%20of%20Physics%20%28Boardman%2C%20Jameela%29

· collection: <https://archive.org/details/the-reciprocal-system-of-theory-collection>

Why read? — A short digest of Larson's three volumes. It treats the speed of light as the unit datum, the neutral level from which other motions are measured.

Reading advice: The same collection holds 121 files on the Reciprocal System, added 5 May 2023.

Fit: partial to strong · Inside: no

Reciprocal System Research Society (RS2), Salt Lake City (formerly the International Society of Unified Science, ISUS). <https://reciprocal.systems/> · older site (being deprecated): <https://reciprocalsystem.org/>

Why read? — The living community around Larson's theory. It runs forums and a book service led by Bruce Peret.

Reading advice: Use the newer site; the older one is being deprecated.

Fit: partial · Inside: no [unconfirmed: ISUS founding year 1971]

Films and recordings

Jessica Yu (2015). *James Turrell: You Who Look*. 8 min, score by Jeff Beal.

<https://www.docnyc.net/?p=5606>

Why watch? — A short portrait of Turrell's light works, with Turrell speaking about his own work.

Fit: partial · Inside: partly

Carine Asscher (1995). *Passageways*. 27 min. <https://en.unifrance.org/movie/22906/passageways>

Why watch? — On Roden Crater and Turrell's relation with the Hopi.

Fit: partial · Inside: partly

Exhibitions and events

James Turrell retrospective (3 Sep 2027 - 2 Jul 2028). Berlin; venue given as Neue Nationalgalerie and as Hamburger Bahnhof (Rieckhallen). <https://www.berlin.de/en/tickets/exhibitions/james-turrell-9d8a2015-f808-4b78-bac3-2af2c2a6a1fa/>

Why go? — Billed as the first comprehensive Turrell retrospective in Berlin. It covers six decades of light sculptures and rooms filled with light.

Visiting advice: The source contradicts itself on the venue, so check before going.

Fit: partial · Inside: yes

Natasha Howes, curator (until 17 Jan 2027). *Victory Over the Sun: Encounters with Light. The Light* (former DLI Museum), Aykley Heads, Durham, UK.

<https://www.theartnewspaper.com/2026/08/24/art-centre-launches-in-durham-uk-with-light-themed-works-by-tracey-emin-dan-flavin> · <https://olafureliasson.net/news>

Why go? — A group show of light works by Flavin, Eliasson, Emin, McQueen, Liz West, Chila Burman, Tine Bech and Katrin Hanusch.

Visiting advice: Open until 17 Jan 2027; the start date is given as 22 Aug or 25 Jul 2026.

Fit: partial · Inside: yes

Dan Flavin (12 Nov 2026 - 4 Apr 2027). *Guggenheim Museum Bilbao*. <https://www.iberdrola.com/culture/art-sponsorship-patronage/guggenheim/dan-flavin-exhibition>

Why go? — Fluorescent light used as a fixed object at a fixed site, colouring the architecture. Fixed light is an analogy here, not Larson's light at rest.

Fit: weak to partial · Inside: yes

Olafur Eliasson (shows running in or after Oct 2026). *Various venues*. <https://olafureliasson.net/news>

Why go? — Several shows place light and perception in rooms. *Next Door* (group), Hamburger Bahnhof, Berlin, 9 Oct 2026 – 30 Apr 2027. *Turner: Painting the Sublime* (group, with Eliasson), National Museum of Western Art, Tokyo, 24 Oct 2026 – 21 Feb 2027. *Big Things for Big Rooms*, Hirshhorn Museum, Washington, 21 Nov 2025 – 4 Jul 2027. *Your curious journey*, MCAD Manila, until 15 Nov 2026. *Deep seeing currents*, ARTIS, Amsterdam, 2026.

Visiting advice: Dates differ per venue; check the venue page before going.

Fit: weak · Inside: yes [unconfirmed: exact dates of *Deep seeing currents*]

Places to visit

James Turrell (2016). *Skyspace*. Museum Voorlinden, Wassenaar. <https://www.voorlinden.nl/james-turrell-skyspace/?lang=en>

Why go? — Here the visitor's own perception is the work. The museum says it "can always be seen, except in case of bad weather".

Visiting advice: The museum is open daily; in poor weather the roof closes and a light programme takes over, and the Twilight Experience runs on special occasions only.

Fit: strong · Inside: yes

James Turrell (2005; permanent since 2009). *Third Breath*. Zentrum für Internationale Lichtkunst, Lindenplatz 1, 59423 Unna. https://en.wikipedia.org/wiki/Centre_for_International_Light_Art

Why go? — Two rooms: a camera obscura below and a Sky Space room above, with an opening in the ceiling.

Visiting advice: Opening hours were not confirmed; check before going.

Fit: strong · Inside: yes [unconfirmed: opening hours]

James Turrell (1996). *Hemels Gewelf (Celestial Vault)*. Machiel Vrijenhoeklaan 175, Kijkduin, The Hague. <https://denhaag.com/en/location/12421/james-turrell-celestial-vault> · year: https://en.wikipedia.org/wiki/List_of_James_Turrell_artworks

Why go? — An elliptical crater in the dunes. Lying on the stone bench, the sky becomes a vault resting overhead.

Visiting advice: An open-air dune site; no hours or price are given.

Fit: strong (gap judge) / partial (judge AB) · Inside: yes

James Turrell (2000). *Cat Cairn: the Kielder Skyspace*. Kielder Water and Forest Park, Northumberland, UK. <https://kielderartandarchitecture.visitkielder.com/art-architecture/cat-cairn-the-kielder-skyspace.html>

Why go? — A buried round chamber with an oculus, where the sky sits in the opening by day. A 65-minute light programme runs around sunset.

Visiting advice: Access needs a 45-minute walk or a barrier key; the page gives two start times for the sunset programme, so check.

Fit: partial · Inside: yes

James Turrell. *Skyspace Lech*. Oberlech, Austria, 1,780 m. <https://www.lechzuers.com/en/culture-and-lifestyle/culture/skyspace-lech/tours-and-shuttle-overview>

Why go? — A 50-minute guided tour with a light show at dawn and at dusk.

Visiting advice: €15, plus €10 for the shuttle; the page shows only the summer 2026 programme.

Fit: partial · Inside: yes [unconfirmed: winter 2026-27 dates]

Robert Irwin (2016). *untitled (dawn to dusk)*. Chinati Foundation, Marfa, Texas. <https://chinati.org/robert-irwin-the-chinati-foundation-marfa-texas-opening-saturday-july-23-2016/>

Why go? — A building split into a dark half and a light half. Scrim walls turn opaque or transparent with the daylight.

Visiting advice: The visiting details on the page date from 2016; check current access.

Fit: partial · Inside: yes

James Turrell. *Roden Crater*. Near Flagstaff, Arizona (not open to the public). https://en.wikipedia.org/wiki/Roden_Crater · <https://roden crater.com/support/>

Why go? — Turrell's life work: a volcanic cone shaped into naked-eye observatories. It is still unfinished (NYT, Aug 2025).

Visiting advice: No public visits are listed for 2026; the “Friends of Roden Crater” membership gives updates only.

Fit: partial · *Inside:* yes

Chapter 5 — Identity in the order of making

Books

Jean François Billeter (1990). *The Chinese Art of Writing*. Skira/Rizzoli (French: *L'Art chinois de l'écriture*, 1989; revised as *Essai sur l'art chinois de l'écriture et ses fondements*, Allia, 2010). Review: Simon Leys, NYRB, 18 Apr 1996, <https://www.chinafile.com/library/nyrb-china-archive/one-more-art> · <https://www.letemps.ch/culture/paradigme-vivant-jean-francois-billeter>

Why read? — It grounds calligraphy in the movement of the body. Leys quotes Billeter: “the fixed order of the strokes” makes calligraphy “a visible music”.

Reading advice: The Leys review is a short way in before the book.

Fit: strong · *Inside:* partly [unconfirmed: Billeter’s own brush practice]

Chiang Yee (1938; 3rd ed. 1973). *Chinese Calligraphy: An Introduction to Its Aesthetic and Technique*. Methuen; Harvard University Press. <https://www-users.york.ac.uk/~ss44/books/pages/c/ChiangYee.htm> · https://en.wikipedia.org/wiki/Chiang_Yee

Why read? — The classic introduction to rhythm, line and stroke structure, by a practising calligrapher and painter.

Reading advice: Wikipedia gives a 1955 Methuen edition; 1938 is the usual first-edition date.

Fit: strong · *Inside:* yes

Jean François Billeter. *Un paradigme*. Allia, 126 pp. <https://www.letemps.ch/culture/paradigme-vivant-jean-francois-billeter>

Why read? — Built on self-observation, it puts the body and “activity” at the centre. Gesture arises through “intégration”: form is made by integrated movement.

Reading advice: A short book of 126 pages, in French.

Fit: partial to strong · *Inside:* yes [unconfirmed: year, probably 2012]

Audrey Yoshiko Seo (2007). *Ensō: Zen Circles of Enlightenment*. Weatherhill; foreword by John Daido Loori. <https://search.worldcat.org/oclc/71329980> · <https://www.shambhala.com/enso-zen-calligraphy/>

Why read? — Each ensō is a stroke “executed in a split second” that carries the painter’s whole practice. It is never corrected once drawn. One stroke here, rather than a stroke order.

Fit: partial · *Inside:* partly

Kazuaki Tanahashi. *Painting Peace and Heart of the Brush* (book and online course). Shambhala. <https://www.shambhala.com/authors/o-t/kazuaki-tanahashi.html> · <https://dailygood.org/2022/06/26/we-all-have-a-brush>

Why read? — A practising brush artist known for one-stroke circles. The course teaches the act itself.

Reading advice: The online course costs \$63.

Fit: partial · Inside: yes [unconfirmed: 2018 for *Painting Peace*]

Articles and texts

Taiwan Ministry of Education. 國字標準字體筆順學習網 (standard stroke-order learning site). <https://stroke-order.learningweb.moe.edu.tw/>

Why read? — The normative stroke order, with animations, for 6,063 characters, including 道. The order of making can be watched stroke by stroke. Added by the judges.

Reading advice: Search for 道 to see its stroke order animated.

Fit: strong · Inside: no

Jean François Billeter and Simon Leys (20 Jun 1996). *The Calligraphic Spirit*. *New York Review of Books* (letter and reply). <https://www.nybooks.com/articles/1996/06/20/the-calligraphic-spirit/>

Why read? — A short debate on whether calligraphy can be understood from the active body.

Fit: partial · Inside: partly

Kazuaki Tanahashi (Fall 2010). *The Zen Circles of Kazuaki Tanahashi*. *Tricycle* (with a text by Sherry Chayat). <https://tricycle.org/magazine/zen-circles-kazuaki-tanahashi/>

Why read? — The circle as one moment that holds past and future.

Reading advice: The article is paywalled.

Fit: partial · Inside: yes

Films and recordings

Raymond Olson / Sacred Mountain Productions (2015; recorded 1998). *Chinese Calligraphy, a Dance on Paper: The Art of Professor Yang Xin* (DVD). <https://www.asianstudies.org/publications/ea/archives/chinese-calligraphy-a-dance-on-paper-the-art-of-professor-yang-xin/>

Why watch? — Writing seen as a sequence. Yang Xin, in his seventies, prepares his ink and writes 馬 and 蘭 live.

Fit: strong · Inside: yes

Centre Productions (1985). *Brush Dance*. 16 mm, 21 min. New York Public Library. <https://16mmfilmography.org/film/brush-dance/>

Why watch? — Xiao Keijia demonstrates cursive script and teaches beginners the basic strokes.

Viewing advice: A 16 mm print held by the New York Public Library.

Fit: partial · Inside: yes

Fan Wu, producer (2012). *Solitary Joy*. 67 min. <https://pro.imdb.com/title/tt2611084>

Why watch? — Follows the calligrapher Tong Yang-tze's brushwork and creative process over several years.

Fit: partial · Inside: yes

Thomas Riedelsheimer (2001). *Rivers and Tides: Andy Goldsworthy Working with Time*. 90 min. <https://movingimage.nls.uk/film/6162>

Why watch? — An artist whose works exist only as the making, done by hand with stone, ice and leaves. See also Chapter 17.

Fit: weak to partial · Inside: yes

Art and music

Richard Serra (1967). *Verb List*. Museum of Modern Art, New York. <https://www.moma.org/collection/works/152793> · <https://lithub.com/richard-serras-verb-list-is-both-art-and-to-do-list/>

Why look? — The work is the sequence of acts: 84 infinitives (“to roll, to fold ...”) ending with “to continue”.

Fit: strong · Inside: yes

Exhibitions and events

Palace Museum, Beijing (1 Sep - 1 Nov 2026). *Defining the Classics: A Journey to Tang and Song Calligraphy and Paintings*. Hall of Literary Brilliance (Wenhua Dian). https://english.beijing.gov.cn/latest/news/202608/t20260830_4842877.html

Why go? — Original Tang and Song calligraphy, such as Du Mu's *Zhang Haohao Poem*. The stroke order can be read in the ink.

Visiting advice: The Song phase runs 30 Sep - 1 Nov; only 11 days remain after 21 Oct.

Fit: partial · Inside: yes

Hokkaido Museum of Modern Art (9 Jan - 11 Apr 2027). *Lettering and Art: from Pop Art to Calligraphy*. Gallery B. <https://artmuseum.pref.hokkaido.lg.jp/knb/english/exhibition/program/336>

Why go? — Calligraphic expression shown next to contemporary letter-based art.

Visiting advice: The dates are marked tentative; check before travelling.

Fit: weak · Inside: partly

Chapter 6 — The form reads itself

Books

George Spencer-Brown (1969). *Laws of Form*. George Allen and Unwin; German edition *Gesetze der Form*, Bohmeier, 1997. https://en.wikipedia.org/wiki/Laws_of_Form · https://en.wikipedia.org/wiki/G._Spencer-Brown

Why read? — Chapter 11 brings in equations that re-enter their own form. They oscillate and give an “imaginary” value, which brings time into the calculus.

Reading advice: Start with chapter 11.

Fit: strong · Inside: partly [unconfirmed: a “fifth international edition, Bohmeier 2008”; the source lists a 2014 Rev. 6]

Heinz von Foerster (1976). *Objects: tokens for (eigen-)behaviors*. Reprinted in *Understanding Understanding*, Springer, 2002/2003. Cited in Kauffman, <https://arxiv.org/pdf/1109.1892> · author: https://en.wikipedia.org/wiki/Heinz_von_Foerster

Why read? — The founding text on eigen-behaviours, from which Kauffman’s eigenform comes.

Fit: strong · Inside: no

Douglas Hofstadter (1979). *Gödel, Escher, Bach*. Basic Books. https://en.wikipedia.org/wiki/G%C3%B6del,_Escher,_Bach

Why read? — Introduces the “strange loop” and discusses Escher’s *Drawing Hands* directly.

Fit: partial · Inside: partly

Douglas Hofstadter (2007). *I Am a Strange Loop*. Basic Books. https://en.wikipedia.org/wiki/I_Am_a_Strange_Loop

Why read? — The “I” as a loop that perceives itself, with no observer outside it. It draws on Hofstadter’s own life.

Fit: partial · Inside: partly

Articles and texts

Louis H. Kauffman (2005). *EigenForm*. *Kybernetes* 34(1/2): 129-150. <https://homepages.math.uic.edu/~kauffman/Eigen.pdf>

Why read? — An eigenform is a fixed point, $J = F(J)$. Section 4 states that “every recursion has a fixed point”.

Reading advice: Sections 2–3 and the epilogue are readable without much mathematics.

Fit: strong · Inside: no

Louis H. Kauffman (2003). *Eigenforms - Objects as Tokens for Eigenbehaviors. Cybernetics and Human Knowing* 10(3-4). <https://www.ingentaconnect.com/contentone/imp/chk/2003/00000010/f0020003/art00006;jsessionid=btd7b97m5om4.x-ic-live-03>

Why read? — Objects are tokens of the organism’s own stable behaviours, so map and territory join.

Fit: strong · Inside: no

Louis H. Kauffman (2011). *Eigenforms and Quantum Physics*. arXiv: **1109.1892**. <https://arxiv.org/abs/1109.1892>

Why read? — Links von Foerster’s eigenform to the basic principles of physics.

Fit: partial · Inside: no

Louis H. Kauffman. *Box Arithmetic and related Laws of Form* pages. University of Illinois Chicago. Index: <https://homepages.math.uic.edu/~kauffman/> · <https://homepages.math.uic.edu/~kauffman/Arithmetic.htm>

Why read? — A hands-on way into Spencer-Brown’s calculus and re-entry. The reader works the calculus by hand.

Reading advice: The *Self Reference and Recursive Forms* PDF and *FormDynamics.pdf* on the same site returned no readable text.

Fit: partial · Inside: partly

Films and recordings

Robin Lutz (2018). *Escher: Het oneindige zoeken*. 81 min. <https://www.filmfestival.nl/en/film/escher-het-oneindige-zoeken>

Why watch? — Built on Escher’s unpublished letters and diaries, with Escher as “symbolic director”. The artist’s own words carry the film.

Viewing advice: The English title *Journey to Infinity* is not on the cited page.

Fit: strong · Inside: yes

Art and music

M. C. Escher (Jan 1948). *Drawing Hands*. Lithograph, 28.2 × 33.2 cm. https://en.wikipedia.org/wiki/Drawing_Hands · <https://www.escherinhetpaleis.nl/topstuk/drawing-hands/?lang=en> · <https://www.nga.gov/artworks/54237-drawing-hands> · <https://www.artic.edu/artworks/118260/drawing-hands>

Why look? — Two hands, each drawing the other, with no drawer outside the picture.

Viewing advice: The National Gallery of Art lists it “Not on view” and the Art Institute of Chicago “Currently Off View”; Escher in Het Paleis has a highlight page.

Fit: strong · Inside: yes [unconfirmed: on display anywhere in Oct 2026]

Nam June Paik. *TV Buddha*. Versions 1974 (Stedelijk Museum Amsterdam), 1976 (Art Gallery of New South Wales), 2004 (Fogg Museum). https://en.wikipedia.org/wiki/TV_Buddha

Why look? — A Buddha statue watches its own live image on a monitor. The form looks at itself in a closed loop.

Fit: partial · Inside: yes [unconfirmed: Stedelijk display status, Oct 2026]

Exhibitions and events

National Museum of Mathematics (MoMath) (1 Oct 2026 - 8 Feb 2027). *Mathematics and the Art of M. C. Escher*. 635 Sixth Avenue, New York. <https://www.artrabbit.com/events/mathematics-and-the-art-of-mc-escher>

Why go? — Escher’s self-referring structures shown in a mathematics museum.

Fit: partial · Inside: partly

Escher in Het Paleis (10 Jun - 1 Nov 2026). *Escher & Islamic Art: 20 Perspectives*. The Hague. <https://escherinhetpaleis.nl/en/whats-on/exhibitions/escher-and-islamic-art-20-perspectives>

Why go? — The museum’s current temporary show.

Visiting advice: No later exhibition is listed after 1 Nov 2026.

Fit: partial · Inside: yes

Places to visit

Escher in Het Paleis. Lange Voorhout, The Hague. <https://escherinhetpaleis.nl/en/> · hours: <https://www.escherinhetpaleis.nl/visit/opening-hours/?lang=en> · <https://denhaag.com/nl/agenda/escher-in-het-paleis-permanente-collectie>

Why go? — A permanent exhibition of 130 Escher works plus rotating prints. The self-drawing image can be met in the original medium.

Visiting advice: Tue–Sun 11:00–17:00, closed 25 Dec and 1 Jan 2027; tickets €8–14.50.

Fit: strong (gap judge) / partial (judge AB) · Inside: yes

Chapter 7 — Random, but bound

Books

Peter G. Doyle and J. Laurie Snell (1984). *Random Walks and Electric Networks*. Mathematical Association of America; arXiv math/0001057 (2000). <https://arxiv.org/abs/math/0001057>

Why read? — A popular, free account that proves Pólya's theorem through electrical resistance. Added by the judges.

Reading advice: Free on arXiv; the abstract does not name Pólya, but the proof is there.

Fit: strong · Inside: no

John Cage (1961). *Silence: Lectures and Writings*. Wesleyan University Press. https://en.wikipedia.org/wiki/Silence:_Lectures_and_Writings

Why read? — Cage's texts from the years he moved into chance composition.

Reading advice: Start with "Lecture on Nothing" and "Indeterminacy"; a 50th-anniversary edition exists.

Fit: weak · Inside: yes

Leonard Mlodinow (2008). *The Drunkard's Walk: How Randomness Rules Our Lives*. Pantheon. https://en.wikipedia.org/wiki/The_Drunkard%27s_Walk

Why read? — A non-technical book on random walks and on how readers misjudge chance. It does not treat return versus dimension.

Fit: weak · Inside: no

Articles and texts

George Pólya (1921). *Über eine Aufgabe der Wahrscheinlichkeitsrechnung betreffend die Irrfahrt im Straßennetz*. *Mathematische Annalen* 84: 149-160. <https://link.springer.com/article/10.1007/BF01458701>

Why read? — The original theorem. A random walk on a grid returns with certainty in one and two dimensions, but not in three. Added by the judges.

Fit: strong · Inside: no

Wolfram MathWorld. *Pólya's Random Walk Constants*. <https://mathworld.wolfram.com/PolyasRandomWalkConstants.html>

Why read? — Gives the 3-D return probability $p(3) = 0.3405373\dots$, with the later exact evaluations (Watson 1939, McCrea-Whipple 1940, Glasser-Zucker 1977). Added by the judges.

Fit: strong · Inside: no

Scientific American (author and date not shown). *This mathematician proved a brilliant theorem to justify his social awkwardness*. <https://www.scientificamerican.com/article/this-mathematician-proved-the-random-walk-theorem-to-clear-his-name-as-a/>

Why read? — An accessible account: the theorem grew out of Pólya's own repeated walks near Zurich. In 3-D there is "a nearly 66 percent chance of never returning", so about 34% return.

Reading advice: Look for Kakutani's line that "a drunk bird may get lost forever".

Fit: strong · Inside: partly

Jonathan Novak (c. 2013). *Pólya's Random Walk Theorem*. arXiv 1301.3916.
<https://ar5iv.org/html/1301.3916>

Why read? — A short proof that the walk is recurrent for $d \leq 2$ and transient for $d \geq 3$. It does not give the value 0.34.

Fit: strong · Inside: no

Hindy Drillick (spring 2022). *Random Walks and the Heat Equation (seminar page)*. Columbia University. <https://www.math.columbia.edu/~hdrillick/teaching/spring22.html>

Why read? — States recurrence in 1-D and 2-D and transience in 3-D, and links it to Brownian motion and heat.

Reading advice: The main text is Lawler, *Random Walk and the Heat Equation*.

Fit: partial · Inside: no

Philip Pearle, Kenneth Bart, David Bilderback, Brian Collett, Dara Newman, Scott Samuels (c. 2010). *What Brown saw and you can too*. arXiv 1008.0039.
<https://ar5iv.labs.arxiv.org/html/1008.0039>

Why read? — Random motion seen by eye. The paper aims “to enable the reader to perform similar experiments”. Return and dimension are not shown.

Reading advice: The instructions for growing *Clarkia pulchella* and building a ball-lens microscope are in an extended online treatment that the paper points to.

Fit: partial · Inside: yes

Films and recordings

Frank Scheffer (1995). *From Zero*. 70 min, AVRO (production Allegri Film).
<https://www.filmfestival.nl/en/film/from-zero-the-documentary>

Why watch? — Made with Cage’s own method: the first part was edited by chance operations. The second part is *Fourteen*, performed by the Ives Ensemble.

Fit: strong (gap judge) · Inside: yes

Frank Scheffer (2012). *How to Get Out of the Cage: A Year with John Cage*. 55 min. <https://www.filmfestival.nl/en/archive/how-to-get-out-of-the-cage>

Why watch? — Footage from Scheffer’s meetings with Cage, 1982–1992. It includes Ryoan-ji, the stone garden Cage drew by chance procedures. See also Chapter 18.

Fit: weak · Inside: yes

Gabe Bullard (9 Jul 2024). *As Slow As Possible. 99% Invisible*, episode 588 (podcast). <https://99percentinvisible.org/episode/588-as-slow-as-possible/>

Why watch? — An audio introduction to the Halberstadt organ: sandbag-weighted keys and the visitors who come for the chord changes.

Fit: weak · Inside: partly

Art and music

Kenneth Martin (1971-72). *Chance and Order* series. Tate, London. <https://www.tate.org.uk/art/artworks/martin-chance-and-order-change-6-monastral-blue-t01849> · <https://www.tate.org.uk/art/artworks/martin-chance-and-order-iv-p04588>

Why look? — The titles name the theme: chance acting inside a fixed order. The Tate pages do not describe the method.

Viewing advice: The prints appear to be viewable by appointment in the Prints and Drawings Room at Tate Britain.

Fit: weak to partial · Inside: yes

Ellsworth Kelly (1951-53). *Spectrum Colors Arranged by Chance*. SFMOMA (99.352). <https://www.sfmoma.org/artwork/99.352/>

Why look? — Kelly numbered the colours and let chance place the squares, “to remove the ‘I made this’” (SFMOMA audio transcript).

Viewing advice: Not on view at SFMOMA; VI (1951) at MoMA is also not on view (<https://www.moma.org/collection/works/35484>); VII (1951) is at Glenstone, Potomac MD, free, display status unknown (<https://glenstone.org/artworks/spectrum-colors-arranged-by-chance-vii>).

Fit: weak · Inside: yes

Exhibitions and events

Vera Molnar and others (16 Oct 2026 - 30 May 2027). *Degrees of Disruption: Vera Molnar and Generative Art*. V&A South Kensington, Rooms 88A and 90, Cromwell Road, London SW7 2RL. <https://www.vam.ac.uk/exhibitions/degrees-of-disruption-vera-molnar-and-generative-art> · <https://www.oniris.art/en/news/121/>

Why go? — Molnar set a fixed rule and let a controlled amount of disorder act on it, as in *(Des)Ordres* and *Interruptions*. Rule plus chance, as an analogy.

Visiting advice: Free, no booking.

Fit: weak to partial · Inside: yes

Ben Spilling, director; Amber Tordoff-Gibson, producer (Sat 7 Nov 2026, 15:00-16:30). *Generative: A Computer Art Documentary* (special V&A cut), screening with Q&A. V&A South Kensington, Lydia and Manfred Gorvy Lecture Theatre. <https://www.vam.ac.uk/event/91KmkbyV1A/generative-art-documentary-screening-and-q-a-nov-2026>

Why go? — A film on artists who build with rule plus chance, shown alongside the Molnar display.

Visiting advice: Free.

Fit: weak · Inside: partly

Places to visit

John Cage (2001-2640). *ORGAN²/ASLSP*, a 639-year performance.

Burchardikirche, Am Kloster 1, Halberstadt, Germany. Visiting: <https://www.european-traveler.com/?p=22504> · foundation: <https://www.aslsp.org> · chord changes: <https://www.evangelisch.de/inhalte/257840/05-08-2026/john-cages-orgelstuck-beim-letzten-ton-sind-wir-alle-lange-tot>

Why go? — A chance-derived score held as one sustained sound over centuries. It is a sustained line, with no walk or return.

Visiting advice: Hours as of Feb 2025: Tue–Sun, Apr–Oct 11:00–17:00, Nov–Mar 12:00–16:00, free; the next sound change is on 5 Oct 2027.

Fit: weak · Inside: yes

Chapter 8 — One act, three values

Books

Louis H. Kauffman. *Laws of Form: An Exploration in Mathematics and Foundations* (draft PDF). <https://homepages.math.uic.edu/~kauffman/Laws.pdf>

Why read? — Defines I and J as the two time phases of the re-entering mark (TFTF... and FTFT...). That is directly the $><$ versus $<>$ order distinction. It links the oscillation to a third value in Tibetan logic and to autopoiesis.

Reading advice: The link is a draft; a 2006 book under this title is cited on Wikipedia.

Fit: strong · Inside: partly

Articles and texts

Louis H. Kauffman and Francisco J. Varela (1980). *Form dynamics*. *Journal of Social and Biological Structures* 3: 171-206. Citation: <https://www.enolagaia.com/Varela.html>

Why read? — The origin of the two phase-shifted forms I and J, the $><$ versus $<>$ order. Added by the judges.

Reading advice: A UIC PDF exists (<https://homepages.math.uic.edu/~kauffman/FormDynamics.pdf>) but has no machine-readable text.

Fit: strong · Inside: no

Brian Hayes (Nov-Dec 2001). *Third Base*. *American Scientist*. https://web.williams.edu/Mathematics/sjmillier/public_html/105Sp10/addcomments/Hayes_ThirdBase.htm

Why read? — The classic readable essay on balanced ternary ($-1, 0, +1$). It covers the weighing puzzle and the Setun at Moscow State University.

Fit: strong · Inside: no

N. P. Brusentsov, S. P. Maslov, J. Ramil Alvarez, E. A. Zhogolev. *Development of ternary computers at Moscow State University*. Virtual Computer Museum (Russia). <https://computer-museum.ru/english/setun.htm>

Why read? — The builders' own account of Setun (late 1950s) and Setun-70 (1970). It explains why the balanced ternary digit made design simpler, and why production stopped in 1965.

Fit: strong · Inside: yes

Louis H. Kauffman (year not stated). *EigenForm* (slide version). <https://homepages.math.uic.edu/~kauffman/Eigenform.pdf>

Why read? — Self-reference as a fixed point, with DNA strands that rebuild each other, knots, and $J = \sim J$ as a paradox that generates time. The closing slide recalls the first imaginary value as the act of making a distinction.

Fit: strong · Inside: no

John Lilly and Alan Watts, organisers (1973). *The AUM Conference, Esalen, March 1973: transcripts of four sessions (110-page typescript)*. Tapes by Kurt von Meier; transcribed by Clifford Barney. <https://www.kurtvonmeier.com/the-aum-conference>

Why read? — Spencer-Brown speaks in his own voice about *Laws of Form*. A musical piece based on Consequence 1 closed the meeting.

Reading advice: Four sessions over two days, held at a motel near Esalen; 110 pages in all.

Fit: partial to strong · Inside: yes

Great Russian Encyclopedia. «Сетунь» (ЭВМ) (in Russian). <https://bigenc.ru/c/setun-evm-a78047>

Why read? — Setun was the only balanced-ternary computer produced in series: 49 machines from 1962 to 1965, “including the prototype and the exhibition unit”.

Fit: partial · Inside: no

Wikipedia. *Laws of Form*. https://en.wikipedia.org/wiki/Laws_of_Form

Why read? — A summary of Spencer-Brown (1969). In chapter 11, recursive forms oscillate and carry an “imaginary” value, bringing time into the algebra. It lists Varela, von Foerster, Kauffman and Luhmann among those influenced.

Fit: partial · Inside: no

Rajashree Oak (Kathak dancer, Mumbai). *Tihai and its types: Elaborate analysis*. narthaki.com. <https://narthaki.com/info/articles/art427.html> · background: <https://en.wikipedia.org/wiki/Tihai>

Why read? — A phrase is repeated three times at equal intervals so that the third lands on *sam*, the first beat of the cycle. Three equal acts close the cycle: mod-3 closure made audible.

Fit: partial · Inside: yes

The Spencer-Brown Society (lof50.com). <https://lof50.com>

Why read? — A practitioners' community. It offers the journal *Distinction: Journal of Form*, publications, LoF fonts and parsers.

Reading advice: Membership is free; the next conference is LoF28 (see below).

Fit: partial · Inside: partly

Films and recordings

gerubach. Animated score of *Clapping Music*, presented by Classic FM. <https://classicfm.com/artists/steve-reich/guides/clapping-music-visualisation>

Why watch? — Shows the drift out of and back into unison.

Viewing advice: The video title and link are not on the page itself.

Fit: partial · Inside: no

Art and music

Steve Reich (1972). *Clapping Music*. <https://steverreich.com/composition/clapping-music/>

Why look? — One act set against itself. Two performers clap one pattern; one moves “from unison to one beat ahead” step by step until “back in unison”.

Viewing advice: Anyone can try it with two people.

Fit: partial to strong · Inside: yes

Steve Reich (1967). *Piano Phase*. https://en.wikipedia.org/wiki/Piano_Phase

Why look? — Two pianists play the same 12-note pattern. One gradually moves ahead and cycles through every alignment back to unison. Reich found phasing by ear with tape machines. See Chapter 19.

Fit: partial · Inside: yes

Francis Hunger. *The Setun Conspiracy* (installation; research since 2003, staged since 2005; Honorary Mention, Transmediale Berlin 2008), with the book *SETUN. An Inquiry into the Soviet Ternary Computer*, Institut für Buchkunst Leipzig. <https://we-make-money-not-art.com/?p=5875>

Why look? — The only art work found that takes the ternary computer as its subject. It is staged as an office with a queue and rules.

Fit: partial · Inside: partly

Exhibitions and events

Colin Currie Group (28 Oct 2026, 20:00). *Steve Reich at 90*. Barbican Hall, London. Source: Bachtrack; overview <https://www.boosey.com/cr/news/Steve-Reich-at-90-Worldwide-Celebrations-and-Premiere/102858>

Why go? — The group works directly with the composer. The programme includes *Clapping Music*, *Two Pianos*, *Radio Rewrite*, *Double Sextet*, *Quartet* and *In All Your Ways* (London premiere).

Visiting advice: Full Reich listings are under Chapter 19.

Fit: strong · Inside: yes

Spencer-Brown Society (7-11 Aug 2028). *LoF28, international Laws of Form conference*. Wolfson College, Cambridge. <https://lof50.com>

Why go? — A meeting of the practitioners' community around *Laws of Form*.

Visiting advice: Admission was free at earlier editions.

Fit: partial · Inside: partly

Places to visit

Mark Glusker with Pamela Vass and David Hogan (from 1999). Replica of Thomas Fowler's 1840 balanced-ternary calculating machine. Science Museum, London. [https://en.wikipedia.org/wiki/Thomas_Fowler_\(inventor\)](https://en.wikipedia.org/wiki/Thomas_Fowler_(inventor)) · project: <https://mortati.com/glusker/fowler/>

Why go? — A wooden machine that computes in balanced ternary. It was rebuilt from De Morgan's description and presented to Great Torrington Museum in Aug 2000.

Visiting advice: Check whether it is in a gallery or in store; Torrington has only a stained-glass window in the parish church (<https://great-torringtontowncouncil.gov.uk/2017/12/04/who-was-thomas-fowler>).

Fit: strong · Inside: partly [unconfirmed: in a gallery or in store; the location rests on one secondary source]

Setun. Polytechnic Museum, Moscow. Secondary source: <https://serverflow.ru/blog/stati/luchshie-rossiyskie-muzei-kompyuternykh-tekhnologiy-gde-khranitsya-tsifrovaya-istoriya/>

Why go? — The object itself. A blog names Setun among the museum's holdings. Wikipedia (<https://en.wikipedia.org/wiki/Setun>) says the original prototype was destroyed and gives no museum location.

Visiting advice: There is no official museum page; check before going.

Fit: strong · Inside: partly [unconfirmed: whether a machine or parts are on display; no official museum page]

Chapter 9 — The third value

Books

Francisco J. Varela (1979). *Principles of Biological Autonomy*. Elsevier/North-Holland, 306 pp. Citation: <https://www.enolagaia.com/Varela.html>

Why read? — The book-length development of the indicational calculus with the autonomous value. Added by the judges.

Fit: strong · Inside: partly

Nathalie Depraz, Francisco J. Varela, Pierre Vermersch (2003). *On Becoming Aware: A Pragmatics of Experiencing*. John Benjamins (Advances in Consciousness Research 43). <https://lwc1.benjamins.com/catalog/aicr.43.toc>

Why read? — A practical manual for the act of becoming aware, a practice of awareness returning on itself. It covers the basic cycle, sessions, training and wisdom traditions.

Reading advice: The full text is listed as free.

Fit: partial to strong · Inside: yes

Francisco J. Varela, Evan Thompson, Eleanor Rosch (1991; revised paperback 2017). *The Embodied Mind: Cognitive Science and Human Experience*. MIT Press. <https://mitpressbookstore.mit.edu/book/9780262529365>

Why read? — Connects Buddhist mindfulness with cognitive science through “enaction”: a world is brought forth through embodied action.

Fit: partial · Inside: yes

Francisco J. Varela (ed.) (1997). *Sleeping, Dreaming, and Dying: An Exploration of Consciousness with the Dalai Lama*. Wisdom Publications. <https://www.mindandlife.org/books/sleeping-dreaming-dying/>

Why read? — A Mind & Life dialogue on lucid dreaming, near-death and the structure of consciousness.

Fit: weak to partial · Inside: yes

Evan Thompson (2014). *Waking, Dreaming, Being: Self and Consciousness in Neuroscience, Meditation, and Philosophy*. Columbia University Press. <https://publishersweekly.com/978-0-231-13709-6>

Why read? — The Varela line continued by his co-author. It combines first-person accounts with neuroscience.

Fit: weak to partial · Inside: partly

Articles and texts

Francisco J. Varela (1975). *A Calculus for Self-Reference*. *International Journal of General Systems* 2(1): 5-24. Record: <https://www.bibsonomy.org/bibtex/b5efd87efa05b2a96152f5c9dbc668df>

Why read? — The primary text. It extends Spencer-Brown’s calculus with a third, autonomous value for self-reference.

Reading advice: Only the citation record was checked; obtain the paper through a library.

Fit: strong · Inside: partly

Louis H. Kauffman (2017). *Mathematical Work of Francisco Varela*.

***Constructivist Foundations* 13(1).** <https://api.philpapers.org/rec/KAUMWO>

Why read? — Argues that autonomy can be built inside a reflexive domain, with eigenforms. In Varela's calculus it is assumed at the base instead.

Fit: strong · Inside: no

Rudolf Kaehr (1990). *Kalküle für Selbstreferentialität oder Selbstreferentielle*

***Kalküle?*. Universität Dortmund.** https://www.vordenker.de/rk/rk_Kalkuele-der-Selbstreferentialitaet_1990.pdf

Why read? — A critique aimed exactly at the third value. It argues that Varela's extended calculus tends "zu domestizieren" the paradox, and proposes building self-reference into the calculus itself.

Reading advice: In German; it draws on Günther's polycontextuality.

Fit: strong · Inside: no

Louis H. Kauffman and Francisco J. Varela (1980). *Form dynamics*. *Journal of Social and Biological Structures* 3: 171-206. <https://www.enolagaia.com/Varela.html>

Why read? — The source of the two phase-shifted forms I and J. Full entry under Chapter 8. Added by the judges.

Fit: strong · Inside: no

Ranulph Glanville (2002). *Francisco Varela (1946-2001): A working memory*.

***Cybernetics & Human Knowing* 9(2).** https://ranulphglanville.org.za/wp-content/uploads/2024/12/Francisco-Varela_-a-working-memory.pdf

Why read? — A collaborator's first-hand account of working with Varela, 1977-1981, on distinction, re-entry and the Möbius strip. It confirms that Varela "developed a calculus for self-reference" to ground autopoiesis.

Fit: partial to strong · Inside: yes

Francisco J. Varela (1996). *Neurophenomenology: a methodological remedy for the hard problem*. *Journal of Consciousness Studies* 3; republished in *Avant*

1/2010. <https://avant.edu.pl/en/avant/neurophenomenology-a-methodological-remedy-for-the-hard-problem>

Why read? — The programme that pairs disciplined first-person experience with brain science.

Fit: partial · Inside: partly

Mind & Life Institute. Profile of Francisco J. Varela. <https://www.mindandlife.org/person/francisco-j-varela/> · teachers: https://en.wikipedia.org/wiki/Francisco_Varela

Why read? — Varela co-founded Mind & Life in 1987 with the first dialogue, "Buddhism and the Cognitive Sciences". His teachers Chögyam Trungpa and Tulku Urgyen Rinpoche are named on Wikipedia, not on the profile.

Fit: partial · Inside: yes

Mind & Life Institute. *Francisco J. Varela Research Grants*. <https://www.mindandlife.org/grants/varela-grants/>

Why read? — Grants of up to \$25,000 a year. They prefer projects that use first-person contemplative methods.

Fit: weak · Inside: partly

Films and recordings

Franz Reichle (2004; Tricycle gives 2005). *Monte Grande: What is Life?*. 80 min. <https://swissfilms.ch/en/movie/monte-grande-what-is-life/6EB9AC3C6F0B447F95A0C40F1D165581> · <https://tricycle.org/filmclub/monte-grande/>

Why watch? — Varela narrates his own path: autopoiesis, meditation, consciousness and his dying. The Dalai Lama and Heinz von Foerster also appear.

Viewing advice: The Tricycle film club link needs a subscription.

Fit: partial · Inside: yes

Exhibitions and events

Mind & Life Institute (6-11 Jun 2027). *Summer Research Institute 2027*. Garrison Institute, Garrison, New York. <https://www.mindandlife.org/events/summer-research-institute/>

Why go? — A residential week of research and contemplative practice in Varela's lineage. It includes daily meditation and a full silent day.

Visiting advice: Applications open 1 Dec 2026.

Fit: partial · Inside: yes

Mind & Life Europe (21 Oct - 25 Nov 2026). *Autumn events*. <https://mindandlife-europe.org/events/>

Why go? — A series of dialogues and talks in the Varela line. 21 Oct: Mind Matters Dialogue and book launch with Scott Gilbert and Donna Haraway. 22 Oct: *The Enactive Fold* podcast S4E2. 27 Oct: "Making Room for Contemplation". 29 Oct: talk by Chris Timmermann. 18 Nov: Hyphae Conversations. 25 Nov: talk by Merve Hickok.

Visiting advice: The page does not print the year; the events are listed as 2026, so check before joining.

Fit: partial · Inside: yes

Chapter 10 — Arising by return

Books

Scott Cook (2012). *The Bamboo Texts of Guodian: A Study and Complete Translation*. 2 vols. Cornell East Asia Series. <https://nationalhumanitiescenter.org/?p=54405>

Why read? — A complete annotated English translation of the corpus, by a philologist working from the slips.

Reading advice: Volume I covers the tomb and the manuscripts and translates the “Laozi” and *Taiyi sheng shui*.

Fit: strong · Inside: partly

Sarah Allan (1997). *The Way of Water and Sprouts of Virtue*. SUNY Press.
<https://www.harvard.com/book/9780791433867>

Why read? — Argues that early Chinese thinkers modelled dao, de, xin, xing and qi on water and plants. Water models the cosmic principle; plants model growth and decline.

Fit: strong · Inside: no

Robert G. Henricks (2000; paperback 2005). *Lao Tzu’s Tao Te Ching: A Translation of the Startling New Documents Found at Guodian*. Columbia University Press. <https://parnassusbooks.net/book/9780231118170>

Why read? — The first English translation of the Guodian Laozi. It compares the slips line by line with the Mawangdui and Wang Bi editions.

Fit: partial · Inside: partly [unconfirmed: whether it includes *Taiyi sheng shui*; Wikipedia credits Wen Xing and Henricks with a translation of its opening lines, https://en.wikipedia.org/wiki/Taiyi_Shengshui]

Roger T. Ames and David L. Hall (2003; e-book 2010). *Dao De Jing: Making This Life Significant — A Philosophical Translation*. Ballantine. <https://www.penguinrandomhouse.com/books/3170/dao-de-jing-by-roger-t-ames-and-david-l-hall/9780307755308/>

Why read? — A processual reading in which things arise through relation rather than from substance.

Fit: partial · Inside: no [unconfirmed: inclusion of *Taiyi sheng shui*; the page mentions only “bamboo scrolls” of 1993]

Chen Wei and Li Tianhong (eds.) (Nov 2023). 《金声玉振：郭店楚墓竹简出土三十周年研究文选》. Wuhan University Press. <https://www.rujiazg.com/article/26581>

Why read? — An anthology for the 30th anniversary of the excavation. It gives 731 slips, of which 730 were published in 1998.

Reading advice: In Chinese.

Fit: partial · Inside: partly

Articles and texts

Sarah Allan (2003). *The Great One, Water, and the Laozi: New Light from Guodian*. *T’oung Pao* 89: 237–285. No URL in the catalogue (cited via the PhilPapers/SEP bibliography).

Why read? — The central scholarly reading of *Taiyi sheng shui* itself. Added by the judges.

Fit: strong · Inside: no

Wenlin Institute. Etymology of 道. <https://wenlin.co/wow/道> · supporting: <https://hanzifinder.com/en/char/%E8%A1%9F>

Why read? — The older graphs 衢 and 衢 are “thought to depict a person standing at a 行 ‘crossroads’”, with 止 (foot) marking walking. A scholarly reading, not a certainty.

Fit: strong · Inside: no

Russell Kirkland. *The ‘Laozi’ Debris from Guodian*. University of Georgia (PDF). <https://www.religion.uga.edu/sites/default/files/inline-files/guodian.pdf>

Why read? — Charts comparing the slips with the received text, and a review of Henricks (2000). *Taiyi sheng shui* appears only through Cui Renyi’s arrangement.

Fit: partial · Inside: no

Films and recordings

Ulla Fels (2005). *Der Meister von Wudangshan - Innere Kampfkünste und Daoismus in China*. 52 min, Germany. <https://archiv.mountainfilm.com/en/2012/film/266/>

Why watch? — Follows master Tian Liyang at Wudang, the original home of Taijiquan, practising the Wudang style.

Fit: partial · Inside: yes

Monarex (2009). *Holy Mountain (episode 5 of Mysterious China)*. <https://monarex.com/posts/holymountain.html>

Why watch? — Wudang from Laozi to Zhang Sanfeng, the Ming Golden Palace, and pilgrims who still make the kowtow ascent.

Fit: weak · Inside: partly

Places to visit

Jingmen Museum, excavators (1993). *Taiyi sheng shui slips (太一生水)*, Guodian Tomb M1. Collection page, Hubei Provincial Museum. <https://www.hbww.org.cn/bambooslips/p/11901.html>

Why go? — The artefact itself: a Warring States text on the origin of the universe. The slips are 17.6–25.7 cm long and were first housed in the Jingmen Museum.

Visiting advice: Display status is not confirmed; ask the museum before going.

Fit: strong · Inside: partly [unconfirmed: display status]

Hubei Provincial Museum, Wuhan. Permanent display “Writing history”. <https://m-www.hbww.org.cn/p/5196.html> · https://en.wikipedia.org/wiki/Bamboo_Texts_of_Guodian

Why go? — One display runs from oracle bone through bronze to bamboo and silk. Item 5 is the Guodian group: Chu tomb No. 1, rescue excavation 1993, more than 700 slips.

Fit: partial · Inside: no [unconfirmed: whether the *Taiyi sheng shui* slips are in a case on a given date]

Ancient Building Complex in the Wudang Mountains (UNESCO 1994). Hubei. <https://whc.unesco.org/en/list/705>

Why go? — Daoist palaces and temples from the Yuan, Ming and Qing, some structures from the 7th century. A living practice community, in the same province as Guodian. See also Chapter 15.

Fit: partial · Inside: yes

Louguantai. Zhouzhi county, Shaanxi, about 70 km west of Xi'an. <https://en.wikipedia.org/wiki/Louguantai> · tour: <https://www.chinaxiantour.com/xian-tours/1-day-taoist-culture-tour.html>

Why go? — An active temple, by tradition the place where Laozi composed the *Tao Te Ching*. The hall count and meditation caves come from a commercial tour page only.

Visiting advice: Day tours run from Xi'an.

Fit: weak · Inside: partly

Chapter 11 — The past in the present shape

Books

Oliver Rackham (1986; paperback 2020). *The History of the Countryside*. Weidenfeld/Orion. <https://www.hachette.co.nz/oliver-rackham/the-history-of-the-countryside> · https://en.wikipedia.org/wiki/Oliver_Rackham

Why read? — Decades of field survey on foot. Fields, hedgerows, woods, fens and heaths record the people, climate and soils that shaped them.

Reading advice: The concept of “ancient woodland” is set out in his *Ancient Woodland* (1980).

Fit: strong · Inside: yes

Valerie Trouet (2020). *Tree Story: The History of the World Written in Rings*. Johns Hopkins University Press. No URL in the catalogue (existence confirmed via an LTRR page and a WMO review).

Why read? — History told from tree rings, by a field dendrochronologist formerly at the Tucson lab.

Fit: strong · Inside: yes [unconfirmed: current affiliation]

Lynne Kelly (2016; US ed. Pegasus 2017). *The Memory Code*. No URL in the catalogue (Publishers Weekly cited by the judge).

Why read? — Monuments read as memory devices for oral cultures. “Kelly describes her own use of these techniques”. Added by the judges.

Fit: strong · Inside: yes

Patrick Nunn (2018; US Jan 2019). *The Edge of Memory*. Bloomsbury Sigma. No URL in the catalogue (Kirkus cited by the judge).

Why read? — Stories that carry post-glacial sea-level rise across thousands of years. Added by the judges.

Fit: strong · Inside: partly

Tim Ingold (2000). *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. Routledge. <https://discoveranthropology.org.uk/resources/the-perception-of-the-environment-essays-on-livelihood-dwelling-and-skill-2000-by-tim-ingold/>

Why read? — Skills grow through practice within an environment. The landscape is the record of the dwelling that formed it.

Fit: strong · Inside: partly [unconfirmed on the cited page: the essay “The temporality of the landscape” and the publisher]

Tim Ingold (2007; Routledge Classics 2016). *Lines: A Brief History*. Routledge. <https://www.foyles.co.uk/book/lines/tim-ingold/9781138640399>

Why read? — Walking, weaving, storytelling and writing all unfold along lines.

Reading advice: More than 70 illustrations.

Fit: strong · Inside: partly

Articles and texts

Wikipedia. *Dendrochronology*. <https://en.wikipedia.org/wiki/Dendrochronology>

Why read? — The cross-dating method. The Hohenheim oak-pine chronology runs 12,460 years and the bristlecone chronology about 8,500 years.

Fit: partial · Inside: no

Films and recordings

Werner Herzog (2010). *Cave of Forgotten Dreams*. 89-90 min, 3D. <https://www.premiersplans.org/en/film/cave-of-forgotten-dreams> · https://en.wikipedia.org/wiki/Cave_of_Forgotten_Dreams

Why watch? — Filmed inside Chauvet with special access and a four-person crew. The camera follows the rock relief the painters used as form.

Viewing advice: Per Wikipedia, a 6K restoration premiered at Telluride in Sep 2025, with IMAX screenings in Apr 2026.

Fit: partial · Inside: partly

Exhibitions and events

National Museum of Scotland (27 Jun 2026 - 16 May 2027). *Scotland's First Warriors*. Chambers Street, Edinburgh. <https://edinburgh.org/event/scotlands-first-warriors/>

Why go? — Prehistoric finds read for what they say about past life.

Visiting advice: Free.

Fit: weak · *Inside:* no

Lakeside Arts / University of Nottingham Museum (24 Jul 2026 - 10 Jan 2027). *Prehistoric Lives in the Trent Valley*. University Park, Nottingham NG7 2RD. <https://www.englishlocalhistory.org/wp/2026/08/25/prehistoric-lives-in-the-trent-valley-exhibition/>

Why go? — A river valley read back through its finds, from a university excavation archive.

Visiting advice: Thu–Sun 12:00–16:00.

Fit: weak · *Inside:* partly

Museum für Urgeschichte(n) (8 Jul 2026 - 1 Mar 2028). *Journey into the Past*. Hofstrasse 15, Zug, Switzerland. <https://www.myswitzerland.com/en-us/experiences/events/a-journey-into-the-past/>

Why go? — A walk backward in time through local prehistory.

Visiting advice: Wed 14–17, Sun 10–17.

Fit: weak · *Inside:* no

Stein.Zeit Museum (season 1 Apr - 25 Oct 2026). Stift Rein, Styria, Austria. https://www.steiermark.com/en/Region-Graz/Vacation-planning/Events/Exhibition-Stone-Age-Museum_ed_83284112

Why go? — A Stone Age museum.

Visiting advice: The season ends days after 21 Oct and the page has conflicting dates; check before going.

Fit: weak · *Inside:* no

Places to visit

Göbekli Tepe (UNESCO 2018). Şanlıurfa, Turkey. <https://whc.unesco.org/en/list/1572> · <https://www.gzt.com/tarih/gobeklitepe-44-milyon-ziyaretciyi-agirladi-4237547> · <https://www.hurriyetdailynews.com/amp/gobeklitepe-to-boost-visitor-capacity-with-new-investments-216652> · <https://www.cnnturk.com/turkiye/gobeklitepede-yeni-kazi-alani-ziyarete-aciliyor-2351118>

Why go? — Megalithic enclosures built by hunter-gatherers about 9600–8200 BCE, with T-pillars up to 5.5 m. Field archaeologists still work there under the Taş Tepeler project.

Visiting advice: More than 320,000 visitors came in the first half of 2026; a new welcome centre about 2.5 km below the site was expected to open in 2026.

Fit: strong · Inside: partly [unconfirmed: opening hours 08:00–19:00]

Hunebedcentrum. Borger, Drenthe, beside D27, the largest hunebed. <https://www.hunebedcentrum.eu/> · https://en.wikipedia.org/wiki/Borger,_Netherlands

Why go? — The largest hunebed: 22.5 m, 9 capstones and 26 side stones, with a museum since 2005. The programme reads the stones and the land back into the past.

Visiting advice: Programme: *OERbotanie*, 28 Sep – 1 Nov 2026; walk “Leven met stenen”, 22 Oct, 13–15h; stone and fossil clinic, 11 Nov; lecture by Willem Donker, 12 Nov, 19–22h; “Lichtjesavond”, 19 Dec, 19–21h; OERweekend, 27–28 Mar and 31 Jul – 1 Aug 2027.

Fit: strong · Inside: partly

Laboratory of Tree-Ring Research, University of Arizona. Bryant Bannister Tree-Ring Building, 1215 E. Lowell St., Tucson. <https://ltrr.arizona.edu/> · tours: <https://ltrr.arizona.edu/docents>

Why go? — Working dendrochronologists, in the lab founded in 1937 by A. E. Douglass, who originated tree-ring dating.

Visiting advice: Docent tours by reservation (outreach@ltrr.arizona.edu, 520-621-0984); Tree-Ring Talks run online.

Fit: strong · Inside: yes

Ancient Bristlecone Pine Forest. White Mountains, California. https://en.wikipedia.org/wiki/Ancient_Bristlecone_Pine_Forest · <https://www.fs.usda.gov/r05/inyo/recreation/ancient-bristlecone-pine-forest>

Why go? — Trees that carry nearly five thousand years in their shape. Methuselah is 4,857 years old and deliberately unmarked.

Visiting advice: The Methuselah Grove loop is 7.2 km from a trailhead at 3,001 m; the visitor centre is closed for winter as of 15 Oct 2026, though roads and trails stay open.

Fit: strong · Inside: partly

Grotte Chauvet 2 - Ardèche. Vallon-Pont-d’Arc (replica opened 25 Apr 2015). <https://www.dromeprovencale.fr/en/patrimoine-culturel/grotte-chauvet-2-ardeche/> · <https://en.ardeche-guide.com/events/exposition-grotte-chauvet-laventure-scientifique-7517746/>

Why go? — A full-size replica built by reading the cave’s shape. The original cave was found on 18 Dec 1994. The current exhibition is “Grotte Chauvet, l’Aventure Scientifique”.

Visiting advice: Open daily from 9:30 (17 Oct – 1 Nov 2026) and from 10:30 (2 Nov 2026 – 3 Jan 2027); closing times differ by source, so check with the venue.

Fit: partial · Inside: partly

Lascaux IV, International Centre for Cave Art. Montignac, Dordogne. <https://www.lascaux-dordogne.com/en/a-voir-a-faire/decouvrir/les-grottes/lascaux/visite-de-lascaux-horaires-et-tarifs/> · <https://www.lascaux-dordogne.com/en/a-voir-a-faire/decouvrir/les-grottes/lascaux/lascaux-iv-fete-ses-10-ans-une-annee-de-celebrations/>

Why go? — The replica of the Lascaux cave, in its 10th-anniversary year.

Visiting advice: Open daily to 3 Jan 2027 (lascaux.fr gives 9:00–19:00); special events on 29 Oct (from €26.90) and 30 Oct 2026 (torchlit visit, from €180).

Fit: partial · Inside: partly

Chapter 12 — A resource is a fit

Books

Elinor Ostrom (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press. <https://www.beyondintractability.org/bksum/ostrom-governing> · <https://www.nobelprize.org/prizes/economic-sciences/2009/ostrom/facts/>

Why read? — Long-enduring commons such as Törbel, Japanese villages, the Spanish huertas and the Philippine zanjeras. It draws on her own field studies of Los Angeles groundwater and irrigation in Nepal.

Reading advice: The Beyond Intractability summary is a short way in.

Fit: strong · Inside: partly

Robert McC. Netting (1981). *Balancing on an Alp: Ecological Change and Continuity in a Swiss Mountain Community*. Cambridge University Press. Via <https://en.wikipedia.org/wiki/T%C3%B6rbel> and [swissinfo](https://www.swissinfo.ch)

Why read? — The ethnography Ostrom built on, from about 1.5 years in Törbel from 1970. It shows how meadows, forest and water channels are fitted to people.

Fit: strong · Inside: yes

J. Stephen Lansing (1991; later ed. 2007/2009). *Priests and Programmers*. Princeton University Press. No URL in the catalogue (Wikipedia cited by the judge).

Why read? — The core text on Bali's water-temple networks. Added by the judges.

Fit: strong · Inside: yes

J. Stephen Lansing (2006; paperback 2012). *Perfect Order: Recognizing Complexity in Bali*. Princeton University Press. <https://press.princeton.edu/node/18786>

Why read? — Water-temple networks coordinate whole watersheds. The book asks whether the order was designed or self-organised, from decades of fieldwork with the priests.

Fit: strong · Inside: yes

Anupam Mishra (1993; 1995). *Aaj Bhi Khare Hain Talaab; Rajasthan Ki Rajat Boondein / The Radiant Raindrops of Rajasthan*; TED talk 2009. No URL in the catalogue (Wikipedia cited by the judge).

Why read? — Field documentation of community-built ponds and water systems, from the people who keep them. A non-Western counterpart to Valencia and Bali. Added by the judges.

Fit: strong · Inside: partly

Anthony Smith (1953). *Blind White Fish in Persia*. [https://en.wikipedia.org/wiki/Anthony_Smith_\(explorer\)](https://en.wikipedia.org/wiki/Anthony_Smith_(explorer))

Why read? — Smith went down into the qanat tunnels on his first expedition. He found a blind fish, later named *Eidinemacheilus smithi*.

Fit: partial · Inside: yes [unconfirmed on the page: year 1953]

Articles and texts

Matthias Schmidt, Universität Augsburg (from 1 Feb 2025). *Erosion of the Commons: Of People and Resources in a Swiss Mountain Village*. <https://www.uni-augsburg.de/en/fakultaet/fai/geo/prof/geohum/politische-okologie/erosion-of-the-commons/>

Why read? — A current research project on the Törbel commons.

Fit: strong · Inside: partly

Càtedra L'Horta de València, Universitat de València. Heritage catalogue: *Tribunal de les Aigües*. <https://www.uv.es/horta-valencia-chair/en/heritage-catalogue/tribunal-de-les-aigues/tribunal-de-les-aigues.html>

Why read? — The history of the Tribunal and its canals, from Rovella to the Reial Sèquia de Montcada.

Reading advice: The sections on mills and aqueducts let a visitor walk the huerta canals.

Fit: partial · Inside: partly

Vereniging voor Waterstaatsgeschiedenis (VWG) (April 2026). Newsletter: 2027 anniversaries. <https://waterstaatsgeschiedenis.nl/docs/nieuwsbrief2026WP58april1504a.pdf>

Why read? — Lists 750 years of the Hoogheemraadschap van de Alblasserwaard, 100 years of the Unie van Waterschappen and 100 years of the Waterloopkundig Laboratorium.

Fit: weak · Inside: partly

Films and recordings

André Singer and J. Stephen Lansing (1989). *The Water Goddess and the Computer*. <https://raifilm.org.uk/admin-films/list/directorNames/Lansing%2C+Steven>

Why watch? — Development threatens a temple-run irrigation system. A biologist and an anthropologist model it on a computer and hand the model to the priests to test.

Fit: strong · Inside: yes

Farshad Fadaian (2021). *Surviving Fortress*. Iran. <https://archive.atieff.org/en/?p=13000>

Why watch? — Morteza, a man in his seventies, and his wife have kept a qanat running for thirty years.

Fit: strong · Inside: yes

Gudie Lawaetz (1988). *El Tribunal de las Aguas (The Water Court)*. <https://tribunaldelasaguas.org/en/133-tribute-to-the-filmmaker-gudie-lawaetz>

Why watch? — A film on the Valencia water court. The Tribunal honoured her posthumously with a bronze millennium medal.

Fit: strong · Inside: partly

El Tribunal de las Aguas (2013). *The Water Court (short)*. <https://thewaterchannel.tv/videos/the-water-court/>

Why watch? — Made by the Tribunal itself: the history of the Water Court of the Vega of Valencia.

Viewing advice: “The Court of Waters” is a second clip on the same site.

Fit: strong · Inside: yes

Exhibitions and events

Vereniging voor Waterstaatsgeschiedenis (autumn 2027). VWG meeting on the St. Elisabeth flood of 1421 and the Reuzenkaart. Dordrecht. <https://waterstaatsgeschiedenis.nl/docs/nieuwsbrief2026WP58april1504a.pdf>

Why go? — A meeting on Dutch water history in the anniversary year 2027.

Visiting advice: No date is fixed yet; follow the VWG newsletter.

Fit: weak · Inside: partly [unconfirmed: date]

Places to visit

Tribunal de las Aguas. Puerta de los Apóstoles, Valencia Cathedral, Plaza de la Virgen, Valencia. <https://tribunaldelasaguas.org/visitas-al-tribunal/> · <https://www.visitvalencia.com/en/what-to-do-valencia/valencian-culture/monuments-in-valencia/water-court> · https://en.wikipedia.org/wiki/Water_Tribunal_of_the_plain_of_Valencia

Why go? — A living water court of working farmers, with an oral procedure and no written record. It serves the irrigation communities of the plain; UNESCO intangible heritage 2009.

Visiting advice: Meets every Thursday at 12:00 (the Wednesday before if Thursday is a holiday), no ticket needed; groups of up to 25 can ask for a guided visit at visitas@tribunaldelasaguas.org.

Fit: strong · Inside: yes

Consejo de Hombres Buenos. Murcia City Hall. https://en.wikipedia.org/wiki/Council_of_Wise_Men_of_the_plain_of_Murcia

Why go? — A second living water court, UNESCO 2009 together with Valencia.

Visiting advice: Public hearings on Thursdays 9:00–12:00.

Fit: strong · Inside: yes

Törbel. Valais, Switzerland. <https://www.swissinfo.ch/ger/schweizer-demokratie/t%C3%B6rbel-und-elinor-ostrom-wie-die-allmendwirtschaft-in-den-schweizer-alpen-weltweites-nobelpreiswissen-wurde/89498863> · <https://en.wikipedia.org/wiki/T%C3%B6rbel> · alp rules: <https://toerbel.ch/files/reglement-der-burgeralpen.pdf>

Why go? — A pasture and water agreement of 1483 that villagers still govern. A Horizon Europe project says the institutions “bis heute funktionieren”.

Visiting advice: The village mill is a heritage site of national significance; the alp rules PDF is the 1989 regulation, amended 2013.

Fit: strong · Inside: yes

Cultural Landscape of Bali Province: the Subak System (UNESCO 2012). <https://whc.unesco.org/en/list/1194> · [https://en.wikipedia.org/wiki/Subak_\(irrigation\)](https://en.wikipedia.org/wiki/Subak_(irrigation))

Why go? — Forests, terraces, canals and water temples kept by water priests and farmers. When the Green Revolution broke the temple schedule, pest outbreaks and losses of up to 50% followed; authority went back to the subaks in 1988.

Visiting advice: UNESCO names five sites, including Catur Angga Batukaru (with Jatiluwih), the Pakerisan watershed and Taman Ayun.

Fit: strong · Inside: yes

The Persian Qanat (UNESCO 2016), including the Qanats of Ghasabeh, Gonabad. <https://whc.unesco.org/en/list/1506> · https://en.wikipedia.org/wiki/Qanats_of_Ghasabeh · <https://en.wikipedia.org/wiki/Qanat>

Why go? — Eleven gravity tunnels tapping aquifers, with a communal management system “still in place”. Water was shared by water clock and turns.

Visiting advice: Ghasabeh (700–500 BCE) is open to the public and still in use.

Fit: strong · Inside: yes

Hoogheemraadschap van Rijnland. Leiden (commissioned 1248; oldest dated document 1255). https://en.wikipedia.org/wiki/Hoogheemraadschap_van_Rijnland

Why go? — Called the oldest water authority in the Netherlands: shared work on dikes, levied by fit rather than ownership.

Fit: partial · Inside: partly [unconfirmed: public visits to the Gemeenlandshuis]

Chapter 13 — The person in the mesh

Books

Michael Polanyi (1958; enlarged ed. 2015). *Personal Knowledge: Towards a Post-Critical Philosophy*. University of Chicago Press. <https://www.press.uchicago.edu/ucp/books/book/chicago/P/bo19722848.html>

Why read? — A working laboratory chemist argues that scientific knowing rests on personal skill, judgment and commitment. It introduces tacit knowledge.

Fit: strong · Inside: yes

Robert Rosenthal (1966; enlarged ed. 1976). *Experimenter Effects in Behavioral Research*. Meredith; Irvington. <https://www.gwern.net/doc/statistics/bias/1976-rosenthal-experimenterexpectancyeffects.pdf>

Why read? — The classic study of how the experimenter's expectation changes results in mainstream psychology.

Fit: strong · Inside: partly

Nikola Tesla (1919). *My Inventions*. Serialised in *Electrical Experimenter*. No URL in the catalogue (Wikipedia and SuperSummary cited by the judge).

Why read? — The builder's own account of building and running devices in his mind before building them. Added by the judges.

Fit: strong · Inside: yes

Kenneth Roberts (1951). *Henry Gross and His Dowsing Rod*. [https://en.wikipedia.org/wiki/Henry_Gross_\(dowser\)](https://en.wikipedia.org/wiki/Henry_Gross_(dowser))

Why read? — Field success set against test failure. Roberts reports Gross locating water across Maine. In tests in the same book, Gross could not tell water jars from sand jars, or coin envelopes from empty ones.

Reading advice: Read with the contrary sources: Martin Gardner, *Fads and Fallacies* (1957), and Vogt and Hyman, *Water Witching U.S.A.* (1959), who attributed the results to ideomotor action and suggestion.

Fit: strong · Inside: partly

T. Henry Moray (1960). *The Sea of Energy in Which the Earth Floats*. Research Institute, Inc., Salt Lake City. https://hatch.kookscience.com/wiki/T._Henry_Moray

Why read? — Moray's own account of a "radiant energy" device said to run without a prime mover. The same page gives contrary sources. A 1940 letter by physicist Orin Tugman reports repeatedly postponed demonstrations; a 1944 Senate hearing excerpt says Moray "unsuccessfully demonstrated" the device many times.

Fit: partial · Inside: yes

Viktor Schauberger, ed./trans. Callum Coats (2001). *Living Energies*. Gill. <https://www.gillbooks.ie/nature/nature/living-energies>

Why read? — Schauberger's work in 22 chapters: water as living, and energy rather than matter as fundamental. It draws on his observation as a forester of water, trees and vortices.

Fit: partial · Inside: partly

Olof Alexandersson (1990). *Living Water: Viktor Schauberger and the Secrets of Natural Energy*. Gateway, Dublin. <https://www.stroom.nl/en/stroom/library/living-water-viktor-schauberger-and-the-secrets-of-natural-energy>

Why read? — How Schauberger learned from fish and the water cycle, and his work on soil fertility.

Reading advice: A readable entry for non-physicists.

Fit: partial · Inside: partly

Viktor Schauberger, ed. Callum Coats (1997/98). *The Water Wizard: The Extraordinary Properties of Natural Water*. Gateway (Eco-Technology vol. 1).

Scan (not fetchable): <https://ia903403.us.archive.org/1/items/callum-coats-viktor-schauberger-the-water-wizard-the-extraordinary-properties-of-natural-water-1997/>

Why read? — Schauberger's own writings on water in English translation.

Fit: partial · Inside: yes [unconfirmed: no publisher or library page checked]

Nikola Tesla; ed. Aleksandar Marinčić and Vojin Popović (1978). *Colorado Springs Notes, 1899-1900*. Nolit, Belgrade, for the Tesla Museum; also a 1999 Zavod za udžbenike edition. https://en.wikipedia.org/wiki/Colorado_Springs_Notes,_1899%E2%80%931900

Why read? — Tesla's lab diary from 1 Jun 1899 to 7 Jan 1900, unaltered, with commentary.

Fit: partial · Inside: yes

Richard Sennett (2008). *The Craftsman*. Yale University Press. [https://en.wikipedia.org/wiki/The_Craftsman_\(book\)](https://en.wikipedia.org/wiki/The_Craftsman_(book))

Why read? — Why craft knowledge lives in the maker's body and practice.

Fit: partial · Inside: partly [unconfirmed on the page: Sennett's training as a cellist]

Clara Bloomfield-Moore (Mrs. Bloomfield H. Moore). *Keely and His Discoveries: Aerial Navigation*. Project Gutenberg #56332. <https://www.gutenberg.org/ebooks/56332>

Why read? — The main contemporary account of Keely, by his patron and eyewitness.

Reading advice: Free on Project Gutenberg.

Fit: partial · Inside: partly [unconfirmed: year 1893; passages on presence-dependence]

Abbé Alexis Mermet (1959). *Principles and Practice of Radiesthesia*. Vincent Stuart, London (English ed. with Mark Clement; French originals 1928 and 1934). https://hatch.kookscience.com/wiki/Alexis_Mermet

Why read? — A practitioner’s dowsing and pendulum manual. The source makes no statement that it worked for him and not for others.

Fit: weak · Inside: yes

Articles and texts

Psi Encyclopedia (Society for Psychical Research). *Sheep-Goat Effect*. <https://psi-encyclopedia.spr.ac.uk/articles/sheep-goat-effect/>

Why read? — Believers (“sheep”) tend to score above chance and disbelievers (“goats”) at or below. The effect was named by Gertrude Schmeidler in the 1940s.

Reading advice: The article notes Schmeidler and McConnell (1973) and meta-analyses by Lawrence (1993) and Storm and Tressoldi (2017).

Fit: strong · Inside: partly

Psi Encyclopedia (SPR). *Experimenter Effects in Psi Research*. <https://psi-encyclopedia.spr.ac.uk/articles/experimenter-effects/>

Why read? — Cases where results depended on who ran the test. In West and Fisk (1953), decks prepared by Fisk scored above chance and West’s at chance. Null results are also listed.

Fit: strong · Inside: partly

Richard Wiseman and Marilyn Schlitz (1997). *Experimenter effects and the remote detection of staring*. *Journal of Parapsychology* 61: 197-207. <https://uhra.herts.ac.uk/handle/2299/2286>

Why read? — Same lab, procedure and participant pool, two experimenters. Schlitz’s participants showed higher skin conductance on stare trials; Wiseman’s did not.

Reading advice: Read with the 2006 follow-up with separated roles, which found no effect.

Fit: strong · Inside: yes

H. M. Collins (1974). *The TEA Set: Tacit Knowledge and Scientific Networks*. *Science Studies*. No URL in the catalogue (Wikipedia “TEA laser” cited by the judge).

Why read? — A laser that could not be built from published sources alone, only through contact with someone who had built one. The closest mainstream parallel to “works for him, not for strangers”. Added by the judges.

Fit: strong · Inside: partly

H. P. Blavatsky (1888). *The Secret Doctrine*, vol. 1, part 3, ch. X “The Coming Force”, section “Inter-Etheric Waves”. <https://www.theosociety.org/pasadena/sd/sd1-3-10.htm>

Why read? — The clearest period statement tying a device to its maker. She writes that “for no one but himself could operate on his ‘machines’”. Contrary source: in 1899 the *Philadelphia Press* reported concealed pressure tubes and hidden belts in Keely’s basement, which the company president denied (https://en.wikipedia.org/wiki/John_Ernst_Worrell_Keely).

Reading advice: The section begins on p. 561; the quoted passages are on p. 562.

Fit: strong (as a period statement) · Inside: no

Wilhelm Reich (Oct 1951). *The Oranur Experiment. Orgone Energy Bulletin, entire issue (159 pp.)*. https://old.wilhelmreichmuseum.org/oranur_experiment.html

Why read? — Reich’s own lab report on effects on the people in the room after a radium needle was placed in an accumulator in January 1951. It concerns effects on the experimenters, not person-dependence.

Reading advice: Available as a bound photocopy.

Fit: partial · Inside: yes

“merlib” online library. Moray material (compiled by others; no citations). <https://merlib.lackluster.org/node/84>

Why read? — It argues against the premise of this place. It says independent investigators took the device apart and restarted it themselves.

Fit: weak · Inside: partly

Films and recordings

PKS (German version 2024; English version announced 18 Nov 2025).

***Schauberger’s Legacy (Schaubergers Vermächtnis)*.** <https://pks.or.at/en/p/english-version-of-new-schauberger-documentary-out-now/> · YouTube: https://www.youtube.com/watch?v=N_58gtKlfsI

Why watch? — Covers Viktor and Walter Schauburger’s ideas on vortex and implosion. It shows present-day engineers applying them to rivers, floodplains, soil and pumps.

Viewing advice: Free on YouTube; makers and length are not stated.

Fit: partial (judge CD) / weak (gap judge) · Inside: partly

Exhibitions and events

European Water Tech Week (27 Oct 2026, 11:20-12:45). *Vortices in water technology: a new frontier*. De Harmonie, Leeuwarden, NL. <https://pks.or.at/en/events/?ec=1>

Why go? — A session with Jörg Schauburger (Schauberger Natur Technik), Garrett Morris (Cuesta La Honda Guild) and Roman Klymenko (Wetsus).

Visiting advice: The session is part of European Water Tech Week, 26–28 Oct 2026.

Fit: partial · Inside: partly

Places to visit

Nikola Tesla Museum. Belgrade. <https://tesla-museum.org/en/about/>

Why go? — It holds Tesla’s original archive (UNESCO Memory of the World) and a permanent exhibition.

Visiting advice: Open Mon 10–18, Tue–Sun 10–20, with guided tours; contact poseta@tesla-museum.org.

Fit: partial · Inside: yes

Wardenclyffe, Tesla Science Center. 5 Randall Road, Shoreham, NY. <https://teslasciencecenter.org/tours/> · <https://riverheadnewsreview.timesreview.com/2026/07/135352/tesla-science-center-to-dedicate-new-visitor-center-after-wardenclyffe-fire/>

Why go? — The site of Tesla’s last laboratory. A new visitor center was dedicated in July 2026 after the 2023 fire.

Visiting advice: Season 20 Mar – 15 Nov 2026; tours Fri–Sun at 9:30 and 13:30, up to 8 people, \$35, booking required (631-886-2632).

Fit: partial · Inside: partly

PKS (Pythagoras Kepler System), Schauberger family archive. Bad Ischl/Engleithen, Upper Austria. <https://pks.or.at/en/> · <https://pks.or.at/?p=187>

Why go? — It holds Viktor Schauberger’s manuscripts, models and prototypes.

Visiting advice: No public hours; visits by arrangement with the family (+43-6132-24814).

Fit: partial · Inside: yes [unconfirmed: founding year c. 1970]

Chapter 14 — Constants that differ by place

Books

Hamish Miller and Paul Broadhurst (1989). *The Sun and the Serpent. Pendragon*. Content: <https://marymichaelpilgrimsWay.org/background/dowsing/>

Why read? — The authors walked and dowsed the St Michael alignment from Cornwall to Norfolk in the 1980s. They reported two lines, “Michael” and “Mary”, winding around the straight course and tied to particular kinds of site.

Fit: strong · Inside: yes [unconfirmed: year and publisher, from judge’s knowledge]

Giorgio Piccardi (1962). *The Chemical Basis of Medical Climatology*. No URL in the catalogue (Piccardi and his 1972 article confirmed on Wikipedia).

Why read? — A chemist’s own precipitation tests that did not repeat the same way at different times, varying with solar activity. Added by the judges.

Fit: strong (partly verified) · Inside: yes [unconfirmed: the 1962 book]

Christian Norberg-Schulz (1979/1980). *Genius Loci: Towards a Phenomenology of Architecture*. Rizzoli, New York. https://en.wikipedia.org/wiki/Christian_Norberg-Schulz

Why read? — The basic work on the “spirit of place”: why a place has its own character that building must answer.

Fit: partial · Inside: partly

Edward Relph (1976). *Place and Placelessness*. Pion, London. https://dro.deakin.edu.au/articles/chapter/Edward_Relph_1976_Place_and_placelessness_London_Pion_156_pp/21032857 (a bibliographic stub)

Why read? — How places lose their identity under standardisation.

Fit: partial · Inside: no

Stephen Skinner. *Feng Shui: The Living Earth Manual*. Tuttle. <https://www.tuttle.co.jp/products/show/isbn:9780804837583/language:en>

Why read? — Feng shui as practised: earth channels, and siting buildings and rooms so they do not block them.

Fit: partial · Inside: partly [unconfirmed: first edition 1982]

Hamish Miller (2007). *Dowsing: A Journey Beyond Our Five Senses*. Wooden Books. <https://www.hoopladigital.com/ebook/Dowsing-Hamish-Miller/17316796>

Why read? — A short guide by a Cornish dowser, with exercises.

Fit: partial · Inside: yes

Rupert Sheldrake (2018). *Science and Spiritual Practices*. Coronet/Hodder. <https://www.abebbooks.com/9781473630093/Science-Spiritual-Practices-Sheldrake-Rupert-1473630096/plp>

Why read? — Seven practices, including one on visiting sacred sites.

Reading advice: Go to the chapter on “pilgrimage and visits to sacred sites”.

Fit: partial · Inside: partly

Articles and texts

J. K. Webb, J. A. King, M. T. Murphy, V. V. Flambaum, R. F. Carswell, M. B. Bainbridge (2011). *Indications of a spatial variation of the fine structure constant*. *Physical Review Letters* 107: 191101; arXiv 1008.3907. No URL beyond the arXiv number.

Why read? — The only entry that touches “constants” literally. A measured but disputed claim, at 4.2σ , that the fine-structure constant differs by direction in the sky. Added by the judges.

Fit: strong · Inside: no

Simon Schaffer. *Late Victorian metrology and its instrumentation: a manufactory of Ohms*. Reprinted in *The Science Studies Reader*, Routledge, 1999, pp. 456–478. No URL in the catalogue.

Why read? — How a “constant” unit was made to hold the same everywhere, through instruments and people. Added by the judges.

Fit: strong · Inside: no [unconfirmed: the original 1992 publication in *Invisible Connections*]

NIST (2010). *NIST Pair of Aluminum Atomic Clocks Reveal Einstein’s Relativity at a Personal Scale* (Chou, Hume, Rosenband and Wineland, *Science*, 24 Sep 2010). <https://www.nist.gov/news-events/news/2010/09/nist-pair-aluminum-atomic-clocks-reveal-einsteins-relativity-personal>

Why read? — Two clocks about 33 cm apart in height run at measurably different rates; the higher one runs faster. Established physics laid over the place.

Fit: partial · Inside: partly

Tim Wogan (19 Feb 2022). *Gravitational time dilation measured on centimetre and millimetre scales in atomic clocks*. *Physics World*. <https://physicsworld.com/a/gravitational-time-dilation-measured-on-centimetre-and-millimetre-scales-in-atomic-clocks>

Why read? — Jun Ye’s team (JILA) saw time run slower at the bottom of a strontium sample about 1 mm tall. Shimon Kolkowitz’s group did not observe dilation (page correction).

Fit: partial · Inside: partly

Scientific American blog (author not named; c. 2011). *The Geoid: Why a map of Earth’s gravity yields a potato-shaped planet*. <https://www.scientificamerican.com/blog/observations/the-geoid-why-a-map-of-earths-gravity-yields-a-potato-shaped-planet/>

Why read? — Gravity varies by region; the geoid departs from the ideal shape by about –100 m to +80 m.

Fit: weak · Inside: no

Films and recordings

George Kachadorian (c. 2003). *Divining Mom*. Review by Brad Slager, Film Threat, 10 May 2003: <https://filmthreat.com/?p=4067>

Why watch? — The director’s mother, a dowser, picks a well site and predicts the depth. Water was struck between the drillers’ estimate and her prediction, which the reviewer calls inconclusive. Contrary voices are in the film: a sceptical civil-engineer father and a James Randi tape of dowsers scoring barely above chance.

Fit: partial · Inside: yes

Adeline Herrou (2018). Ethnographic portrait of a Taoist monk in central China. 72 min. RAI Film. <https://raifilm.org.uk/films/master-feng-taoist-monk-in-china-today>

Why watch? — The monk speaks of feng shui as a site's auspicious quality “which changes with time”. He rebuilds temples and reads oracles.

Viewing advice: The title *Master Feng* appears only in the URL.

Fit: partial · Inside: yes

Werner Herzog (2010). Cave of Forgotten Dreams. https://en.wikipedia.org/wiki/Cave_of_Forgotten_Dreams

Why watch? — A film about a place, Chauvet Cave, that can only be met where it is. Full entry under Chapter 11.

Fit: weak · Inside: partly

Places to visit

Mary Michael Pilgrims Way. Cornwall to Norfolk. <https://marymichaelpilgrimsway.org/background/dowsing/>

Why go? — A long-distance walking route linked to the Michael/Mary line tradition. The page does not say that the path follows the lines.

Fit: partial · Inside: yes

Chartres Cathedral labyrinth (early 13th century). France. <https://assets.atlasobscura.com/places/labyrinth-chartres-cathedral>

Why go? — A labyrinth in the nave floor, just over 42 feet across, that the visitor walks.

Visiting advice: Atlas Obscura reports it is uncovered on Fridays 14:00–17:00 from Lent to 1 November, which leaves 23 and 30 Oct 2026; confirm with the cathedral.

Fit: partial · Inside: yes [unconfirmed: 2026 practice; confirm with the cathedral]

Newgrange (c. 3200 BC). Brú na Bóinne, Co. Meath, Ireland. <https://www.heritageireland.ie/en/east/newgrange>

Why go? — At winter-solstice sunrise, light enters the chamber through the roof-box.

Visiting advice: Access only via the Brú na Bóinne Visitor Centre; only lottery winners are inside at sunrise, and in 2025 the solstice mornings were 19–23 Dec.

Fit: partial · Inside: yes [unconfirmed: lottery closing date; the same window in 2026]

Archaeological Museum and site of Delphi, Greece, with the fault study by J. Z. de Boer, J. R. Hale and J. Chanton (2001), *Geology* 29(8): 707–711. <https://archaeologicalmuseums.culture.gov.gr/en/museum/5df34af3deca5e2d79e8c17a> · summary: <https://en.wikipedia.org/wiki/Pythia>

Why go? — The study found two faults crossing below where the adyton probably stood and proposed rising vapours at that spot. Dissent (Lehoux) is noted on the same Wikipedia page.

Visiting advice: Museum winter hours 1 Nov – 31 Mar, 08:30–15:30.

Fit: partial · Inside: partly

Rijksmuseum Boerhaave. Lange St. Agnietenstraat 10, Leiden: Salomon Coster's pendulum clock, 1657. <https://rijksmuseumboerhaave.nl/en/> · <https://www.guinnessworldrecords.com/world-records/752621-oldest-pendulum-clock>

Why go? — A pendulum's rate depends on local gravity, so this clock marks the historical start of place-bound timekeeping.

Visiting advice: The current exhibition is *Truth? The art of doubt*, to 3 Jan 2027 (see Chapter 19).

Fit: partial · Inside: partly

Chapter 15 — Care as closing loops

No therapeutic claims are made in this section. Where an operator or author makes such claims, they are not repeated.

Books

Mae-Wan Ho (2008). *The Rainbow and the Worm: The Physics of Organisms*. 3rd ed. World Scientific. <https://www-users.york.ac.uk/~ss44/books/pages/h/MaeWanHo.htm>

Why read? — Starts from Schrödinger's *What is Life?* and describes the organism as a coherent, liquid-crystalline whole. It draws on her own biophysics lab work.

Fit: strong · Inside: partly

Aaron Antonovsky (1987). *Unraveling the Mystery of Health: How People Manage Stress and Stay Well*. Jossey-Bass. <https://en.wikipedia.org/wiki/Salutogenesis>

Why read? — Asks why people stay well rather than why they fall ill. It introduces the “sense of coherence”: comprehensibility, manageability and meaningfulness.

Fit: strong · Inside: partly

HeartMath Institute. *Science of the Heart: Exploring the Role of the Heart in Human Performance* (free e-book). <https://www.heartmath.org/research/science-of-the-heart/>

Why read? — Describes heart-rhythm coherence, measured through heart-rate variability, as a physiological state that can be trained. The text uses the institute's own terms.

Reading advice: Free; the year is not stated.

Fit: strong · Inside: partly

John Stevens (1988; republished 2013). *The Marathon Monks of Mount Hiei*. Shambhala. https://en.wikipedia.org/wiki/Mount_Hiei

Why read? — A rhythm sustained over years. It documents kaihōgyō, the 1,000-day walking practice spread over seven years, observed from outside.

Fit: strong · Inside: partly

Leon Glass and Michael C. Mackey (1988). *From Clocks to Chaos: The Rhythms of Life*. Princeton University Press. No URL in the catalogue (Princeton UP cited by the judge).

Why read? — Body rhythms and “dynamical diseases” described as timing faults in feedback loops. Added by the judges.

Fit: strong · Inside: no

Moshé Feldenkrais (1972). *Awareness Through Movement*. No URL in the catalogue (Goodreads cited by the judge).

Why read? — Movement treated as feedback loops between action and attention, by a maker who developed the method in his own body. Added by the judges.

Fit: strong · Inside: yes

James L. Oschman (2015/2016). *Energy Medicine: The Scientific Basis*. 2nd ed. Churchill Livingstone/Elsevier. <https://www.uk.elsevierhealth.com/energy-medicine-9780443067297.html>

Why read? — Reviews research on fields in the body, and on practices from acupuncture to therapeutic touch.

Fit: partial · Inside: partly

Gerald H. Pollack (2013). *The Fourth Phase of Water: Beyond Solid, Liquid, and Vapor*. Ebner & Sons. Review: <https://www.greenspirit.org.uk/bookreviews2/2014/06/27/the-fourth-phase-of-water-beyond-solid-liquid-and-vapor-by-gerald-h-pollack/>

Why read? — Reports his own lab’s “exclusion zone” (EZ) water forming at water-loving surfaces. The review notes that the theories are controversial.

Fit: partial · Inside: yes

Yang Jwing-Ming (2022). *The Root of Chinese Qigong*. 3rd ed. YMAA. <https://ymaa.com/publishing/book/root-chinese-qigong-secrets-health-longevity-and-enlightenment-3rd-ed>

Why read? — Qi and the body, breathing, standing and sitting meditation and the body’s pathways, by a teaching master.

Fit: partial · Inside: yes

Jan Silberstorff, trans. Michael Verwerk (2009). *Chen: Living Taijiquan in the Classical Style*. Singing Dragon. <https://eld.bl.uk/catalog/017583006>

Why read? — Chen-style taijiquan as a daily practice.

Fit: partial · Inside: yes [unconfirmed: his lineage status]

Films and recordings

Jon Braeley / Empty Mind Films (c. 2009). *Chen Village Tai Chi Chuan*. 75 min. <https://emptymindfilms.com/?p=295>

Why watch? — Daily training in Chenjiagou with Chen Xiaowang, Chen Xiaoxing, Chen Bing and Chen Ziqiang. It includes a disciple induction ceremony.

Viewing advice: The page says “Hunan” in error for Henan; the year is inferred.

Fit: strong · Inside: yes

PBS. *Qigong: Ancient Chinese Healing for the 21st Century*. <https://www.themoviedb.org/movie/303559>

Why watch? — The history of qigong, practice in modern China, and interviews with doctors and practitioners.

Fit: partial · Inside: partly [unconfirmed: year, director, runtime]

Exhibitions and events

Chen Xiaowang, World Chen Xiaowang Taijiquan Association (autumn 2026). European seminars: Prague, Romania, Switzerland. <https://chenxiaowang.com/workshops/>

Why go? — Direct teaching by the lineage holder.

Visiting advice: Prague 30 Oct – 1 Nov 2026 (<https://www.chen-taiji.cz/index.php/registration-for-the-seminar-2026>); Romania 4–7 Nov (taijitrade@gmail.com); Switzerland 18–23 Nov (administration@cwtach.ch).

Fit: strong · Inside: yes [unconfirmed: the Swiss town]

Places to visit

Chen Taijiquan Network Germany (CTND). Kulturbrauerei, Schönhauser Allee 36, 10435 Berlin. <https://www.ctnd.de/taijiquan-tai-chi-berlin-en>

Why go? — A lineage school (Chen Fake – Chen Zhaokui – Chen Yu). The teacher, Nabil, is a disciple of Chen Yu.

Fit: strong · Inside: yes

Chenjiagou (Chen village). Wenxian county, Jiaozuo, Henan, China. <https://www.chinaservicesinfo.com/s/202605/09/WS6a30fa46498e36855033d486/discovery-exploring-birthplace-of-taijiquan.html>

Why go? — The birthplace of taijiquan. Visitors can practise “under the guidance of local masters” (*Women of China*, 9 May 2026).

Visiting advice: No hours or tickets are given.

Fit: strong · Inside: yes

Wudang Mountains (UNESCO 1994). Hubei, China. https://en.wikipedia.org/wiki/Wudang_Mountains

Why go? — The legendary birthplace of tai chi and a centre of Taoist internal arts and neidan breathing. See also Chapter 10.

Fit: partial · Inside: yes

Gasteiner Heilstollen (Gastein Healing Gallery). Heilstollenstraße 19, Böckstein, Bad Gastein, Austria. <https://www.gasteiner-heilstollen.com/en/>

Why go? — A thermal tunnel inside the Radhausberg combining warmth, humidity and radon. The operator's health claims are not repeated here.

Visiting advice: Seasons and hours are not shown; phone +43 6434 3753 0.

Fit: weak · Inside: partly

Roman Baths (UNESCO). Bath, England. <https://www.romanbaths.co.uk/>

Why go? — The Roman bathing complex at Britain's hot springs, dedicated to Sulis Minerva.

Visiting advice: Open 9:00–18:00 on the day checked; closed 25–26 Dec.

Fit: weak · Inside: partly

Chapter 16 — Perpetual circulation

Books

Arthur W. J. G. Ord-Hume (1977). *Perpetual Motion: The History of an Obsession*. George Allen & Unwin (later eds. 1980, 1998, 2015). <https://www.abebooks.com/9780046210243/Perpetual-motion-history-obsession-ORD-HUME-0046210245/plp>

Why read? — The standard history of the dream of perpetual motion, by a mechanical engineer. It separates a machine meant to give work from nothing from a flow that only keeps itself going. Useful as the contrast.

Fit: partial · Inside: partly

Lena Herzog (photographs) and Lawrence Weschler (essay) (2014). *Strandbeest: The Dream Machines of Theo Jansen*. TASCHEN. <https://lenaherzog.com/strandbeest-ebook>

Why read? — Photographs of Jansen's beasts that come close to studies of their mechanism.

Fit: weak · Inside: partly

Articles and texts

R. Nave (undated). *The Discovery of Superconductivity*. HyperPhysics, Georgia State University. <https://hyperphysics.gsu.edu/hbase/Solids/scdis.html>

Why read? — A current that circulates without being driven. Currents “have been maintained in lead rings for several years”, with a “decay constant of over a billion years”.

Fit: strong · Inside: no

Yoseph Imry (2009). *Tireless electrons in mesoscopic gold rings. Physics 2, 24 (APS Viewpoint)*. <https://physics.aps.org/articles/v2/24>

Why read? — Ordinary gold rings of 1–2 μm carry currents that do not decay while the electrons stay in phase around the ring. The measurement on 33 rings was made at Stanford by Bluhm, Koshnick, Bert, Moler and Huber.

Fit: strong · Inside: partly

File and Mills (1963). Persistent current in a superconducting ring. No URL in the catalogue (Wikipedia “Persistent current” cited by the judge).

Why read? — Gives a lower bound of more than 100,000 years for the current’s lifetime. Added by the judges.

Fit: strong · Inside: no

Sealed bottle garden (planted 1960; watered once in 1972). No URL in the catalogue (Wikipedia “Bottle garden” cited by the judge).

Why read? — A closed cycle of water and carbon kept going for decades. Wikipedia gives the attribution to David Latimer, a retired engineer, as belief only. Added by the judges.

Fit: strong · Inside: partly

WatchTime. *Running on Air: The History of the Jaeger-LeCoultre Atmos Clock (Atmos invented by Jean-Léon Reutter, 1928)*. <https://www.watchtime.com/brands/swiss-watches/running-on-air-the-history-of-the-jaeger-lecoultre-atmos-clock>

Why read? — A sealed gas capsule breathes with temperature; a 1 °C change gives about two days of running. It is fed by the environment, and the gears need no oil.

Fit: partial · Inside: yes

Films and recordings

Arthur Ganson (14 Sep 2009). *Machines and the Breath of Time*. Long Now Seminar, Cowell Theater, San Francisco. <https://longnow.org/talks/02009-ganson/>

Why watch? — The maker explains why he builds slow, endless motion.

Fit: partial · Inside: yes

Galloping Films. *Perpetual Motion Machines* (documentary on David E. H. Jones). Mentioned at <https://improbable.com/2018/06/29/david-daedalus-jones-and-perpetual-motion-machines/>

Why watch? — A film on Jones’s deliberately illusory perpetual-motion machines, with Jones as maker.

Fit: partial · Inside: yes [unconfirmed: director, year]

Art and music

Hans Haacke (1963-65). *Condensation Cube*. Tate, the Hirshhorn and the Generali Foundation (on loan to Museum der Moderne Salzburg). No URL in the catalogue (Wikipedia cited by the judge).

Why look? — A sealed acrylic cube in which water evaporates and condenses without end. The closest match to “nothing enters or leaves”. Added by the judges.

Fit: strong · Inside: yes

David E. H. Jones (“Daedalus”). *Perpetual-motion bicycle wheel*. Royal Society, London. <https://royalsociety.org/blog/2018/09/perpetual-motion>

Why look? — The counter-case, built knowingly as an illusion. The wheel needs an occasional nudge, and its secret is sealed in an archive envelope for 30 years.

Viewing advice: The blog by archivist Virginia Mills dates from 2018; check display status before visiting.

Fit: strong (as the counter-case) · Inside: yes [unconfirmed: display status in 2026]

Arthur Ganson. *Machine with Concrete*. Make article, 25 Apr 2012. <https://makezine.com/article/craft/arthur-gansons-machine-with-concrete/>

Why look? — A motor at 200 rpm drives twelve worm-gear stages of 1:50. The last gear, set in concrete, would take about 2.3×10^{12} years per turn. Motion disappears into stillness.

Viewing advice: On indefinite loan to the Exploratorium, San Francisco, from 2013; check the current location.

Fit: partial · Inside: yes [unconfirmed: work year, possibly c. 1992; current location]

Exhibitions and events

David E. H. Jones (undated). *David E.H. Jones: In Perpetual Motion* (digital exhibition). TORCH Oxford (Museum of Revelatory Fakes). <https://torch.ox.ac.uk/node/2964571>

Why go? — The counter-case, online, with a video by Al Hopwood Studio and a podcast with Martyn Poliakoff.

Visiting advice: Online; no visit needed.

Fit: strong (counter-case) · Inside: yes

Museum of Contemporary Art Santa Barbara (4 Oct 2026 - 1 May 2027). *Falling into the Future: Kinetic Art at the Edge of the World*. 653 Paseo Nuevo, Santa Barbara CA. <https://www.artrabbit.com/events/falling-into-the-future-kinetic-art-at-the-edge-of-the-world> · <https://www.independent.com/2026/10/16/art-that-moves/>

Why go? — Kinetic art by Diana Thater, Kelly Akashi, Ayoung Kim and others. No work is shown to be a closed circulation.

Visiting advice: The AlloSphere works (UCSB) open on 15 Nov.

Fit: weak · Inside: yes

Places to visit

Oxford Electric Bell (Clarendon Dry Pile), installed 1840. Clarendon Laboratory, University of Oxford. https://en.wikipedia.org/wiki/Oxford_Electric_Bell

Why go? — It has rung about twice a second since 1840, roughly 10 billion strokes. It is “still ringing every half second, albeit inaudibly”. One judge notes that the dry piles are slowly used up.

Visiting advice: It stands behind two layers of glass in a corridor by the foyer; no public access is documented, so treat it as not openly accessible.

Fit: strong (gap judge) / partial (judge EF) · Inside: partly

Arthur Beverly (1864). Beverly Clock. Third-floor lift foyer, Physics Department, University of Otago, Dunedin. https://en.wikipedia.org/wiki/Beverly_Clock · <https://atlasobscura.com/places/beverly-clock>

Why go? — Not wound by hand since 1864. A sealed box of about 28 litres of air pushes a diaphragm as temperature changes.

Visiting advice: Reaching the third floor by lift needs a key card.

Fit: partial · Inside: yes

James Cox with John Joseph Merlin (1760s). Cox’s Timepiece. Victoria and Albert Museum, London. https://en.wikipedia.org/wiki/Cox%27s_timepiece

Why go? — About 68 kg of mercury rises and falls with air pressure and keeps the spring wound. Cox called it perpetual motion. It was deactivated when it moved to the V&A.

Visiting advice: Display status is not confirmed; check with the V&A.

Fit: partial · Inside: yes [unconfirmed: on display]

Theo Jansen. Strandbeesten Mortuary, Museum Prinsenhof Delft. Kabeldistrict Delft, north entrance 2, Schieweg 15. <https://museumprinsenhofdelft.nl/en/activities/discover-strandbeesten-mortuary>

Why go? — Theo Jansen’s retired wind-walking beasts. Wind supplies the energy.

Visiting advice: Reopened 19 Apr 2026, no end date; Thu 13:00–21:00 and Sun 13:00–17:00, free (donation asked).

Fit: weak · Inside: yes

MIT Museum. Gallery label on Arthur Ganson. Cambridge MA. <https://mitmuseum.mit.edu/gallery-label-ganson>

Why go? — The museum’s label on Ganson’s machines.

Visiting advice: The page names no machines; check which are on view.

Fit: weak · Inside: yes [unconfirmed: which machines are on view]

Chapter 17 — Poised matter

Books

Per Bak (1996). *How Nature Works: The Science of Self-Organized Criticality*. Springer/Copernicus. <https://www.springer.com/gp/book/9780387947914>

Why read? — The sandpile drives itself to the tipping point and stays there, so the smallest grain can set off an avalanche of any size. Strong for the tipping point; it does not cover return to a first form.

Fit: strong · Inside: partly

Articles and texts

NASA (undated). *Shape Memory Alloys (classroom activity, PDF)*. https://www.nasa.gov/sites/default/files/atoms/files/shape-memory-alloys-activity_0.pdf

Why read? — Return to a first form, done by hand. Bend a 1 mm nitinol wire rated about 40 °C into any shape and put it in hot water; it returns to its first form.

Reading advice: The activity compares the wire with a paperclip under the same treatment.

Fit: strong · Inside: yes

William Buehler, Naval Ordnance Laboratory (1959-62). Nitinol. No URL in the catalogue (Wikipedia cited by the judge).

Why read? — At a 1961 management meeting an accordion-folded strip snapped back to shape when heated with a pipe lighter. Ölander had seen the effect in gold-cadmium in 1932. Added by the judges.

Fit: strong · Inside: yes

Grand Illusions. *Hot Wire (nitinol demonstration)*. <https://www.grand-illusions.com/products/hot-wire>

Why read? — A memory wire that spells “hot” at about 40 °C.

Reading advice: £21.99; one review reports that it is unreliable.

Fit: partial to strong · Inside: yes

Steven Postrel (May 1997). *Of Sand and Cities*. Reason. <https://reason.com/1997/05/01/of-sand-and-cities>

Why read? — A lay review of Bak’s sandpile idea, together with Krugman’s *The Self-Organizing Economy*.

Fit: partial · Inside: no

Films and recordings

Thomas Riedelsheimer (2001). *Rivers and Tides: Andy Goldsworthy Working with Time*. 90 min. https://german-documentaries.de/en_EN/films/rivers-and-tides.10013 · <https://www.rogerebert.com/reviews/rivers-and-tides-andy-goldsworthy-working-with-time-2003>

Why watch? — Goldsworthy builds stone spirals, twig webs and ice sculptures to the edge of collapse, lets them fall and starts again. In his words, “that’s a very beautiful balance”.

Fit: strong · Inside: yes

Museum of Science, Boston (2 May 2025). *Oobleck Explained in 40 Seconds*. <https://www.mos.org/video/oobleck-explained-40-seconds-try-home>

Why watch? — A mirror case: cornstarch and water (2:1) is liquid at rest and solid under a sudden push. People walk across a pool of it.

Viewing advice: The recipe is included, so it can be tried at home.

Fit: partial · Inside: yes

Art and music

Alexander Calder (installed 18 Nov 1977). *Untitled (large mobile)*. Central Court, East Building, National Gallery of Art, Washington DC. <https://www.nga.gov/collection/art-object-page.56517.html>

Why look? — A mobile in balance that moves with a breath of air and returns to its first form.

Viewing advice: Permanent; the page describes it in the present tense, so it is probably on view.

Fit: strong · Inside: yes

Michael Grab (since 2008). *Gravity Glue rock balancing*. <https://mymodernmet.com/michael-grab-gravity-glue>

Why look? — Stones held at the tipping point with no glue. Grab finds tiny notches and feels the vibrations of small adjustments. Strong for poise; it does not cover return.

Fit: strong · Inside: yes

Sachiko Kodama with Minako Takeno (2000). *Protrude, Flow*. SIGGRAPH archive. No URL in the catalogue.

Why look? — Ferrofluid forms rise in response to visitors’ voices and fall back when released. Added by the judges.

Viewing advice: No 2026–27 showing is listed.

Fit: strong · Inside: yes

Bruce Shapiro. Sisyphus kinetic sand table (Sisyphus Industries, founded 2016). <https://www.raspberrypi.com/news/creating-mesmerising-kinetic-art-furniture-with-sisyphus/>

Why look? — A magnet-driven ball draws continuously in sand. The claim that each new pattern erases the last is not in the source.

Fit: weak · Inside: yes

Exhibitions and events

Museum Tinguely, Basel (5 Mar 2026 - 7 Mar 2027). Fuzzy Logic (Nicolas Darrot); also Labouring Bodies, until 8 Nov 2026, and Les témoins oculistes, 2 Dec 2026 - 9 May 2027. <https://www.tinguely.ch/en/exhibitions/on-view-now-and-upcoming.html>

Why go? — *Fuzzy Logic* shows automata and “fuzzy” reasoning, in the museum of Tinguely’s machines.

Visiting advice: See the museum entry below for hours.

Fit: partial · Inside: partly

MCA Santa Barbara (4 Oct 2026 - 1 May 2027). Falling into the Future: Kinetic Art at the Edge of the World. <https://www.artrabbit.com/events/falling-into-the-future-kinetic-art-at-the-edge-of-the-world>

Why go? — The only kinetic exhibition found running from Oct 2026. Balance is not named as its theme. Full entry under Chapter 16.

Fit: weak · Inside: yes

Places to visit

Eureka Dunes, Death Valley, California: booming sand. <https://pvtimes.com/community/walk-or-roll-death-valleys-singing-eureka-dunes/>

Why go? — When the sand is very dry, sliding down the steep face sets off a deep booming tone. The visitor triggers it. About 35 booming-sand sites exist worldwide.

Visiting advice: Remote: 97 miles from Furnace Creek, the last 10 on gravel; walking, running or rolling only.

Fit: partial to strong · Inside: yes

Museum Tinguely, Basel. Permanent collection *La roue = c’est tout*. <https://www.tinguely.ch/en/exhibitions/on-view-now-and-upcoming.html>

Why go? — Tinguely’s machines, some of them hands-on.

Visiting advice: Tue–Sun 11–18, Thu to 21.

Fit: partial · Inside: partly

Chapter 18 — The store that shows nothing

Books

Frank Close (2007). *The Void*. Oxford University Press. <https://www.publishersweekly.com/9780199225903>

Why read? — The only entry about a pair that sums to nothing, by a working particle physicist. It describes empty space as “teeming with particles popping in and out of existence”.

Fit: partial to strong · Inside: partly

Articles and texts

Lord Kelvin (1867). Kelvin water dropper. No URL in the catalogue (Wikipedia cited by the judge).

Why read? — Neutral falling water separates into opposite charges, and the separation releases the stored charge. A hands-on build. Added by the judges.

Fit: strong · Inside: yes

Laozi. *Daodejing* chapter 11, translations by Legge, Suzuki and Goddard. YellowBridge. <https://mail.yellowbridge.com/onlinelit/daodejing11.php>

Why read? — Thirty spokes meet in a hub, and the empty space in the hub makes the wheel useful. The same holds for the hollow of a pot and the openings of a house.

Reading advice: Three translations side by side on one page.

Fit: partial · Inside: partly

Laozi, trans. James Legge. *The Tao Teh King*. Project Gutenberg. <https://gutenberg.org/cache/epub/216/pg216.txt>

Why read? — The full text, free.

Fit: partial · Inside: partly

Kirk McElhearn (undated). *John Cage and the Anechoic Chamber*. <https://kirkville.com/john-cage-and-the-anechoic-chamber/>

Why read? — In 1951 Cage heard two sounds in a room built for silence. He took them to be his nervous system and his blood. McElhearn quotes David Revill, who suggests tinnitus.

Fit: partial · Inside: yes

Kay Larson (1999). *...silence is not acoustic.... Tricycle*. <https://tricycle.org/magazine/433/>

Why read? — On Cage’s 4’33”, premiered by David Tudor on 29 Aug 1952: a frame empty of notes and full of room sound. Cage: “Our poetry now is the realization that we possess nothing.”

Fit: weak to partial · Inside: yes

UCLA xLAB (20 Oct 2020). *Japan House: Rethinking of MA: Space-Time 2020*. Panel at Japan House Los Angeles. <https://xlab.aud.ucla.edu/?p=1610>

Why read? — A later return to Isozaki's *Ma*.

Fit: weak · Inside: partly

Films and recordings

Takahiko Iimura (1989). *MA: Space/Time in the Garden of Ryoan-ji*. 16 min, 16 mm colour, music by Takehisa Kosugi. Light Cone, Paris. <https://lightcone.org/en/film-715-ma-space-time-in-the-garden-of-ryoan-ji>

Why watch? — The dry garden presented as an embodiment of *ma*, the interval of space-time.

Viewing advice: Distributed by Light Cone, Paris.

Fit: strong · Inside: partly

Frank Scheffer (2012). *How to Get Out of the Cage: A Year with John Cage*. 55 min. <https://www.filmfestival.nl/en/film/how-to-get-out-of-the-cage>

Why watch? — Cage interviews from 1982–1992 and Ryoan-ji footage: silence, chance and the empty interval.

Fit: strong · Inside: yes

Frank Scheffer (1995). *From Zero*. 70 min, AVRO (production Allegri Film). <https://www.filmfestival.nl/en/film/from-zero-the-documentary>

Why watch? — Part 1 was edited by chance operations; part 2 is *Fourteen*, performed by the Ives Ensemble. See also Chapter 7.

Fit: strong · Inside: yes

Art and music

Kenneth Snelson (1968). *Needle Tower*. Hirshhorn Museum and Sculpture Garden, Washington DC. No URL in the catalogue (Wikipedia cited by the judge).

Why look? — The clearest picture of a store that shows nothing while full. Balanced tension and compression look like rest; cutting a cable releases the stored load. Added by the judges.

Fit: strong · Inside: yes [unconfirmed: height, given as 26.5 m in the text and 18 m in the metadata]

Rachel Whiteread. *Cast works (plaster, concrete, resin)*. Tate exhibition page (2017–18): <https://www.tate.org.uk/whats-on/tate-britain/exhibition/rachel-whiteread>

Why look? — She casts the space inside rooms and objects so the empty space becomes solid. Tate calls it “solid air”.

Fit: weak to partial · Inside: yes

Kazimir Malevich (1915). *Black Square*. Tretyakov Gallery, Moscow. https://en.wikipedia.org/wiki/Black_Square

Why look? — Malevich called it the “zero point of painting”.

Fit: weak to partial · Inside: yes

Yves Klein (28 Apr 1958). *Le Vide (The Void)*. Galerie Iris Clert, 3 rue des Beaux-Arts, Paris (historic work). https://en.wikipedia.org/wiki/Iris_Clert_Gallery

Why look? — The gallery was emptied and painted white, with one bare display case. About 3,500 invitations went out and the room was packed.

Fit: weak · Inside: yes

Arata Isozaki (1978). *Ma: Espace/Temps*. Musée des Arts Décoratifs, Paris (historic work). <https://www.archpaper.com/?p=263191>

Why look? — *Ma*, the charged interval, presented as space-time in Japanese culture by an architect who builds with it. An interval, not a mirror pair.

Fit: weak · Inside: yes

Places to visit

Soami, attributed (1499). Ryōan-ji rock garden. Kyoto. https://sacredsites.com/asia/japan/ryoan_ji_kyoto.html

Why go? — Fifteen stones in raked gravel in groups of 5, 2, 3, 2 and 3. From any viewpoint one stone is always hidden.

Fit: weak · Inside: yes

Chapter 19 — Agreement without a master

Books

Steven Strogatz (2003). *Sync: The Emerging Science of Spontaneous Order*. Hyperion. <https://news.cornell.edu/node/280680>

Why read? — The standard non-technical account of coupled oscillators that lock without a conductor. It covers fireflies, Huygens’ clocks, pacemaker cells and the Mirollo–Strogatz result of 1989.

Fit: strong · Inside: partly

Articles and texts

Matthew Bennett, Michael F. Schatz, Heidi Rockwood, Kurt Wiesenfeld (8 Mar 2002). *Huygens’s clocks*. *Proc. R. Soc. Lond. A* 458: 563–579. Press summary: <https://innovations-report.com/physics-and-astronomy/report-7705>

Why read? — A hands-on rebuild of Huygens’ set-up. Locking happens only in a narrow window: near-equal frequencies, enough coupling, and heavy cases.

Fit: strong · Inside: partly

Holger Willms, Petko Kitanov, William Langford (2017). *Huygens' clocks revisited*. *Royal Society Open Science* 4: 170777. <https://pmc.ncbi.nlm.nih.gov/articles/PMC5627120>

Why read? — Shows that Huygens' physical set-up “could only exhibit anti-phase motion”. The geometry selects one locked state.

Fit: strong · Inside: no

James Pantaleone (Oct 2002). *Synchronization of metronomes*. *American Journal of Physics* 70(10). No URL in the catalogue (a UAA PDF exists).

Why read? — Two metronomes on a board resting on two soda cans lock together. The home recipe behind the metronome videos. Added by the judges.

Fit: strong · Inside: partly

Jonatan Peña Ramirez, Luis Alberto Olvera, Henk Nijmeijer, Joaquín Alvarez (2016). *The sympathy of two pendulum clocks: beyond Huygens' observations*. *Scientific Reports* 6: 23580. <https://pmc.ncbi.nlm.nih.gov/articles/PMC4810368>

Why read? — A contrast case. Two monumental clocks on a shared pine structure locked in phase, not anti-phase, and slowed to 0.4935 Hz.

Fit: partial · Inside: yes

Vickhoff et al. (2013). *Choir heart-rate study*. *Frontiers in Psychology*. <https://www.asianscientist.com/2013/07/health/heart-beats-choir-members-2013/>

Why read? — When fifteen Swedish students sang in unison, their heart rates rose and fell together.

Fit: partial · Inside: partly

Mickey Hart with Adam Gazzaley (22 Sep 2012). *Drum circle with live EEG*. *AARP Life@50+, New Orleans*. <https://mickeyhart.net/?p=7234> · <https://www.jambase.com/Articles/98761/Rhythm-Central-Mickey-Hart%27s-Real-Time-Brain-Activity>

Why read? — Hart led a 1,000-person drum circle as a demonstration of group entrainment, while his own brain rhythms were shown live.

Fit: partial · Inside: yes

Films and recordings

Ikeguchi Laboratory, Saitama University (Sep 2012). *32 metronomes synchronising (video)*. <https://soranews24.com/2012/09/27/from-chaos-to-order-32-metronomes-magically-come-together-in-sync-before-your-very-eyes/> · <https://www.youtube.com/watch?v=JWToUATLGzs> · 100-metronome version: <https://thekidshouldseethis.com/post/the-synchronization-of-100-metronomes>

Why watch? — Scattered metronomes on a shared movable board become one beat within minutes. The board is the only coupling.

Viewing advice: Repeatable at home; see Pantaleone above for the set-up.

Fit: strong · Inside: yes

Steven Strogatz (TED2004). *The science of sync*. 21:38. https://www.ted.com/talks/steven_strogatz_on_sync

Why watch? — Flocks, fireflies and objects falling into step without a leader.

Fit: strong · Inside: no

Art and music

Steve Reich (1966-67). *Piano Phase (with *It's Gonna Rain*, 1965)*. <https://stevereich.com/composition/piano-phase/> · https://en.wikipedia.org/wiki/Piano_Phase · interview: <https://stevereich.com/jonathan-cott/>

Why look? — Two identical lines start in unison; one drifts ahead and comes round again. Reich found the process when “one of them gradually started getting ahead of the other” on two tape machines.

Viewing advice: The Cott interview gives Reich’s own account; pattern lengths are 12, 8 and 4 notes.

Fit: partial · Inside: yes

Exhibitions and events

Nederlands Kamerkoor, Het Muziek, HIIIT, Ensemble Klang, New European Ensemble; conductor Joost Gevers (24 and 25 Oct 2026). Reich, *The Desert Music*. Zeeuwse Concertzaal, Middelburg, 24 Oct, 20:00; Concertgebouw De Vereeniging, Nijmegen, 25 Oct, 19:30. <https://www.muziekgebouw.nl/en/agenda/steve-reich-s-desert-music-5pjj>

Why go? — A Reich-at-90 performance by a large combined choir and ensemble, touring two Dutch cities.

Visiting advice: The Operabase listing of 24 Oct at Amare is wrong; the Amare date was 4 Oct.

Fit: strong (gap judge) · Inside: yes

Colin Currie Group (28 Oct 2026, 20:00). Steve Reich at 90. Barbican Hall, London. Source: Bachtrack; overview <https://www.boosey.com/cr/news/Steve-Reich-at-90-Worldwide-Celebrations-and-Premiere/102858>

Why go? — *Clapping Music*, *Two Pianos*, *Radio Rewrite*, *Double Sextet*, *Quartet* and *In All Your Ways* (London premiere). See also Chapter 8.

Fit: strong (gap judge) · Inside: yes

Munich Philharmonic (1 Nov 2026). Reich programme: *Music for Pieces of Wood*, *Pendulum Music*, *Drumming Part I*, *Six Marimbas*. Munich. <https://www.boosey.com/cr/news/Steve-Reich-at-90-Worldwide-Celebrations-and-Premiere/102858>

Why go? — A Reich-at-90 programme of four ensemble pieces, including *Pendulum Music*.

Visiting advice: Listed by Boosey & Hawkes only; check a venue page before going.

Fit: strong (gap judge) · Inside: yes [unconfirmed: listed by Boosey & Hawkes only, not on a venue page]

Philharmonie de Paris (12-15 Nov 2026). Reich focus “Clapping for Steve Reich”, including Colin Currie Group, *In All Your Ways*, 15 Nov. <https://www.boosey.com/cr/news/Steve-Reich-at-90-Worldwide-Celebrations-and-Premiere/102858>

Why go? — A four-day focus on Reich’s music.

Fit: strong (gap judge) · Inside: yes

Olivier Dubois, choreography (12 and 13 Nov 2026, 20:00). *Come Out*. Fondation Fiminc, Paris (within “Clapping for Steve Reich”). <https://philharmoniedeparis.fr/en/activite/29449>

Why go? — Fifteen performers in about an hour, moving to Reich’s phase piece.

Visiting advice: Sold out.

Fit: strong (gap judge) · Inside: yes

LSO Percussion Ensemble (5 Dec 2026, 19:30). *Music for Pieces of Wood, Quartet, Sextet*. Jerwood Hall, LSO St Luke’s, London. <https://www.lso.co.uk/whats-on/lso-percussion-ensemble-steve-reich-90-5-dec-26/>

Why go? — A Reich-at-90 programme of three percussion and ensemble pieces.

Visiting advice: Sold out.

Fit: strong (gap judge) · Inside: yes

Münchener Kammerorchester (16 Jan 2027). *Triple Quartet, Eight Lines, Double Sextet*. Pinakothek der Moderne, Munich. Source: in-muenchen.de.

Why go? — A Reich programme in the anniversary series. Added by the judges.

Fit: strong (gap judge) · Inside: yes

Para Orchestra (autumn 2026). Reich, *Music for 18 Musicians*. Southbank Centre, London. <https://www.boosey.com/cr/news/Steve-Reich-at-90-Worldwide-Celebrations-and-Premiere/102858>

Why go? — A Reich-at-90 performance of *Music for 18 Musicians*.

Visiting advice: Dates are not confirmed; check the Southbank Centre listings.

Fit: strong (gap judge) · Inside: yes [unconfirmed: dates]

Guildhall students (autumn 2026). Reich, *Music for 18 Musicians*. Barbican, London. <https://www.boosey.com/cr/news/Steve-Reich-at-90-Worldwide-Celebrations-and-Premiere/102858>

Why go? — A separate autumn Barbican performance of the same piece.

Fit: strong (gap judge) · Inside: yes [unconfirmed: date]

Philharmonia, conductor Rouvali (Feb 2027). Reich, *The Desert Music*.

London. <https://www.boosey.com/cr/news/Steve-Reich-at-90-Worldwide-Celebrations-and-Premiere/102858>

Why go? — A further performance of *The Desert Music* in the anniversary year.

Fit: strong (gap judge) · Inside: yes [unconfirmed: venue and day]

Rijksmuseum Boerhaave (24 Apr 2026 - 3 Jan 2027). *Truth? The art of doubt (Waarheid? Kunst van de twijfel)*. Leiden. <https://www.rijksmuseumboerhaave.nl/en/exhibitions/truth>

Why go? — The current temporary show in the museum that holds the Coster clock.

Visiting advice: The Dutch page gives 4 Jan 2027 as the end date.

Fit: weak · Inside: partly

Places to visit

Synchronous fireflies (*Photinus carolinus*). Elkmont, Great Smoky Mountains National Park, Tennessee. <https://www.recreation.gov/ticket/facility/233374>

Why go? — Thousands of insects flash in unison with no leader.

Visiting advice: The display usually falls in late May or early June; 2027 dates are not yet published, so expect the lottery in late April 2027 (\$1 entry, \$29 award in 2026).

Fit: strong · Inside: yes

Synchronous fireflies (*Photuris frontalis*). Congaree National Park, South Carolina. <https://www.nps.gov/cong/learn/nature/synchronous-fireflies-at-congaree.htm>

Why go? — A second species with a different flash code.

Visiting advice: In 2026 the event ran 13–20 May with a lottery 7–14 Apr via recreation.gov facility 300008; 2027 dates are not yet published.

Fit: strong · Inside: yes

Kampung Kuantan, Kuala Selangor, Malaysia: mangrove fireflies. <https://www.askexplorer.com/kuala-lumpur/residents/see-do/kuala-lumpur-main-areas/kl-outskirts/kampung-kuantan-the-fireflies>

Why go? — Whole riverside mangrove trees flash as one.

Visiting advice: All year, dusk to midnight, by boat.

Fit: strong · Inside: yes

Salomon Coster to Christiaan Huygens' design (1657). The oldest surviving pendulum clock. Rijksmuseum Boerhaave, Lange St. Agnietenstraat 10, Leiden. https://en.wikipedia.org/wiki/Salomon_Coster · <https://www.guinnessworldrecords.com/world-records/752621-oldest-pendulum-clock> · highlights: <https://rijksmuseumboerhaave.nl/english/World-famous-collection>

Why go? — The clock type whose cases Huygens saw lock in anti-phase in 1665. One judge notes that it shows the clock type, not synchrony itself.

Visiting advice: Wikipedia says it is on display; phone ahead (071-751 99 99).

Fit: strong (gap judge) / partial (judge EF) · Inside: yes

Huygens Museum / Hofwijck. Westeinde 2A, Voorburg. <https://www.museum.nl/en/huygens-museum>

Why go? — House and garden designed by Constantijn Huygens in 1641, where Christiaan lived and worked. Permanent exhibition “Christiaan under the Stars”. No clocks are mentioned.

Visiting advice: Open Thu–Sun 12:00–17:00.

Fit: weak · Inside: partly

Chapter 20 — Matter by selection, and the cut

Books

Lawrence M. Principe (2012/2013). *The Secrets of Alchemy*. University of Chicago Press. Reviews: <https://www.chemistryworld.com/culture/the-secrets-of-alchemy/6117.article> · <https://lareviewofbooks.org/article/one-book-opens-another-on-the-secrets-of-alchemy/>

Why read? — A chemist who reran the recipes in his own lab reads them as encoded bench processes. One example is the Leiden Papyrus “water of sulphur”, which colours silver gold-like.

Reading advice: The colour plates show the lab results.

Fit: partial · Inside: yes

William R. Newman and Lawrence M. Principe (2002). *Alchemy Tried in the Fire: Starkey, Boyle, and the Fate of Helmontian Chymistry*. University of Chicago Press. Review: <https://www.americanscientist.org/node/1290>

Why read? — Reconstructs the 1650s notebooks of the working chymist George Starkey. It shows his daily preparation of the conditions under which a product appears.

Fit: partial · Inside: partly

Articles and texts

Ernest Rutherford (June 1919). *An anomalous effect in nitrogen (paper IV)*. *Philosophical Magazine*. Secondary: <https://physicsworld.com/a/rutherfords-legacy/>

Why read? — The cut: the first artificial change of one element into another. The nitrogen nucleus “disintegrated under the intense forces” of a close alpha-particle collision. Rutherford counted the scintillations himself.

Fit: strong · Inside: yes

William R. Newman, Indiana University. *The Chymistry of Isaac Newton* (online edition). <https://webapp1.dlib.indiana.edu/newton/project/about.do> · <https://webapp1.dlib.indiana.edu/newton/project/grant.do>

Why read? — Newton’s alchemical manuscripts, with scans. The group rebuilt metallic “trees” growing from solution by selection, the star regulus of antimony and a working replica of Newton’s furnace.

Fit: partial to strong · Inside: yes

Stuart Kauffman (9 Nov 2003). *The Adjacent Possible*. Edge. <https://edge.org/node/21148> · TEDxTallinn 2023 page: <https://tedxtallinn.ee/the-adjacent-possible-and-how-it-explains-human-innovation-stuart-kauffman/> · meeting report: <https://www.nmsr.org/wp-content/uploads/2026/07/Kauffman-Feb2002.pdf> · review of *Investigations* (2000): <https://www.timeshighereducation.com/node/86470>

Why read? — What can appear next is limited to what is one step from what exists. New forms come from pre-adaptations that cannot be listed in advance.

Reading advice: The TEDxTallinn page has no video link.

Fit: partial · Inside: no

Films and recordings

New Books Network. Interview with Lawrence M. Principe on *The Secrets of Alchemy*. <https://newbooksnetwork.com/lawrence-m-principe-the-secrets-of-alchemy-university-of-chicago-press-2012>

Why watch? — He discusses his “attempts to recreate alchemical recipes and practices in his own laboratory”.

Fit: partial · Inside: yes

Lawrence M. Principe (11 Dec 2014). *Alchemy on the Cutting Edge*. 21st Dibner Library Lecture, Smithsonian Libraries. <https://library.si.edu/webcasts/alchemy-cutting-edge-lawrence-m-principe>

Why watch? — A history lecture on transmutation as pursued by chemists into the 1760s.

Fit: partial · Inside: no

Art and music

Lucio Fontana (from 1959). *Slashed canvases, Concetto spaziale, Attesa*. Tate holds *Spatial Concept ‘Waiting’* (1960). No URL in the catalogue (Wikipedia “Spatialism” cited by the judge).

Why look? — A literal cut, made with a razor by the artist, that opens a new space in the canvas. Added by the judges.

Fit: strong · Inside: yes

Exhibitions and events

Embassy of the Free Mind (Bibliotheca Philosophica Hermetica). *C.G. Jung: From Psyche to Gnosis*, 15 Sep - 28 Dec 2026; *Nada Brahma: The Universe Is Sound* (Arion de Munck), 21 Oct 2026 - 15 Jan 2027; *House with the Heads*, 21 Mar - 28 Dec 2026. Keizersgracht 123, Amsterdam. <https://www.embassyofthefreemind.com/exhibitions>

Why go? — The main European library of hermetic and alchemical texts. It shows transmutation as “bringing forth” rather than making. *Nada Brahma* also bears on Chapter 19.

Visiting advice: Open Wed-Sun 11-17.

Fit: partial · *Inside:* partly

Science History Institute (permanent, opened 7 Oct 2026). *Fire and Gold: The Art of Alchemy (1450-1850)*. Fisher Gallery, 315 Chestnut Street, Philadelphia. Curator: Elisabeth Berry Drago. <https://sciencehistory.org/visit/exhibitions/fire-and-gold-the-art-of-alchemy-1450-1850/> · <https://www.sciencehistory.org/about/press/science-history-institutes-new-permanent-exhibition-showcases-paintings-and-rare-books-on-alchemy/>

Why go? — Paintings of fire, heat control and distillation, with rare books such as Agricola’s *De re metallica* (1556).

Visiting advice: Wed-Sat 10-5, free; about 16 of roughly 90 paintings are shown and rotated every six months.

Fit: weak to partial · *Inside:* partly

Places to visit

Roger Hiorns (2008). *Seizure*. Yorkshire Sculpture Park, West Bretton, Wakefield (at YSP since 2013, Arts Council Collection). <https://ysp.org.uk/openair/seizure> · booking: <https://ysp.org.uk/whats-on/events/seizure-admission-2026-27> · <https://www.artangel.org.uk/seizure/>

Why go? — Supersaturated copper sulphate was pumped into a council flat. As it drained, only the form that fits, blue crystal, remained on every surface.

Visiting advice: Timed slots at 14:30 on weekends, Bank Holidays and Wakefield school holidays, 24 Oct - 31 Dec 2026; booking required, £0-12 including YSP admission; not wheelchair accessible.

Fit: strong · *Inside:* yes

Speculum Alchemiae (Museum of Alchemy). Haštalská 1, Prague 1. <https://prague.eu/en/objevujte/speculum-alchemiae-mirror-of-alchemy-zrcadlo-alchymie/> · <https://www.alchemiae.cz/en/> · <https://www.timeout.com/prague/museums/speculum-alchemiae>

Why go? — Historic lab spaces found during reconstruction, linked with Rudolf II.

Visiting advice: Open daily 10:00–18:00, with 30-minute tours every half hour.

Fit: weak to partial · *Inside:* partly

Muzeum Alchymie. Sankturinovský dům, Palackého náměstí 377, Kutná Hora, Czechia. <https://www.atlasobscura.com/places/muzeum-alchymie> · <http://www.alchemy.cz/museum.html> · <https://english.radio.cz/node/8065637>

Why go? — A reconstructed alchemical laboratory with bellows and glassware, and a Gothic chapel tied to the alchemist Hynek of Münsterberg.

Visiting advice: Call ahead; it is unclear whether it is open in 2026.

Fit: weak · *Inside:* partly [unconfirmed: whether open in 2026; the 2019 site still calls it a project; Atlas Obscura (2021) advises calling ahead] # Calendar from 21 October 2026

Dates were checked on 21 October 2026; check with the venue before travelling. Exhibitions already running come first, by closing date. Events and openings follow, by start date. Items marked [unconfirmed] lack a confirmed date or venue.

Dates	What	Where	Chapter
1 Apr – 25 Oct 2026	Stein.Zeit Museum season (page has conflicting dates)	Stift Rein, Styria	11
1 Sep – 1 Nov 2026	<i>Defining the Classics: Tang and Song Calligraphy and Paintings</i> (Song phase from 30 Sep)	Palace Museum, Wenhua Dian, Beijing	5
10 Jun – 1 Nov 2026	<i>Escher & Islamic Art: 20 Perspectives</i>	Escher in Het Paleis, The Hague	6
28 Sep – 1 Nov 2026	<i>OERbotanie – Wat Vroeger GeWas</i>	Hunebedcentrum, Borger	11
until 8 Nov 2026	<i>Labouring Bodies</i>	Museum Tinguely, Basel	17
until 15 Nov 2026	Olafur Eliasson, <i>Your curious journey</i>	MCAD Manila	4
20 Mar – 15 Nov 2026	Wardenclyffe tour season (booking required)	Tesla Science Center, Shoreham NY	13
21 Oct – 25 Nov 2026	Mind & Life Europe autumn events (year not printed on page)	Mind & Life Europe, online/various	9
21 Mar – 28 Dec 2026	<i>House with the Heads: A Monument to Free Thinking</i>	Embassy of the Free Mind, Amsterdam	20
15 Sep – 28 Dec 2026	<i>C.G. Jung: From Psyche to Gnosis</i>	Embassy of the Free Mind, Amsterdam	20

Dates	What	Where	Chapter
24 Apr 2026 – 3 Jan 2027 (Dutch page: 4 Jan)	<i>Truth? The art of doubt</i>	Rijksmuseum Boerhaave, Leiden	14, 19
24 Jul 2026 – 10 Jan 2027	<i>Prehistoric Lives in the Trent Valley</i>	Lakeside Arts, Nottingham	11
21 Oct 2026 – 15 Jan 2027	<i>Nada Brahma: The Universe Is Sound</i> (opens 21 Oct)	Embassy of the Free Mind, Amsterdam	19, 20
22 Aug (or 25 Jul) 2026 – 17 Jan 2027	<i>Victory Over the Sun: Encounters with Light</i>	The Light, Durham	4
1 Oct 2026 – 8 Feb 2027	<i>Mathematics and the Art of M. C. Escher</i>	MoMath, New York	6
5 Mar 2026 – 7 Mar 2027	<i>Fuzzy Logic</i> (Nicolas Darrot)	Museum Tinguely, Basel	17
9 Oct 2026 – 30 Apr 2027	<i>Next Door</i> (group show, with Eliasson)	Hamburger Bahnhof, Berlin	4
4 Oct 2026 – 1 May 2027	<i>Falling into the Future: Kinetic Art at the Edge of the World</i>	MCA Santa Barbara	16, 17
27 Jun 2026 – 16 May 2027	<i>Scotland's First Warriors</i> (free)	National Museum of Scotland, Edinburgh	11
16 Oct 2026 – 30 May 2027	<i>Degrees of Disruption: Vera Molnar and Generative Art</i> (free)	V&A South Kensington, London	7
21 Nov 2025 – 4 Jul 2027	Olafur Eliasson, <i>Big Things for Big Rooms</i>	Hirshhorn Museum, Washington	4
8 Jul 2026 – 1 Mar 2028	<i>Journey into the Past</i>	Museum für Urgeschichte(n), Zug	11
2026 [unconfirmed: dates]	Olafur Eliasson, <i>Deep seeing currents</i>	ARTIS, Amsterdam	4
21 Oct 2026	Mind Matters Dialogue and book launch, Gilbert and Haraway	Mind & Life Europe	9
22 Oct 2026, 13–15h	“Leven met stenen”, walk led by Gerrit Eggink	Hunebedcentrum, Borger	11
22 Oct 2026	<i>The Enactive Fold</i> podcast S4E2	Mind & Life Europe	9
23 Oct 2026, 14–17h	Labyrinth uncovered for walking [unconfirmed]	Chartres Cathedral	14
24 Oct 2026, 20:00			19

Dates	What	Where	Chapter
	Reich, <i>The Desert Music</i>	Zeeuwse Concertzaal, Middelburg	
24 Oct 2026 – 21 Feb 2027	<i>Turner: Painting the Sublime</i> (group show, with Eliasson)	National Museum of Western Art, Tokyo	4
24 Oct – 31 Dec 2026, 14:30 slots	Roger Hiorns, <i>Seizure</i> (weekends, Bank Holidays, school holidays; booking required)	Yorkshire Sculpture Park, Wakefield	20
25 Oct 2026, 19:30	Reich, <i>The Desert Music</i>	Concertgebouw De Vereniging, Nijmegen	19
26–28 Oct 2026	European Water Tech Week	De Harmonie, Leeuwarden	13
27 Oct 2026, 11:20–12:45	“Vortices in water technology: a new frontier”	European Water Tech Week, Leeuwarden	13
27 Oct 2026	“Making Room for Contemplation”	Mind & Life Europe	9
28 Oct 2026, 20:00	Colin Currie Group, Reich at 90, incl. <i>Clapping Music</i>	Barbican Hall, London	8, 19
29 Oct 2026	“Les secrets de la pointe de sagaie” (from €26.90)	Lascaux IV, Montignac	11
29 Oct 2026	Talk by Chris Timmermann	Mind & Life Europe	9
30 Oct 2026	“Soirée art pariétal et gastronomie”, torchlit visit (from €180)	Lascaux IV, Montignac	11
30 Oct 2026, 14–17h	Labyrinth uncovered for walking [unconfirmed]	Chartres Cathedral	14
30 Oct – 1 Nov 2026	Chen Xiaowang seminar	Prague	15
1 Nov 2026	Munich Philharmonic, Reich programme [unconfirmed]	Munich	19
4–7 Nov 2026	Chen Xiaowang seminar	Romania	15
7 Nov 2026, 15:00–16:30	<i>Generative: A Computer Art Documentary</i> ,	V&A, Gorvy Lecture Theatre, London	7

Dates	What	Where	Chapter
	screening and Q&A (free)		
11 Nov 2026	Stone and fossil clinic	Hunebedcentrum, Borger	11
12 Nov 2026, 19-22h	Willem Donker, “De jacht op 4.500 hunebedden”	Hunebedcentrum, Borger	11
12 Nov 2026 – 4 Apr 2027	Dan Flavin	Guggenheim Museum Bilbao	4
12-13 Nov 2026, 20:00	<i>Come Out</i> , choreography Olivier Dubois (sold out)	Fondation Fiminco, Paris	19
12-15 Nov 2026	“Clapping for Steve Reich” focus	Philharmonie de Paris	19
15 Nov 2026	Colin Currie Group, <i>In All Your Ways</i>	Philharmonie de Paris	19
15 Nov 2026	AlloSphere works open, with <i>Falling into the Future</i>	UCSB / MCA Santa Barbara	16, 17
18 Nov 2026	Hyphae Conversations	Mind & Life Europe	9
18-23 Nov 2026	Chen Xiaowang seminar [unconfirmed: town]	Switzerland	15
25 Nov 2026	Talk by Merve Hickok	Mind & Life Europe	9
autumn 2026 [unconfirmed: dates]	Para Orchestra, Reich, <i>Music for 18 Musicians</i>	Southbank Centre, London	19
autumn 2026 [unconfirmed: date]	Guildhall students, Reich, <i>Music for 18 Musicians</i>	Barbican, London	19
1 Dec 2026	Applications open, Mind & Life Summer Research Institute 2027	online	9
2 Dec 2026 – 9 May 2027	<i>Les témoins oculistes. The sense of sight in art</i>	Museum Tinguely, Basel	17
5 Dec 2026, 19:30	LSO Percussion Ensemble, Reich (sold out)	LSO St Luke’s, London	19
19 Dec 2026, 19-21h	“Lichtjesavond bij het grootste hunebed”	Hunebedcentrum, Borger	11
			14

Dates	What	Where	Chapter
c. 19–23 Dec 2026 [unconfirmed: 2026 window]	Winter-solstice sunrise (lottery winners only inside)	Newgrange, Brú na Bóinne	
9 Jan – 11 Apr 2027 (tentative)	<i>Lettering and Art: from Pop Art to Calligraphy</i>	Hokkaido Museum of Modern Art, Sapporo	5
16 Jan 2027	Münchener Kammerorchester, Reich	Pinakothek der Moderne, Munich	19
Feb 2027 [unconfirmed: venue, day]	Philharmonia, Reich, <i>The Desert Music</i> , conductor Rouvali	London	19
from Lent 2027 [unconfirmed]	Labyrinth Fridays resume	Chartres Cathedral	14
27–28 Mar 2027	OERweekend	Hunebedcentrum, Borger	11
late Apr 2027 [unconfirmed]	Synchronous-firefly lotteries expected (displays usually May–June)	Elkmont (TN); Congaree (SC)	19
6–11 Jun 2027	Mind & Life Summer Research Institute	Garrison Institute, New York	9
31 Jul – 1 Aug 2027	OERweekend	Hunebedcentrum, Borger	11
3 Sep 2027 – 2 Jul 2028	James Turrell retrospective (venue to check)	Neue Nationalgalerie or Hamburger Bahnhof, Berlin	4
5 Oct 2027	18th sound change, Cage, <i>ORGAN²/ASLSP</i>	Burchardikirche, Halberstadt	7
autumn 2027 [unconfirmed: date]	VWG meeting on the St. Elisabeth flood of 1421	Dordrecht	12
7–11 Aug 2028	LoF28, international Laws of Form conference	Wolfson College, Cambridge	8

Permanent and open

- James Turrell, *Skyspace*, Museum Voorlinden, Wassenaar. Museum open daily; roof closes in bad weather. Chapter 4.
- James Turrell, *Third Breath*, Zentrum für Internationale Lichtkunst, Unna. Hours unconfirmed. Chapter 4.

- James Turrell, *Hemels Gewelf*, Kijkduin, The Hague. Open-air dune site; no hours or price given. Chapter 4.
- James Turrell, *Cat Cairn: the Kielder Skyspace*, Northumberland. 45-minute walk or barrier key; light programme around sunset. Chapter 4.
- James Turrell, *Skyspace Lech*, Oberlech. Guided tour €15, shuttle €10; winter dates unconfirmed. Chapter 4.
- Escher in Het Paleis, The Hague. Tue–Sun 11:00–17:00; closed 25 Dec and 1 Jan; €8–14.50. Chapter 6.
- Burchardikirche, Halberstadt (Cage, *ORGAN²/ASLSP*). Nov–Mar Tue–Sun 12:00–16:00, Apr–Oct 11:00–17:00; free (hours as of Feb 2025). Chapter 7.
- Hubei Provincial Museum, Wuhan, display “Writing history”. Display of the *Taiyi sheng shui* slips unconfirmed. Chapter 10.
- Göbekli Tepe, Şanhurfa. Hours unconfirmed (08:00–19:00). Chapter 11.
- Laboratory of Tree-Ring Research, Tucson. Docent tours by reservation. Chapter 11.
- Ancient Bristlecone Pine Forest, California. Roads and trails open; visitor centre closed for winter. Chapter 11.
- Grotte Chauvet 2, Vallon-Pont-d’Arc. Daily from 9:30 to 1 Nov 2026, from 10:30 to 3 Jan 2027; closing times vary by source. Chapter 11.
- Lascaux IV, Montignac. Daily to 3 Jan 2027, 9:00–19:00 per lascaux.fr. Chapter 11.
- Tribunal de las Aguas, Valencia Cathedral. Every Thursday 12:00; no ticket. Chapter 12.
- Consejo de Hombres Buenos, Murcia City Hall. Thursdays 9:00–12:00. Chapter 12.
- Qanats of Ghasabeh, Gonabad. Open to the public. Chapter 12.
- Nikola Tesla Museum, Belgrade. Mon 10–18, Tue–Sun 10–20. Chapter 13.
- PKS Schauburger archive, Bad Ischl. By arrangement only (+43-6132-24814). Chapter 13.
- Delphi Archaeological Museum. Winter hours 1 Nov – 31 Mar, 08:30–15:30. Chapter 14.
- Rijksmuseum Boerhaave, Leiden (Coster clock). Phone ahead, 071-751 99 99. Chapters 14 and 19.
- Chen Taijiqian Network Germany, Kulturbrauerei, Berlin. Chapter 15.
- Roman Baths, Bath. 9:00–18:00 on the day checked; closed 25–26 Dec. Chapter 15.
- Gasteiner Heilstollen, Bad Gastein. Hours not shown; phone +43 6434 3753 0. Chapter 15.
- Strandbeesten Mortuary, Kabeldistrict, Delft. Thu 13:00–21:00, Sun 13:00–17:00; free (donation asked). Chapter 16.
- Beverly Clock, University of Otago, Dunedin. Third floor needs a key card. Chapter 16.
- Calder mobile, East Building, National Gallery of Art, Washington. Permanent. Chapter 17.
- Museum Tinguely, Basel, *La roue = c’est tout*. Tue–Sun 11–18, Thu to 21. Chapter 17.
- Eureka Dunes, Death Valley. Remote; last 10 miles on gravel. Chapter 17.

- Kampung Kuantan fireflies, Kuala Selangor. All year, dusk to midnight, by boat. Chapter 19.
 - Huygens Museum / Hofwijck, Voorburg. Thu–Sun 12:00–17:00. Chapter 19.
 - *Fire and Gold: The Art of Alchemy*, Science History Institute, Philadelphia. Permanent from 7 Oct 2026; Wed–Sat 10–5, free. Chapter 20.
 - Embassy of the Free Mind, Amsterdam. Wed–Sun 11–17. Chapter 20.
 - Speculum Alchemiae, Prague. Daily 10:00–18:00, tours every half hour. Chapter 20.
- # Appendix B — Method and score

The protocol

The search followed the Respondent–Judge Protocol (version 1.0, 17 October 2026), adapted from computation to resources. Its two rules are simple. The one who checks must hold what the one who answers lacks. And a prediction counts only if it is fixed before the count.

G1 — Predict. Before any search, a table stated for each open place and each kind of resource whether a resource was expected. Seventeen places and five kinds gave 85 cells: 55 predicted present, 30 predicted absent. The file was sealed with its SHA-256 hash:

765b6d34a9cc0270ae6b1ac1ca2e770ec071a03ee454666fdc703885e36d7591

G2 — Search. Six searchers worked in parallel, one per group of places. They were told not to open the prediction file. Each resource had to be opened at its own address and described with maker, year, address, fit and whether the maker met the phenomenon from inside. A seventh searcher then worked through sixteen gaps the first six had reported. Together they returned 278 resources.

G3 — Judge. Four judges checked the results independently. Each first wrote down, before reading the searchers’ files, the resources it expected to be strongest. Each then re-opened every address itself, checked title, maker, year, dates and access, rated the fit as strong, partial or weak, and checked the inside-experience claim. Each claim received one verdict.

Judge	Rows	Verified	Verified with fixes	Refuted	Gap
Places 1, 2, 3, 4, 6, 7	83	51	32	0	0
Places 5, 8, 12, 15, 16, 17	88	59	28	0	1
Places 9, 10, 11, 13, 14	61	46	14	0	1
Gap round	68	33	18	2	15
Total	300	189	92	2	17

The gap round has more rows than resources because the judge also checked the searcher’s reports of what was not found. The two refuted items were concert listings: one wrong venue and date, and one false “not found”. Both were corrected. No resource was found to be invented.

The judges added 31 resources the searches had missed. Among them are Pólya's paper of 1921 and Doyle and Snell. Others are Kauffman and Varela's "Form Dynamics", Varela's *Principles of Biological Autonomy*, Collins on the TEA laser, Webb on the fine-structure constant, Schaffer on the ohm, Kelly's *The Memory Code*, Nunn's *The Edge of Memory*, Mishra on the water systems of Rajasthan, Glass and Mackey, Feldenkrais, Haacke's *Condensation Cube*, Snelson's *Needle Tower*, the Kelvin water dropper, Pantaleone on metronomes, and Fontana.

G4 — Score. A cell was scored as met only if at least one resource of that kind was verified and rated more than a weak fit, and, for exhibitions, ran on or after 21 October 2026. The scorer checked the prediction hash before comparing.

The score

	Count
Cells	85
Prediction right	68 (80.0 %)
Found, though predicted absent	11
Predicted present, not found	6
Cells met	60

Found, though predicted absent: films for light as location, arising by return, the self-reading form, poised matter and the store that shows nothing. Also exhibitions for the self-reading form, perpetual circulation and poised matter; places for the self-reading form, poised matter and the store that shows nothing.

Predicted present, not found: art for random but bound, arising by return, the past in the present shape and the resource as a fit; films for perpetual circulation and matter by selection.

What the score says

The prediction underestimated how far the strangest places are already met in art and film. Escher, Goldsworthy, Iimura and Cage carry several of them. It overestimated art for places that live in practice: commons, memory and the oldest Daoist text. Practice keeps them; galleries do not.

The weakest cell is random but bound. Five of its thirteen first resources were works on chance. The judge rated them analogies. Only the mathematics meets the place, and the mathematics leaves open the one question that matters: where three dimensions come from.

Limits

The search ran on one day, 21 October 2026. Dates of exhibitions and events were correct on that day. Some pages could not be read: the Rietberg, SMB Berlin and Wereldmuseum programmes among them. A shared limit on web searches was reached during the first round; the gap round recovered most of what was lost. Searches ran in English, with some German, French, Dutch, Spanish, Russian and Chinese sources.

Respondents and judges were instances of the same model. They catch slips and errors, as the corrections show. They do not catch a blind spot of the model itself. Each judge's own list of expected resources, written before reading, is the one guard against that here.