

Zen and the Art of Maxwell: The Place of Propagation

A correspondence note on electromagnetic transport, Zen analogy, and informational persistence

Peter M. Austin*

Information Physics Institute

Correspondence note, May 2026

Abstract

This correspondence note offers a controlled analogy between electromagnetic propagation and Zen concepts of openness, receptivity, passage, and record. It begins by narrowing the claim: the argument is not a literal theory of consciousness, not a modification of Maxwell's equations, and not a measurable law of metaphysical propagation. The physical anchor is standard Maxwell theory: classical light is propagating electromagnetic field structure; the electric and magnetic fields store and transport energy; and the vacuum constants set the speed and impedance of electromagnetic propagation. The interpretive reading then treats ε as receptivity and μ as field-depth, *mu*, or *basho*: the open place in which relation can arise. The result is a compact metaphorical notation for thinking about passage, appearance, and informational persistence.

Keywords: Maxwell equations; Zen philosophy; Electromagnetic propagation; Structural analogy; Informational persistence; Philosophy of physics.

Purpose

The wider light/matter note has several layers: Maxwell theory, photons, pair production, topology, physiology, and Recursive Survival Geometry. This shorter note keeps one thread:

What does the standard propagation form $v = 1/\sqrt{\mu\varepsilon}$ suggest when read as a Zen metaphor for passage through openness and receptivity?

The answer should remain two-sided. On one side, Maxwell's equations are ordinary physics [1, 2]. On the other, the Zen reading is a structural analogy. The analogy is worth keeping because it does not treat emptiness as a blank container. It treats openness as a condition in which relation can move.

Scope and Non-Claims

This note does not propose a theory of consciousness. It does not modify Maxwell theory. It does not claim that light is awareness, that awareness is electromagnetic radiation, or that consciousness propagates at or near the speed of light. It does not introduce a measurable metaphysical propagation speed.

*Corresponding author: peter.austin@informationphysicsinstitute.net.

The symbolic expressions below are therefore non-predictive. They are definitions inside an analogy unless explicitly marked as standard physics. Their purpose is to preserve a correspondence between Maxwellian propagation and Zen language about openness, receptivity, passage, and record.

Opening Intuition

The Zen-side bibliography for this note is deliberately narrow: Wumen Huikai's *Wumen Guan/Mumonkan*, usually translated as *The Gateless Gate*, as the koan handbook for *mu*, and Yamamoto Tsunetomo's *Hagakure* as a personal and martial-philosophical source for the note [3, 4]. The immediate IPI context also includes Nicholson's essay on consciousness and uncertainty [5]. A notation table is provided in Table 1.

The following passage is retained as Austin's originating article-seed. It is intentionally left in its essayistic register, because the rest of the note exists to discipline, frame, and test this intuition rather than erase it.

Austin's Seed Passage

John Nicholson, Iain Franklin and Jim Kelley are acknowledged here as important spurs to the thought: through their writing and discussions, they helped keep this question open enough for Maxwell's relation to be read beyond its technical setting, without abandoning the technical setting itself.

We begin with the Maxwell-derived propagation relation [1]:

$$v = \frac{1}{\sqrt{\mu\varepsilon}}.$$

If we say μ is the Zen concept of nothingness, then ε can be thought of as some kind of self-awareness.

If permittivity measures how much a material resists the formation of an electric field, or how well it allows polarisation, it also represents the ability of a medium to store electrical energy. If ε is consciousness, it serves as the "active" component: the capability to perceive, resonate, or be "polarised" by existence.

Permeability measures how well a material allows magnetic field lines to pass through it, or its ability to support a magnetic field. If μ is nothingness, *mu*, it represents the "field" or "place", *basho*, wherein existence and consciousness occur. In Zen philosophy, *mu* is not a complete absence, but a "pure awareness, prior to experience or knowledge" and a "boundless, unconditioned state that precedes and contains all existence". Sounds rather familiar.

The velocity at which consciousness travels, propagates, or manifests depends between its capacity to be aware, ε , and the emptiness/field, μ , through which it is moving. The constant/coefficient c : in a pure vacuum, the values are ε_0 and μ_0 , and the equation produces the speed of light,

$$c \approx 3 \times 10^8 \text{ m/s.}$$

This implies that ultimate, unobstructed consciousness, in absolute vacuum/emptiness, operates at the maximum possible speed allowed by the universe.

Is that a dream/being in phase space?

But, the equation can describe the dynamic speed of “being”, or how rapidly awareness, consciousness, flows through the void, absolute nothingness.

If the nothingness becomes “dense”, high μ , the manifestation of consciousness becomes slower or more constricted. If it is pure, empty vacuum, minimal μ , the consciousness moves at the speed of light.

So perhaps the question is not whether consciousness “travels” like light in the ordinary sense, but whether light is the clearest physical example we have of awareness without attachment: motion without rest, propagation without possession, presence without accumulation.

If ε is the capacity to be affected, and μ is the open field in which being can arise, then c is not merely a speed. It is the limiting harmony between receptivity and emptiness. Too much resistance in either term and manifestation slows, thickens, becomes local, becomes informational/matter-like, like freezing light [6]. In the purest case, where nothing obstructs and nothing clings, awareness is not trapped into a rest frame. It simply propagates.

That may be the phase-space dream: not a mind inside the void, and not a void without mind, but a relation between them. Being appears where awareness and emptiness are coupled. Light is what that relation looks like when it is perfectly unburdened.

Or, put less dramatically: Maxwell may have accidentally written a very good Zen equation.

I know this is half physics, half metaphor, and probably wholly dangerous if taken too literally. But it feels like there is something useful in the mapping: ε as susceptibility, μ as field-depth, c as the unconstrained propagation limit, and phase as the condition of being able to appear at all.

The document now takes this passage as its seed. First it states the Maxwell layer in ordinary physics. Only after that does it return to the Zen reading as an analogy rather than a physical claim.

Claim lock. The seed passage motivates the correspondence. It is retained in its essayistic register, but it is not the paper’s physical claim. Its stronger consciousness-language is not used as a technical claim in the formal sections below. No consciousness speed, Maxwell modification, or metaphysical propagation law is proposed here. The sections that follow separate standard electromagnetism, structural analogy, and future bridge notation.

Editorial Framing of the Seed

In an ideal, homogeneous, nondispersive, lossless medium, the electromagnetic wave speed may be written as

$$v = \frac{1}{\sqrt{\mu\varepsilon}}. \tag{1}$$

Equation (1) is standard physics only under the stated assumptions. In real media, ε and μ may be frequency-dependent, tensorial, dispersive, lossy, or complex.

The analogy begins by allowing the two physical response terms to be read structurally. Permittivity, ε , describes electric response and energy storage in the physical layer. In the interpretive layer, it can stand for receptivity: the capacity to be affected, polarised, or brought into relation. Permeability, μ , describes magnetic response in the physical layer. In the interpretive layer, it can stand for field-depth: *mu* or *basho*, the open place in which relation can appear.

This does not mean that receptivity is literally permittivity, or that μ is literally permeability. The mapping is a candidate correspondence, not an identity, reduction, or derivation:

$$\varepsilon \longleftrightarrow \text{receptivity}, \quad (2)$$

$$\mu \longleftrightarrow \text{field-depth, } \mu, \text{ or } \textit{basho}, \quad (3)$$

$$v \longleftrightarrow \text{communicable passage.} \quad (4)$$

These three lines are analogies. They do not add new terms to electromagnetism and they do not define measurable variables in consciousness studies.

Read this way, the speed of light is not treated as a speed of mind. It is the physical limiting image that motivates the metaphor: light is propagation without possession, presence without accumulation, and transport before record. The question is not whether mind moves in the same way as light. The question is whether light gives a disciplined physical image for thinking about relation before it hardens into a persistent mark.

Symbolic Notation of the Opening Intuition

The opening intuition can be written as a deliberately symbolic notation. The equations in this section are metaphorical definitions unless otherwise marked. They are not physical laws and do not predict independent observables.

Symbol group	Status	Use in this note
$\mathbf{E}, \mathbf{B}, \rho_q, \mathbf{J}, \varepsilon_0, \mu_0, c, Z_0, u, \mathbf{S}$	standard physics	Imported from Maxwellian electromagnetism. These symbols anchor the physical layer.
$\varepsilon_Z, \mu_Z, K, P_{\text{rel}}, \alpha_\varepsilon, \alpha_\mu, n_{\text{rel}}, v_{\text{rel}}, Z_{\text{rel}}$	metaphorical definition	Internally defined analogy variables. They are not empirical inputs unless future work supplies operational definitions.
$\Delta\varphi, \chi_{\text{app}}, \chi_{\text{rec}}$	speculative bridge notation	A compact way to discuss passage and record. These terms are not testable thresholds in the present note.

Let

$$\varepsilon_Z \longleftrightarrow \text{receptivity; capacity to be affected}, \quad (5)$$

$$\mu_Z \longleftrightarrow \mu; \text{ field-depth; openness; } \textit{basho}. \quad (6)$$

These are interpretive correspondences. They borrow the position of ε and μ in the Maxwell form, but they are not physical material parameters.

Define a passage index

$$P_{\text{rel}} \equiv \frac{K}{\sqrt{\mu_Z \varepsilon_Z}}, \quad (7)$$

where K is not a new physical constant. It is a symbolic normalising placeholder for the limiting condition of least obstruction.

Equation (7) is a metaphorical definition. It replaces literal-speed language with an interpretive passage index.

For comparison, the physical vacuum relation is

$$c = \frac{1}{\sqrt{\mu_0 \varepsilon_0}}. \quad (8)$$

Equation (8) is the standard vacuum electromagnetic propagation relation in this notation. It anchors the analogy physically; it does not define a metaphysical speed of awareness.

The analogy can then be stated without assigning a literal speed to awareness:

$$\mu_Z \varepsilon_Z \downarrow \Rightarrow P_{\text{rel}} \uparrow, \quad \mu_Z \varepsilon_Z \uparrow \Rightarrow P_{\text{rel}} \downarrow. \quad (9)$$

Equation (9) is an analogy. It says only that, in the metaphor, passage is imagined as freer when receptivity and field-depth are less obstructive.

Phase can then be used as a symbolic condition of appearing. Let φ denote the phase of a relation, and let $\Delta\varphi$ denote unresolved difference, tension, or mismatch. A relation remains passage while

$$\mu_Z \varepsilon_Z |\Delta\varphi| < \chi_{\text{rec}}. \quad (10)$$

When

$$\mu_Z \varepsilon_Z |\Delta\varphi| \geq \chi_{\text{rec}}, \quad (11)$$

the relation begins to leave a record.

Equations (10) and (11) are speculative bridge notation. They do not define a measurable threshold unless a later, domain-specific theory supplies independent meanings for μ_Z , ε_Z , $\Delta\varphi$, and χ_{rec} . The same record-threshold notation is used again in the passage-to-record section below.

Maxwell Layer

The ordinary physics should now be stated before the analogy travels any further. In Maxwell's theory, light is not a substance moving through a passive void. It is a propagating electromagnetic field configuration. Standard modern treatments of the electromagnetic layer are given, for example, by Jackson [2].

The point for this note is simple: changing electric field and changing magnetic field sustain one another. In empty space, that mutual field structure supports waves. The constants ε_0 and μ_0 do not make light mystical or material by themselves. They set the electromagnetic terms under which vacuum propagation occurs.

In SI notation, Maxwell's equations are

$$\nabla \cdot \mathbf{E} = \frac{\rho_q}{\varepsilon_0}, \quad (12)$$

$$\nabla \cdot \mathbf{B} = 0, \quad (13)$$

$$\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}, \quad (14)$$

$$\nabla \times \mathbf{B} = \mu_0 \mathbf{J} + \mu_0 \varepsilon_0 \frac{\partial \mathbf{E}}{\partial t}. \quad (15)$$

Here \mathbf{E} is the electric field, \mathbf{B} is the magnetic field, ρ_q is charge density, \mathbf{J} is current density, ε_0 is vacuum permittivity, and μ_0 is vacuum permeability. The charge-density notation ρ_q is used to avoid later confusion with dimensionless analogy variables.

In empty space,

$$\rho_q = 0, \quad \mathbf{J} = 0. \quad (16)$$

The equations reduce to

$$\nabla \cdot \mathbf{E} = 0, \quad (17)$$

$$\nabla \cdot \mathbf{B} = 0, \quad (18)$$

$$\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}, \quad (19)$$

$$\nabla \times \mathbf{B} = \mu_0 \varepsilon_0 \frac{\partial \mathbf{E}}{\partial t}. \quad (20)$$

Taking the curl of Faraday's law and using the Ampere–Maxwell law gives the wave equation

$$\nabla^2 \mathbf{E} - \mu_0 \varepsilon_0 \frac{\partial^2 \mathbf{E}}{\partial t^2} = 0, \quad (21)$$

and similarly

$$\nabla^2 \mathbf{B} - \mu_0 \varepsilon_0 \frac{\partial^2 \mathbf{B}}{\partial t^2} = 0. \quad (22)$$

These are standard wave equations with vacuum propagation speed

$$c = \frac{1}{\sqrt{\mu_0 \varepsilon_0}}. \quad (23)$$

Equations (21)–(23) are standard physics. They are the classical anchor of the note. They do not turn light into matter or consciousness; they express the electric and magnetic structure of vacuum electromagnetic propagation in the chosen notation.

Storage and Transport

Maxwell's field already contains a storage-and-transport picture. The electromagnetic energy density is

$$u = \frac{1}{2} \left(\varepsilon_0 |\mathbf{E}|^2 + \frac{|\mathbf{B}|^2}{\mu_0} \right), \quad (24)$$

and the Poynting vector is

$$\mathbf{S} = \frac{1}{\mu_0} \mathbf{E} \times \mathbf{B}. \quad (25)$$

Equations (24) and (25) are standard physics. The first expression says that the field stores energy. The second says that the field transports energy. Before the photon appears as a quantum excitation, classical light is already field energy in passage.

The vacuum impedance is

$$Z_0 = \sqrt{\frac{\mu_0}{\varepsilon_0}} = \mu_0 c. \quad (26)$$

Equation (26) is standard physics. It matters for the metaphor because speed and impedance are different ideas. A medium may alter propagation speed; it may also alter how fields couple across a boundary. In the later Zen notation, this distinction becomes useful: slowing, thickening, reflection, and record are not the same event.

Photon Layer

In the quantum description, photons are quanta of the electromagnetic field [7]. A photon is not a little pellet travelling through an empty container. It is a quantum excitation of that field, with energy

$$E_\gamma = \hbar\omega, \quad (27)$$

and momentum

$$p = \hbar k. \quad (28)$$

For a photon in vacuum,

$$E_\gamma = pc. \quad (29)$$

Equations (27)–(29) are standard quantum notation. They are included only to mark the transition from classical field transport to quantised field excitation.

The important sequence is therefore:

Maxwell	field structure	electromagnetic transport,
Planck/Einstein	quantisation	photon energy and momentum,
QFT	field excitation	photons as quanta of the electromagnetic field.

Zen Reading

After the Maxwell anchor, the Zen terms can be used without pretending they are physics. In the interpretive register used here, *mu* is read not as blank absence but as no-thingness: openness before a fixed object has been carved out. *Ma* is interval, the meaningful between. *Basho* is place, the condition in which appearing can occur.

The compact mapping is:

$$\varepsilon \longleftrightarrow \text{receptivity}, \quad (30)$$

$$\mu \longleftrightarrow \text{field-depth, } mu, \text{ or } basho, \quad (31)$$

$$v \longleftrightarrow \text{rate of communicable relation.} \quad (32)$$

This mapping is a structural analogy, not an identity, reduction, or derivation. It neither constrains Maxwell theory nor supplies an empirical model of consciousness. Its value is rhetorical and structural: appearance is not merely something travelling through emptiness; it is relation moving through openness that can respond.

Dimensionless Zen Notation

Let the metaphor be written in dimensionless form:

$$\alpha_\varepsilon = \frac{\varepsilon}{\varepsilon_0}, \quad \alpha_\mu = \frac{\mu}{\mu_0}. \quad (33)$$

Equation (33) is a definition. In physical electrodynamics these ratios would be relative permittivity and relative permeability under the usual assumptions. In the Zen notation, α_ε and α_μ are dimensionless metaphorical ratios. They are not measured material constants unless a future operational model supplies such a bridge.

Define the relational index

$$n_{\text{rel}} = \sqrt{\alpha_\varepsilon \alpha_\mu}. \quad (34)$$

The symbolic propagation rate is

$$v_{\text{rel}} = \frac{c}{n_{\text{rel}}} = \frac{c}{\sqrt{\alpha_\varepsilon \alpha_\mu}}. \quad (35)$$

Equations (34) and (35) are metaphorical definitions. The symbol v_{rel} is retained because it mirrors the Maxwell form, but it is not a new physical velocity. It names an interpretive rate of communicable relation.

The impedance-like companion is

$$Z_{\text{rel}} = \sqrt{\frac{\alpha_\mu}{\alpha_\varepsilon}}. \quad (36)$$

Equation (36) is also a metaphorical definition. It separates thickness from mismatch. If α_ε and α_μ rise together, n_{rel} can increase while Z_{rel} remains balanced. In plain language: experience may deepen without necessarily becoming obstructed.

These definitions do not produce predictions. They only give compact notation to the interpretive claim that relation propagates most freely when neither receptivity nor field-depth traps it into excessive mediation.

Passage and Record

For this note, a record means informational persistence: a durable state change that can be retrieved, acted upon, or made relevant to subsequent relations. This deliberately narrow use avoids collapsing physical absorption, phenomenological memory, objecthood, and physiological state change into a single threshold.

Experiments on halted light pulses in atomic media are therefore best treated as physical examples of coherent optical information storage in a medium, not as evidence that passage has become consciousness or matter [6].

To express the moment where passage becomes record, introduce a schematic appearance coupling:

$$\chi_{\text{app}} = \alpha_{\varepsilon} \alpha_{\mu} |\Delta\varphi|. \quad (37)$$

Here $\Delta\varphi$ is a phase difference, disturbance, or unresolved tension. Let χ_{rec} be the threshold for informational persistence.

Equation (37) is a speculative bridge definition. It is not a measurable criterion unless a later theory supplies independent measurements for α_{ε} , α_{μ} , $\Delta\varphi$, and χ_{rec} .

If

$$\chi_{\text{app}} < \chi_{\text{rec}}, \quad (38)$$

the relation remains passage.

If

$$\chi_{\text{app}} \geq \chi_{\text{rec}}, \quad (39)$$

the relation leaves a record in the narrow sense of informational persistence.

Equations (38) and (39) are symbolic distinctions, not falsifiable physical thresholds. They help name a transition in the analogy: passage moves on; record remains available to future relations.

The symbolic picture is:

low coupling	passage	relation moves on,
balanced coupling	experience	relation holds without hardening,
threshold crossing	record	relation persists as information.

Possible Extension: Recursive Survival Geometry

Recursive Survival Geometry is not developed in this note. If used later, it could provide a separate framework for distinguishing transport, recurrence, localisation, and survival-weighted persistence. In that possible extension, Maxwell would supply the classical transport channel,

the photon would mark the quantised unit of that channel, and matter-like behaviour would begin where energy enters histories that can localise, recur, interact, and persist.

For the present note, the RSG gloss is future bridge language only:

Light can be used as an image of passage before possession, while matter can be used as an image of passage that has crossed into persistence.

This sentence is not a physical derivation or a result established by the present note. It is a possible future bridge between open transport and record-bearing structure.

Closing

Maxwell’s propagation relation is not a Zen equation in the literal sense. It is a disciplined physical form that can be read as an unusually clear analogy: propagation depends not only on what moves, but on the responsiveness of the place through which movement becomes possible.

In the physical layer, ϵ_0 and μ_0 set the structure of vacuum electromagnetic transport. In the Zen layer, receptivity and field-depth name the conditions under which appearance can move, thicken, or leave a record.

The point is not that consciousness is electromagnetic radiation. The point is quieter: light gives a physical image of unpossessed propagation, and matter gives a physical image of propagation that has crossed into persistence.

Acknowledgements

The author thanks John Nicholson, Iain Franklin, and Jim Kelley for correspondence that helped shape the opening question. The author also thanks Antonio Marie, Parlour, and Gedo Chang for tuition and insight relevant to the Zen and martial-philosophical sources of the note.

Notation

Table 1: Notation used in this note.

Symbol	Name	Meaning in this note
E	Electric field	Classical Maxwell field associated with electric force and electric energy storage.
B	Magnetic field	Classical Maxwell magnetic field, or magnetic flux density in SI notation. It is paired with E in electromagnetic propagation.
ρ_q	Charge density	Source term in Maxwell’s equations. The subscript distinguishes it from the later metaphorical ratios.
J	Current density	Source term for moving charge in the Ampere–Maxwell equation.
ϵ_0	Vacuum permittivity	SI vacuum constant appearing in the standard electromagnetic propagation relation. It is not Zen receptivity.

continued on next page

Table 1: Notation used in this note, continued.

Symbol	Name	Meaning in this note
μ_0	Vacuum permeability	SI vacuum constant appearing in the standard electromagnetic propagation relation. It is not Zen <i>mu</i> .
c	Vacuum light speed	$c = 1/\sqrt{\mu_0\varepsilon_0}$ in this notation. This is the physical propagation speed for light in vacuum, not a metaphorical speed.
Z_0	Vacuum impedance	$Z_0 = \sqrt{\mu_0/\varepsilon_0} = \mu_0c$. It describes how electric and magnetic field amplitudes are related in free-space propagation.
u	Energy density	Electromagnetic energy stored locally in the field.
\mathbf{S}	Poynting vector	Electromagnetic energy flux: the direction and rate of field-energy transport.
E_γ	Photon energy	Scalar photon energy, $E_\gamma = \hbar\omega$. The subscript prevents confusion with the electric field \mathbf{E} .
p	Momentum	Photon momentum, $p = \hbar k$, with $E_\gamma = pc$ for a photon in vacuum.
ω	Angular frequency	Frequency measure used in $E_\gamma = \hbar\omega$.
k	Wavenumber	Spatial frequency measure used in $p = \hbar k$.
\hbar	Reduced Planck constant	Quantum conversion factor relating angular frequency to energy and wavenumber to momentum.
v	Medium propagation speed	$v = 1/\sqrt{\mu\varepsilon}$. In physics this is the wave speed in a material medium under the relevant ideal assumptions.
ε	Permittivity	In the physical layer, electric response of a medium. In the Zen reading, receptivity: the capacity to be affected or polarised by relation.
μ	Permeability	In the physical layer, magnetic response of a medium. In the Zen reading, field-depth: openness, <i>mu</i> , or <i>basho</i> .
mu	No-thingness	Openness before fixed objecthood. It is not a blank absence, but a condition in which appearing can arise.
ma	Interval	The meaningful between: spacing, timing, and relational interval, readable in both discrete/recursive and continuous/differential ways.
<i>basho</i>	Place	The place or condition of appearing. In this note it names openness as an enabling field, not an empty container.
ε_Z	Zen receptivity	Metaphorical receptivity or capacity to be affected. This is not physical permittivity.
μ_Z	Zen field-depth	Metaphorical openness, <i>mu</i> , or <i>basho</i> . This is not physical permeability.
K	Symbolic normaliser	Placeholder for the limiting condition of least obstruction. It is not a new physical constant.

continued on next page

Table 1: Notation used in this note, continued.

Symbol	Name	Meaning in this note
P_{rel}	Passage index	$P_{\text{rel}} = K/\sqrt{\mu_Z \varepsilon_Z}$. A metaphorical index replacing literal-speed language.
$\alpha_\varepsilon = \varepsilon/\varepsilon_0$	Receptivity ratio	Dimensionless metaphorical receptivity ratio in the symbolic notation. It avoids overloading the charge-density symbol.
$\alpha_\mu = \mu/\mu_0$	Field-depth ratio	Dimensionless metaphorical field-depth ratio in the symbolic notation.
n_{rel}	Relational index	$n_{\text{rel}} = \sqrt{\alpha_\varepsilon \alpha_\mu}$. A symbolic index for how mediated the relation has become.
v_{rel}	Relational propagation rate	$v_{\text{rel}} = c/n_{\text{rel}} = c/\sqrt{\alpha_\varepsilon \alpha_\mu}$. A metaphorical rate for communicable relation, not a new physical velocity.
Z_{rel}	Relative impedance	$Z_{\text{rel}} = \sqrt{\alpha_\mu/\alpha_\varepsilon}$. A symbolic companion to n_{rel} , used to separate depth from mismatch.
$\Delta\varphi$	Phase difference	Disturbance, tension, or unresolved phase relation in the passage-to-record notation.
χ_{app}	Appearance coupling	$\chi_{\text{app}} = \alpha_\varepsilon \alpha_\mu \Delta\varphi $. Schematic measure for when relation begins to press toward record.
χ_{rec}	Record threshold	Schematic threshold at which passage becomes informational persistence.
$\chi_{\text{app}} < \chi_{\text{rec}}$	Passage condition	Relation remains passage: phase moves on without leaving a durable informational record.
$\chi_{\text{app}} \geq \chi_{\text{rec}}$	Record condition	Relation crosses into informational persistence.
Passage	Open transport	Relation moves without possession. In the physical analogy, light-like transport is the guiding image.
Record	Informational persistence	A durable state change that can be retrieved, acted upon, or made relevant to later relations.
RSG	Recursive Survival Geometry	Possible extension framework for transport, recurrence, localisation, and survival-weighted persistence. It is not developed in this note.
Light-like propagation	Future RSG bridge vocabulary	Possible future label for non-closing transport. It is not established as a result of this note.
Matter-like persistence	Future RSG bridge vocabulary	Possible future label for localised or recurrent survival-weighted structure. It is not established as a result of this note.

References

- [1] James Clerk Maxwell. *A Treatise on Electricity and Magnetism*. Clarendon Press, Oxford, 1873.
- [2] John David Jackson. *Classical Electrodynamics*. 3rd ed. Wiley, New York, 1999.
- [3] Wumen Huikai. *No-Gate Gateway: The Original Wu-Men Kuan*. Translated by David Hinton. Shambhala, Boulder, 2018.
- [4] Yamamoto Tsunetomo. *Hagakure: The Book of the Samurai*. Translated by William Scott

Wilson. Kodansha International, Tokyo; distributed in the United States by Harper & Row, New York, 1979.

- [5] John Glen Nicholson. *An Uncertain Perspective on Consciousness*. IPI Letters, 2(3):O1–O8, 2024.
- [6] Chien Liu, Zachary Dutton, Cyrus H. Behroozi, and Lene Vestergaard Hau. Observation of coherent optical information storage in an atomic medium using halted light pulses. *Nature*, 409:490–493, 2001. doi:10.1038/35054017.
- [7] Rodney Loudon. *The Quantum Theory of Light*. 3rd ed. Oxford University Press, Oxford, 2000.