

From Physical Comparison to Relational Appearance

A Defeasible Current-Act Account

Jeremy Rodgers

Independent Researcher

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Abstract

When a person compares apparent sizes, what warrants saying that the relation actually appears, and that the organised physical activity bears that appearance? This paper defends an answer through two distinct warrants. Within a specified, continuing human visual-comparison setting, sensory calibration and ordinary appearance-directed evidence support a revisable expectation of current relational presentation. A separately defended concrete-performance principle supports treating that qualitative way as a mode of the materially tracked comparison itself. A worked retrospective illustration from an archived contextual-size task shows how these warrants separate and combine. Prior archive exposure and the absence of dedicated jointness and sensory-basing probes limit its evidential force; it is not prospective validation. First construction at current uptake is compatible with the claim. The decisive remaining constitutive limitation is that an empirically equivalent account can grant the same appearance and activity while assigning qualitative instantiation to an exclusive bearer. The physical attribution therefore depends on the contestable performance principle, rather than on the supporting mathematics. The result is a scoped positive argument about actual current appearance, not a general law deriving experience from physical organisation.

Keywords: relational appearance; phenomenal unity; physical constitution; event identity; sensory comparison; causal realisation.

1 Relational appearance and the connecting problem

A person looks at two objects and compares their apparent sizes. A physical system acquires signals, combines information, retains a descriptor and produces an answer. The relation between these descriptions is the problem of this paper. The physical sequence can be present without yet establishing that two qualitative counterparts and their relation are presented together. Conversely, accepting a current appearance does not identify which physical event bears it. The central question is how an independently specified organisation can support an actual relational presentation and a warranted attribution of its bearer.

The claim is that, in a continuing adult human visual comparison, there is reason to regard the presented relation as a way that the organised physical comparison itself occurs. This matters because producing the right answer, undergoing a sensory presentation and bearing that presentation are different achievements. The argument uses two warrants. Sensory calibration and ordinary evidence about what the person is doing support the occurrence of a current relational presentation. A general principle for tracking the concrete activity then supports attributing its qualitative way to the materially tracked performance. Both warrants

are defeasible: relevant contrary evidence or a better constitutive account can overturn them. Their combination is a positive argument, with a defended philosophical premise at its centre.

The relevant *native-human* setting uses the participant’s own biological sensory and control organisation, in a materially continuing preparation. A *qualitative mode* means how an activity is actually undergone, rather than a message or product it emits. Physical eligibility is specified before interpreting the present appearance evidence. These restrictions keep the inference inspectable without claiming that a physical transition table alone establishes appearance or that every system producing the same answer qualifies.

This addresses an outstanding obligation in the relational-awareness programme. Earlier work distinguishes source organisation, accessible readout and perspective, and proposes conditional relations between native structure and experience (Rodgers, 2026e,f,h,c). Even a valid conditional assignment leaves a further obligation: its appearance-facing premise needs support beyond the assignment it licenses. The present contribution pursues that obligation through current human activity. The background concepts are introduced here; acceptance of the programme’s wider awareness-first ontology or its complete structural admission rules is unnecessary.

1.1 What must actually appear

Definition 1.1 (Relational appearance). Relational appearance is an occurrence in which qualitative counterparts are presented together with a relation or arrangement among them. A counterpart is something as it appears within that presentation; it need not be an enduring external object or a preserved earlier phenomenal token.

For example, two differently situated apparent magnitudes may be jointly presented in a spatial scene. A subsequent proposition, “they are different”, can describe that presentation but is not identical with it. A person may instead experience only one remembered size, then another, and infer the proposition. Relationally meaningful language can itself appear without displaying the original poles: understanding that a mountain is taller than a hill need not present two visual heights together. The target therefore exceeds a relation bit, verbal competence or informational dependence.

It is also weaker than a universal theory of phenomenal fusion. An appearance generated at current comparison can contain new counterparts related within a new presentation. The old sensory tokens, their subjects or their physical carriers need not merge. Nor must the counterparts be experienced as one object. Two segregated objects can appear together; integration into a single attributed object and joint presence within a field are different questions. Experimental grouping and feature-integration measures accordingly bear on particular forms of organisation rather than defining minimal relational appearance (Vogelsang et al., 2024).

An externally described correlation is different again. Two registers can jointly encode a parity without any accepted phenomenal target. The investigator’s ability to describe their relation does not install that relation as an appearance in either register or in their union. Such a physical model is valuable when it specifies a mechanism or tests a proposed law; its informational relations are not observations of consciousness.

1.2 Presented form already has relational aspects

The minimal target does not require two separately recognised objects. A genuinely presented spatial form, with sufficient presented resolution for at least two apparent localities or directions, has those aspects in an arrangement. Taking two such aspects from that same presentation does not require combining two earlier experiences or first identifying them by

name. A resolved visible outline can therefore support the thin relational minimum even when it is experienced as one object.

The argument begins from credible evidence of presented extent. Physical size, a successful shape label or an investigator’s partition of an image is insufficient. It also establishes no unity among otherwise separate fields. Its value is to remove an unnecessary multi-object requirement, rather than to infer consciousness from geometry. Supplement Module I develops the argument and its limits. This is consistent with the distinction between pre-reflective appearance and recognised personal experience: the relevant arrangement can be present without already being described as a red square or as an event in one’s history.

1.3 Five questions that must not be collapsed

Occurrence asks whether anything of the target kind actually appears. *Jointness* asks whether the qualitative counterparts and their relation are together in a presentation, rather than separately available for inference. *Activity or basing* asks whether this appearance is the sensory way of the particular comparative activity under discussion, rather than a concurrent field accompanying an automated answer. *Timing* asks when the appearance occurs, distinguishing physical event time from represented temporal content. *Bearer* asks which concrete event or organisation instantiates that qualitative way.

These questions interact without becoming interchangeable. A recorded response can support a current deadline on the ordinary interpretation of the task, but not the first onset. Selective stimulation can show a causal role in producing content without establishing that the stimulated site is the whole bearer. An animal can own an experience without the animal’s entire lifespan being identical with its current sensory performance. A retained description may suffice to generate a later presentation without having borne an earlier one.

The term *physical engagement* refers here to an organised activity at an explicit grain, including relevant acquisition, transformation and uptake. Correlation strength alone does not fix its boundary. Instruments that execute part of the act, and relevant world relations, may be constitutive of a spatially distributed performance. A container that includes a possible bearer is not thereby the bearer of the activity.

1.4 A serious delayed rival

Consider two accounts with the same acquisition, computation, bounded memory and reporting process. On an early account, a relational scene occurs during integration *I*. On a delayed account, the system stores an adequate relational summary and first constructs a joint scene during current inspection or judgment *J*. Both can subsequently produce the same testimony. The delayed account does not need an unlimited movie archive, a special law for every trial, or an absence of genuine current acquaintance. A generic parser acting on a bounded descriptor can construct new counterparts at *J*.

If the accounts stipulate the same observable likelihoods, refitting those observations cannot select their phenomenal stage assignment. This limitation calls for a different warrant; it is not a universal impossibility theorem about consciousness. The present argument targets current relational appearance, which both accounts can accept, and separates the positive occurrence inference from the constitutive attribution. An early onset is not a condition of success for this target.

The paper develops that route in seven sections. Section 2 recovers the motivating philosophical distinctions and earlier connecting proposals. Section 3 explains what formal constraints and sensory evidence contribute. Section 4 defends concrete-performance mode place-

ment. Section 5 works through a retrospective illustration. Section 6 separates the strongest objections. Section 7 states the achieved scope and broader consequences. Essential inference and finalisation proofs are included in the appendices; the technical supplement develops the additional mathematics, evidence and philosophical alternatives.

2 Awareness, scaffolding and earlier connecting principles

2.1 Fundamental awareness and differentiated presentation

The motivating account takes awareness as fundamental: the knowing aspect of reality is not first produced by a reflective self-description. The monograph denotes reality prior to the operational source/readout distinction by U ; this is not a separately acting observer. Differentiated presentation, on this proposal, arises within that basis through contrast, relation and the organisation of access. Awareness, sensory appearance, reflective recognition, appropriation as *my* experience, and a later account of what happened have different explanatory roles. Those roles can occur together within one ongoing activity; distinguishing them does not require a succession of separate experiential stages.

This is an explicit philosophical starting point, not the conclusion of the physical models below. Granting fundamental awareness does not yet specify which differentiated process presents a relation, whether several contributors share one presentation, or which concrete activity bears it. The current-act argument addresses a local part of that further obligation. Its sensory and constitutive warrants can be assessed without accepting the entire awareness-first ontology (Rodgers, 2026e,c).

2.2 Organisation, apparatus and acquired scaffolding

A list of ingredients is often inadequate to describe an occurrence. Hands, motion and air are components of a clap, but their inventory does not describe the organised act or its sound. The useful lesson is that organised occurrences can have properties whose attribution requires attention to their arrangement and activity. The analogy does not prove that any interaction is conscious or that an additional substance appears whenever a relation is realised.

The relational-awareness investigation begins with the same distinction. A third presentation can be a new organisation of counterparts rather than a third substance or a fusion of previously separate subjects. Once retained, that organisation can become an input to later reflection and action. Recursion combined with retention permits a scaffold to develop; recursion without retained consequences can merely repeat. Greater complexity alone does not identify one perspective: a coordinated crowd may have a complicated common activity without thereby constituting one experiential subject.

Apparatus and acquired scaffolding make distinct contributions to perceptual construction. Sensory and bodily organisation, acquired classifications, memories, expectations, feelings and beliefs shape the presentation through which the surroundings are encountered. They do not merely add descriptions after a consciously viewed raw image has already appeared. In this sense ongoing seeing is already interpretative perceptual processing. Reflectively naming what is seen, considering its significance and relating it to a personal history are further roles that can occur within the same activity. Suspending naming or inner commentary does not establish that perceptual processing or its acquired organisation has stopped. A presentation can be source-constrained without being source-complete, and the dependence of knowledge on access does not by itself establish the proposed numerical unity of its underlying basis (Rodgers, 2026e,c).

2.3 The constructed observer and personal experience

The observer in this account is itself a constructed central image: the model through which events acquire a personal location, history and significance. It need not be an additional spectator inside the person. Recognising that construction need not abolish useful memory or practical self-reference. The proposed change is a loss of the personal model's privileged status as an exhaustive centre, while the model remains available for ordinary life (Rodgers, 2026c, §5.4). This is the motivation for the related recursively closed observer proposal, rather than a result established by successful self-description alone (Rodgers, 2026j,b).

Scaffolding provides a way to discuss this development without collapsing its levels. Acquired differentiations support memory, reflection and control. They shape ongoing activity, which can in turn revise the retained constraints and alter accessible source conditions. This reciprocal dependence is developed in the reflective-alignment paper (Rodgers, 2026b, §4.1). The operational feedback can be modelled without claiming that a functioning loop already establishes awareness or one phenomenal subject.

The related distinction between functional and subjective will is instructive. Mere difference does not entail will. Directed reconciliation of an actionable represented discrepancy can characterise a control function, while felt effort or intention raises a further phenomenal question. Such reconciliation can revise a model to fit the world rather than force the world to fit a defended self-image. This distinction locates control operations and their histories without deriving subjective will from a thermostat or treating every revised representation as experienced.

2.4 Occurrence, appearance and recollective interpretation

The companion draft *Experience as Recollective Interpretation*, dated 12 October 2026, gives these distinctions a particular use (Rodgers, 2026d). It calls an *occurrence* something that happens and is registered or retained, *experience* the interpretation of a retained occurrence as having occurred, and *subjective* or *personalised experience* its organisation through feeling, identity and personal significance. Here occurrence means actual taking place, without defining it by later retention; *appearance* names actual qualitative presentation, and *personal experience* names its appropriation as happening to someone. Appearance is the qualitative character of the constructed presentation, not a raw image awaiting a second internal viewer. Perceptual construction, reflective recognition and personal appropriation are distinguishable functions that can operate concurrently. The word *experience*, when used for a current qualitative mode in this paper, consequently has a broader use than the companion draft's defined recollective use.

This difference in terminology does not settle the philosophical question. The companion draft preserves seeing without reflective classification while withholding its stipulated term *experience*; this does not require seeing to be unprocessed sensory material. Its Section 7 also argues that presence is no further ingredient beyond construction, and Section 8 explicitly declines an account that defines experience functionally while leaving presence as an additional open fact. That is a substantive proposal about constitution. It need not conflict with attributing a qualitative mode to an organised activity: denying a separate spectator or added substance does not deny the activity's character. But an identification of actual appearance with retentive interpretation needs more than a decision about words. The present warrants do not establish that identification for every interpreting process, and they do not independently refute the companion proposal. The unresolved issue is the reach of that identification, rather than whether personal narrative is required for every appearance.

There is nevertheless a precise agreement about timing. Recollective uptake can occur

within a continuing process over a short interval; the antecedent need not have finished before its recent history is interpreted (Rodgers, 2026d, §5). A descriptor retained earlier may first contribute to a relational presentation at current uptake, J . Earlier storage does not establish earlier appearance, and a present scene can concern an earlier occurrence. Neither observation proves that all appearance is recollective. The companion draft’s Section 10 expressly recognises that its universal recollective thesis goes beyond the relational-awareness result. The local current-act argument accordingly remains distinct from that wider thesis.

The limiting case that removes all acquired scaffolding and the ability to form memory is a stronger stipulation than the absence of naming, commentary or personal recognition. It should not be recast as an ordinary recognised scene with an omitted report. The October draft’s positive recollective model instead requires minimal retention, without requiring language or autobiographical memory. These are different conditions. If later interpretation varies with a particular antecedent, the dependence and its historical reference still need an account; the comparison supplies no retained-trace mechanism for the stronger limiting case. Supplement Module B develops this distinction and the conditional limits of inference without retention.

Descriptions can point to an occurrence without reproducing it. That limitation motivates restraint about an exhaustive description of fundamental awareness; it does not establish a mathematical incompleteness theorem or make every local claim inaccessible to evidence. Whether a relation appears, when it appears, how it informs an activity and where its mode inheres remain particular questions with particular warrants.

2.5 Why earlier articulation proposals were reasonable and insufficient

The first constitutive proposal considered here is a *native articulation principle*: elementary native physical performances are candidates for elementary presentations. Its motivation is immanence and structural fidelity. A phenomenal fusion across independently transforming systems, or a phenomenal division within one native performance, appears to require additional lawlike structure. This is a reasoned proposal rather than an arbitrary label.

Its vulnerability is that physical irreducibility does not alone individuate the experiential event. One interaction can contain several carriers or roles; a carrier-centred account need not treat the interaction’s native prime as one field. The argument therefore needs an independently defended event-centred criterion and an appropriate duration. Endpoint factorisation does not supply these: a swap can be implemented by an interacting sequence even if its endpoint admits a simple factorisation. Native physical organisation constrains a proposed realisation law without automatically fixing its phenomenal extension.

A second proposal, *relational manifestation*, reasons that intrinsic relations among qualitative terms should have a manifest aspect rather than remain wholly unmanifest glue. It has an intelligible ontological motivation. A rival can nevertheless admit qualitative intrinsic terms and real relations among them without one common presentation. Realising contributor supports also need not be phenomenal argument tokens: a compressed parity value can have a presented character without two identifiable original counterparts. The mathematical family of common contributors must therefore be distinguished from the family of actual co-presented occurrences.

A third proposal appeals to intrinsic categorical grounds of physical powers. Qualitative actuality may be an attractive candidate for such grounds, and plural grounds may jointly support a whole power. Neither point by itself establishes that those grounds appear in one field or inhere in the nominated physical performance. Pairwise grounded relations need not have a single common occurrence witness. A reciprocal additional field would make

different physical predictions, but the programme contains no confirmation of that field or its coefficients.

The present argument retains these motivations while pursuing a narrower route. Credible appearance/activity evidence supports a projection of a recurring sensory capacity; a corrected concrete-performance principle then addresses the bearer of the resulting literal mode. No universal prime-to-presentation law, relational manifestation law or additional field is assumed. Supplement Modules B and H preserve the earlier arguments, formal distinctions and counterexamples.

2.6 Continuity has more than one object

The current appearance token, the organised performance, the living animal, the person and an experiential subject episode have different continuity conditions. In the monograph's A3 proposal, a genuine interruption of qualification can end the numerical experiential subject episode while biological and personal continuity remain (Rodgers, 2026e). A strict identification of the experiencer with the continuing animal would carry different diachronic implications (Olson, 2003). Calling an episodic subject a role of the animal is weaker than strict identity and must be stated accordingly.

The current-act thesis does not silently settle this disagreement. Its bearer claim concerns the present organised performance and its qualitative phase. It neither infers a migrating subject from transfer of a relational distinction nor requires the original subjects of separate inputs to fuse. This allows a new current presentation to be constitutionally significant without becoming a universal theory of persistence.

The current-act argument does not assume the full A1–A3 constitution. A connection to the Shadow Psychophysical Constitution, SPC-2, would require a further application of its existing laws (Rodgers, 2026e, ch. 17). A1 admits a perspective through a physically justified qualifying core; A2 assigns its complete endogenous predictive object over all physically admitted finite continuations as phenomenal organisation; A3 specifies nonbranching process continuation. An appropriate phase of the present performance would have to be located within such a core, with *Q* identified as an aspect of its current scene. Contributors to a performance do not thereby define its subject boundary, and causal involvement does not automatically make a worldly source or instrument part of the subject. Given a justified realisation and the accepted laws, SPC-2 assigns phenomenal states and their timing at the declared native resolution. This paper does not complete that application, validate A2 or select first phenomenal onset. Its modest current-appearance conclusion remains compatible with first presentation at uptake, *J*.

2.7 The existing scholarly baseline

Whole-process constitution and biological coupling are not new general ideas. The monograph already treats thought and noticing as aspects of a specified whole process and proposes a biologically realised coupling to a current scene (Rodgers, 2026e, ch. 2). Paper 2 distinguishes silent identity declarations from empirically constrained identification (Rodgers, 2026f). The development paper already articulates third structure, scaffold feedback and conditional conscious constitution, while requiring independent appearance-facing support (Rodgers, 2026c). Outside this programme, process identity and event individuation have long-standing philosophical defences (Place, 1956; Davidson, 1969); Adlam proposes that conscious agency may inhere in holistic input-to-decision relations while leaving the qualifying relations open (Adlam, 2026).

The contribution claimed here is more specific: the conjunction of a physically delimited native capacity projection, corrected role-sensitive performance reidentification, literal current-mode placement and an actual later-token application, with independently articulated counterexamples. This adds warrant and disciplined application to an earlier proposal. It does not assert priority for holistic constitution, event identity or relational scaffolding.

3 Constraints, sensory evidence and native capacity

3.1 What the formal programme contributes

The mathematical results specify what a source, access procedure or physical organisation can support under a declared contract. They are useful precisely because the contract can fail. A report law need not be an adequate description of its source; local marginals need not fix joint structure; a model of current access need not preserve all native interventions. These distinctions already constrain operational identification in the programme (Rodgers, 2026f,g,h). The new constructions in the supplement supply further exact examples and refinements.

The common-finalisation problem illustrates the interpretive boundary. Let b range over future branches, H be the retained causal-prefix history, and C a nominated final content. Suppose the finite branch laws $P_b(h, c)$ have common prefix marginal $\mu(h)$. In an abstract class allowing residual future completions to be designed freely, the largest mass admitting one all-branch common history/content submeasure is

$$\alpha = \sum_{h,c} \min_b P_b(h, c). \quad (1)$$

This is known maximal-common-mass mathematics (Makur and Singh, 2024, Theorem 2), applied here to causal-prefix finalisation. Three branch laws can each have pairwise overlap $1/2$ while their global overlap is zero. Pairwise compatibility is then insufficient.

A fixed passive apparatus presents a different question. Let $Q_b(c | h)$ be its future-content kernels, and let an early marker use only H and a private seed conditionally independent of future innovations, without influencing the apparatus. Zero-error irrevocable marking requires one value certain under every branch at each marked history. Its maximal marked mass is

$$\beta = \sum_h \mu(h) \mathbf{1}\{\exists c \forall b : Q_b(c | h) = 1\}. \quad (2)$$

A fresh fair future coin at the only prefix history gives $\alpha = 1$ but $\beta = 0$. An engineered common coupling and an uninfluential prefix marker of a fixed future are not the same architecture. Appendix B proves these claims; Supplement Module C distinguishes per-marker approximate guarantees from aggregate branch-error budgets.

These are constraints on immutable final content, not clocks measuring appearance. A provisional early quality may occur and later change. A later current appearance can also be generated from a retained summary. Transport of the same completed episodes under genuinely exogenous selection preserves an already warranted target; it cannot create an earlier anchor or a bearer. The formal results prevent an illicit timing inference while leaving the positive current target available.

Reconstruction bounds similarly require complete information contracts. Let X be n independent fair relation bits, W the complete retained state and R an included seed independent of X . The query index J must be uniform and independent of the whole (X, W, R) , and

chosen after storage. Let $e \in [0, 1]$ be the implemented reader’s *actual average bit error*, and let h_2 denote binary entropy. Then

$$n[1 - h_2(e)] \leq I(X; W, R). \quad (3)$$

This statement uses actual error even when it exceeds $1/2$. An upper error budget must instead be clipped at $1/2$, as proved in Supplement Section 3.5. All bypass routes must be included in W . If the query is known before storage, one bit may suffice; if analogue states or hidden archives remain, an assumed finite codebook may be inappropriate. The exact finite-codebook risks and contour counts in the supplement are model results, not estimates of human memory. No independently warranted human ceiling in the present record excludes the strong bounded-summary rival.

Native causal models constrain a proposed mechanism in another way. A noisy four-unit parity system, at a fixed synchronous binary grain, permits exact complex selection and full relation unfolding under IIT 4.0 definitions (Albantakis et al., 2023). The constructed family has five distinctions and 31 positive relations over its stated parameter range, but symmetry obstructs a privileged line or planar four-point geometry under an intrinsic equivariant metric. These findings establish causal structure and the consequences of a proposed content law, rather than actual qualitative content. The explanatory identity proposed by IIT’s intrinsic-structure programme remains a theoretical commitment (Grasso et al., 2026). Supplement Module E retains both a failed majority construction and the corrected parity family.

A further result asks how much additional distinction a *specific anchored content* requires, rather than demanding full reconstruction. Let a finite group G act on source descriptions and target contents. Fix a description x and an independently warranted content c . Write $H = \text{Stab}_G(x)$ and $G_c = \text{Stab}_G(c)$ for the transformations leaving each unchanged. A deterministic equivariant assignment on the orbit of x , anchored at c , exists exactly when $H \subseteq G_c$. If the source description leaves transformations unresolved that change c , an added equivariant signature over x needs at least

$$[H : H \cap G_c] \quad (4)$$

distinct values; a coset construction attains the bound. Supplement Module I supplies the extended-source construction, proof and finite checks. For a coarser target, its own stabilizer may permit a smaller signature. This identifies a target-specific informational burden under the assumed covariance, rather than the number of neurons, fields or subjects required. A passive redescription of one anchored token does not justify active replacement by another system. In particular, the inherited acquaintance condition cannot be strengthened into a cross-token appearance law through this theorem.

Likewise, distinct physical networks can share a complete relative stochastic law under additive drives while native holds distinguish their mechanisms. Module F proves the dynamic result in addition to the established static resistance machinery (Dörfler and Bullo, 2013). Mechanism discrimination does not automatically identify which mechanism bears an appearance. This is why the following sensory and philosophical warrants cannot be replaced by a successful causal score.

3.2 Appearance-directed evidence and its interpretation

Ordinary sensory testimony is evidence that something appears, although it can be mistaken about the external stimulus, the experienced relation, or how an answer was reached. Refusing all such evidence until a neural detector is independently established would exclude the appearance-facing anchors needed to assess a detector. Accepting every response as a direct jointness label would make the opposite mistake. The relevant assessment asks what a person

was instructed to compare, what sources and actions were involved, and whether the response is credibly an expression of current sensory activity.

Direct cortical stimulation contributes useful causal evidence. Local perturbation can alter facial appearance, and spatial stimulation patterns can occasion drawn forms or multiple phosphenes (Parvizi et al., 2012; Beauchamp et al., 2020; Bosking et al., 2022). These effects are harder to understand as arbitrary names assigned to unchanged sensory content, especially when initial drawings precede learned naming. They nevertheless leave open whether stimulated activity supplies a downstream current constructor. Reported multiplicity also varies: two stimulation sites do not uniformly yield two apparent spots.

Where credible testimony concerns a resolved extended form, its presented aspects can already support the minimal relational target. This is a positive phenomenal interpretation, not an inference from electrode separation or a drawing’s geometry alone. A newly formed current field can supply it. Supplement Module J applies this distinction to selected visual and dream findings, retaining each source’s timing, reporting and basing limits rather than treating every induced or tracked response as a direct jointness measure.

Other sources sharpen the same distinction. Report-independent accumulation establishes processing under differing report demands, but passive stimulus-intensity labels do not themselves label current seeing or jointness (Stockart et al., 2025). Grouping and feature integration can dissociate without deciding whether distinct objects share a scene (Vogelsang et al., 2024). A global measurement diagram requires compatible token and context indices before its local descriptions can be interpreted as one actual presentation (Lee-Youngzie et al., 2026). None is merely negative evidence. Each identifies which independent phenomenon or mechanism was established and which inference still requires a premise.

3.3 A physically delimited recurring exercise

Let $\mathcal{V}$ denote the narrow native-human visual regime used in the application below. Its components are specified without asking whether the present target appears:

1. A materially continuing adult participant with actual biological optical acquisition and native visual/control organisation, in the same experimental preparation.
2. The independently specified physical source pair, annulus contexts, optical geometry, illumination and acquisition arrangement.
3. A previously installed comparison instruction and response contingency, with current source-sensitive transformations entering the acquisition/control process.
4. The material and procedural session history, current acquisition episode and uptake interval, with relevant background alterations accounted for.

This is a macro physical nomination, not a measured complete neural state. Actual physiology and sampling participation are partly ordinary task/biological inferences. The record does not include EEG staging, so “confirmed awake consciousness” is not a measured admission field. Current Q, successful acquaintance and answer correctness are excluded from admission.

The initial verbal looked-equal staircase varied the real disc-size difference under contrasting annulus contexts to estimate each participant’s point of subjective equality. Later variation in real disc diameters and annulus arrangements, together with instructions to judge how the discs look, supports a recurring sensory comparison sensitive to context, rather than a context-free classification of physical diameter. Interpreting the apparent counterparts as jointly presented, and the comparison as based on that presentation, additionally relies on the ordinary current-scene interpretation. Neither jointness nor sensory basing was independently measured by a dedicated probe in this archive. The staircase and task history therefore

support the modest capacity inference; they do not constitute a prior jointness or basing calibration (Supplement §§ 7.2–7.4).

This appearance-directed evidence supports a recurring capacity whose projected target is current relational Q *as the sensory way of source-directed comparative activity*. Material continuity and relevant source/context variation make continued exercise of that capacity a reasonable causal expectation. The projected target is what the independently specified physical class is expected to occasion in a new exercise; it does not define class membership. The strongest projection is within the same participant and preparation. Transferring to an altered supplier or an unanchored machine incurs additional obligations.

This induction uses no numerical reliability estimate. Its content is a defeasible default: an episode in $\mathcal{V}$ is expected to occasion source-dependent apparent counterparts and a presented relation during some current inspection/comparison phase, by qualifying uptake J . It neither predicts the exact same/different content nor assumes appearance from stimulus onset. A credible eligible field-free case must count against the projection. One cannot redefine the class as “trials with conscious capacity” merely because a prediction failed.

The projection is therefore directional without being prospective validation. It permits physical nomination before present appearance evidence is interpreted. Its actual application in Section 5 shows that this separation can be maintained. The bearer question remains separate: a capacity for Q does not by itself identify its instantiator.

4 Concrete performance and literal mode

4.1 The two references and the substantive inference

Let P name the independently nominated physical engagement at the relevant activity/phase grain. Let A name the actual source-directed comparative act as independently supported by appearance-directed evidence, and let Q name its qualitative way. These references are not defined as equal. P can be nominated by material acquisition, transformations, control history and uptake even if the phenomenal claim is disputed. A is identified through the person’s current comparative activity, whose sensory way includes the relational presentation. The conclusion to defend is that these references converge on one concrete performance.

Three distinct relationships must be kept apart. A cause can occasion a performance without being that performance. A containing system can include a performer without itself performing the attributed act at the relevant grain. A constituent can help constitute an act while remaining numerically distinct from it. Only justified reidentification, $A = P$, licenses substitution of the literal mode:

$$\text{Mode}(Q, A, \tau), \quad A = P \quad \implies \quad \text{Mode}(Q, P, \tau), \quad (5)$$

where τ denotes the qualifying current phase, not the whole interval between stimulus and keypress. Equation (5) is elementary identity logic. The philosophical work lies in warranting its premises, especially $A = P$.

Neither physical closure nor mental efficacy supplies that conclusion alone. A physical member R may produce an answer while a qualitative constituent Q genuinely grounds a composite reason K^* . Efficacy inherited through R does not make every member of K^* physical, and genuine grounding need not be an independently manipulable causal arrow. Conversely, irreducible qualitative properties do not force a new concrete bearer whenever the property vocabulary changes. These are the two shortcuts the argument must avoid.

4.2 A concrete-performance/mode principle

Principle 4.1 (Conservative mode placement). When a literal mode of an actual activity is independently grounded, presumptively attribute that mode to the activity’s independently and positively tracked concrete performance, at a fixed activity/phase grain and with its actual executing contributors included. Revise the attribution when evidence or a separately defended instantiation account supports a different bearer, an omitted constituent, a merely supplied ground or a different activity. A new property type or descriptive vocabulary alone is not evidence of a numerically different instantiator.

This is an openly contestable constitutive principle. It does not say that every mode is physical or that every activity has a phenomenal mode. The concrete performance nominated here is physical because its acquisition/control execution is independently tracked materially. The principle supplies a defeasible preference for treating its independently supported qualitative way as a mode of that execution. It permits fundamental qualitative properties without deriving them from the current physical description.

Its admission conditions are substantive. There must be credible evidence of a literal mode of *this* activity; the nominee must be tracked through actual source use and participation, rather than selected by matching output; and known executor, phase and indicator counterexamples must be respected. The absence of an identified extra executor checks for a defeater; it is not the positive ground for attribution. The conclusion remains weaker where activity reference is supported only by one actor, a common time or an answer code.

The principle is not “if Q occurs, assign Q to whichever stage is preferred”. It constrains which nomination is eligible for attribution. It can favour current judgment rather than early integration, demand inclusion of a remote physical executor, or require separating sensory participation from an automated answer. Those consequences occur independently of the motivating phenomenal assignment.

4.3 Independent motivation: continuity of the tracked instance

The general rationale is explanatory continuity across ways of describing a concrete occurrence. A particular act can be tracked materially, intentionally, skilfully and semantically. The fact that those descriptions have different explanatory roles does not itself multiply the acts. A handwritten inscription may be described through contact and strokes, through a skill being exercised, and through its legibility or meaning. The realisation of a new property can require a richer state description or a new constitutive rule without requiring another performance elsewhere.

This rationale belongs to a tradition distinguishing token identity from simple correlation (Place, 1956; Davidson, 1969). It does not commit the present argument to reduction of qualitative property types or to a complete causal-profile criterion for events. Such a profile has not been measured for *A* and *P*. There is a positively tracked candidate for the particular execution and independently anchored evidence of the qualitative way of the comparative activity. Convergence on the nominated physical execution is the defended inference. Maintaining one instantiator preserves the supported reference and participation facts unless there is reason to divide them.

Three cases show why correlation is insufficient. A thermometer reading can track a body’s temperature without being that body’s thermal state. A copied coordinate can match a distributed body’s centre of mass without becoming its collective configuration. A copied inscription can reproduce the word without repeating the original stroke-guided activity. The physical quantity cases have stronger constitutive specifications than the proposed placement

of Q , so their rules cannot simply be transferred. They support a more general discipline: distinguish a tracked property-bearing performance from its indicator, description and product, while allowing justified macro attribution before an exhaustive microphysical reduction is available.

The principle’s extension to experience is accordingly a defended methodological and meta-physical step. An irreducible property may be a literal way the tracked performance occurs. Write $\mathfrak{B}$ for a genuinely exclusive qualitative bearer outside the nominated performance. This notation is distinct from the programme’s U for the unsplit ground. To locate the qualitative mode in $\mathfrak{B}$ requires an instantiation account explaining why that qualitative reality belongs outside the performance, rather than another description or mode of it. The immanent account has its own debt: it must justify the nominated activity, phase and contributors, and must not assume a universal physical-to-quality map. Neither side escapes justification by redescribing the other as expensive.

4.4 Physicalism, intrinsic nature and the exclusive-bearer challenge

The proposed attribution belongs to a family of views on which one concrete event can be described physically and mentally without those descriptions being interchangeable. It is congenial to *nonreductive physicalism*: mental occurrences are physical occurrences, while their mental description need not reduce to a physical property type. Davidson’s anomalous monism provides a familiar example of the distinction between event identity and reduction (Davidson, 2001). The present argument does not adopt his full theory or infer its phenomenal claim from intentional rationality. It defends a local identity through the positively tracked performance and its independently supported way of occurring.

Compatible Russellian approaches instead emphasize an intrinsic nature not exhausted by the structural and dispositional descriptions used in physics (Alter and Nagasawa, 2012). If the qualitative nature is a mode of this very performance, that proposal can agree with the current bearer attribution without reducing quality to a structural description. Russellian views are diverse, however, and the proposal that qualitative grounds support physical powers does not by itself establish one joint presentation or identify its bearer. The relation between such grounds and mental causation also remains disputed (Baysan, 2025). No member of this family is a prerequisite for assessing the two warrants.

The decisive vulnerability is a genuinely exclusive bearer that grants the same current appearance, acquaintance, activity and complete physical history. That account can agree with every empirical likelihood while denying that the qualitative mode inheres in P . A mathematical description of the shared history cannot decide the disagreement. The positive case for $A = P$ rests on conservative performance reidentification; its rival must defend the contrary instantiation account. The principle therefore supplies a reasoned preference, not a result forced by the supporting theorems. Section 6 develops the exclusive account without treating it as an idle field or an extra complete comparator.

4.5 Counterexamples that correct the principle

Consider a controller receiving a multiplication result from a remote executor. The controller owns the task, receives the same source and emits the answer. It nevertheless does not perform the entire multiplication locally. Attribution must include the executing contributor or be narrowed to receipt and verification. A prosthesis or instrument may similarly execute part of a movement or assessment. Physical proximity to the person’s answer is not a boundary criterion.

Next consider a person simultaneously speaking and writing a word. Actor, purpose,

content and time overlap, but two distinct executions are involved. A common owner does not identify their modes. Or consider an automated answer path running while the person looks at the same pair. A relational field can occur in the person without being the sensory way of the answer-producing operation. Widening P to every process in the time window merely to capture that field converts performance attribution into containment.

Finally, copying a completed answer preserves a product, not its source-guided formation. A reader of the copy can perform a new act with a new relational presentation, but the old bearer's identity does not migrate with the data. Adding inert matter or concatenating successive tasks likewise does not enlarge one literal mode simply by expanding a box. Phase individuation matters: a current qualitative way is not identified with the entire multi-phase response episode.

These examples support a corrected rule. Track actual performing roles and their current participation; include contributors shown to execute the relevant act; distinguish suppliers, verifiers, indicators and products; and specify the qualitative phase. The rule can be defeated by independently demonstrated omitted execution. It does not protect an internal-only boundary or forbid world-involving constitution.

4.6 Application to native comparison

In an ordinary appearance-directed comparison, current source use, task contingency, content-sensitive history, sensory inspection and operative uptake can support convergence between A and P . The qualitative scene is treated as the way the comparison is undergone, not merely a true fact about the answer. The physical nomination follows the native acquisition/comparison engagement, not the output gate. The corrected rule thereby has a positive candidate and a literal mode to place.

The activity tether is indispensable. The documented looked-equal staircase and appearance-directed task history support the ordinary sensory-comparison interpretation; they are not dedicated basing measurements. Evidence of Q 's presence somewhere near an answer would not earn its projection as the sensory way of that comparison. The supported target must include actual source-directed use or ordinary basing. That conjunction can be projected to a new exercise without requiring current Q as a class-membership gate. The evidence is not statistically independent: source history and task context contribute to several assessments. The logical roles of the premises nevertheless differ, and none is justified by its desired conclusion.

This basing judgment need not already identify a physical content vehicle as Q 's bearer. Genuine acquaintance with a current apparent relation can guide an agent's act through a derivative physical reason vehicle. A genuinely exclusive qualitative bearer could permit that same source-guided activity. Identifying the experience-inclusive activity A with physical P remains the further constitutive step. Supplement Module I makes this separation explicit and distinguishes an operative current basis from faithful transmission of an earlier source.

A cached answer merely triggered by acquaintance can bypass the apparent relation's content. A faithful message can instead lead to a fresh current field that alone supplies the comparison's sensory basis. Both cases matter: semantic agreement or a measurable effect of a physical channel does not identify the current qualitative source. Conversely, if current appearance-directed comparison is independently warranted, gating its later expression tests that expression rather than discovering its earlier basing. These distinctions preserve the ordinary positive inference while preventing it from borrowing an unearned physical-constitution premise.

Together these grounds support an actual bearer attribution: continuity of the indepen-

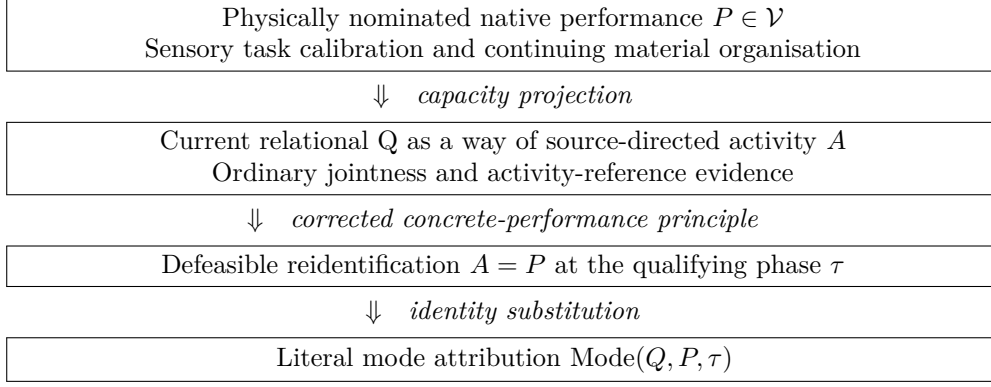


Figure 1: The warrants have different roles. Physical nomination does not include current Q; appearance/activity projection and performance reidentification are defeasible. Only the final mode substitution is deductive. No statistical independence of the supporting evidence is assumed.

dently tracked performance is the preferred interpretation. That preference has no likelihood advantage over a hybrid that grants the same appearances and physical process. The inference would weaken if an unsuspected strategy change removed jointness, if the field merely accompanied an automated response, or if a general instantiation theory independently supported an exclusive bearer. These objections target different steps, developed in Section 6.

5 A worked retrospective illustration

The archived case below illustrates how the argument’s warrants separate and combine in an actual comparison. It is not a prospective validation, an estimate of predictive accuracy, or an empirical selection between equivalent bearer ontologies. The archive had already been exposed to analysis, and neither jointness nor sensory basing was measured by a dedicated probe. Its value is that the physical nomination, sensory interpretation, temporal claim and constitutive attribution can each be inspected without treating one as evidence for all the others.

5.1 Physical arrangement and nomination

The application uses public data from a study of the Ebbinghaus illusion and perception–action dissociation (Whitwell et al., 2023). Its apparatus presents physical discs with contrasting annulus contexts, separates the target regions by 13 cm, and illuminates the display for five seconds. The supplementary procedure distinguishes the acquisition interval from preparatory time to a keypress. These are physical task conditions, rather than labels declaring a current phenomenal state.

The nominated case is participant 2nU4ew, keypress task 3, trial 3. The nomination uses participant, task and trial, physical source codes and the pretrial response contingency. Current key, correctness, S/D design classification and a jointness label do not define its eligibility. The source fields identify a small disc within a large annulus on the left and a small disc within a small annulus on the right. Both discs have physical diameter 30 mm. The retained instruction maps a same-looking judgment to left and a different-looking judgment to right. The prior-trial reference in the preserved nomination records its retrospective selection sequence; trial 2 supplies no independently measured jointness or basing anchor.

These metadata nominate a further exercise of the physical regime $\mathcal{V}$. They do not measure

Question	Positive warrant	Limitation affecting this inference
Occurrence	Continuing native activity, prior sensory calibration and ordinary appearance-directed response	No calibrated field-free denominator or numerical occurrence reliability
Jointness	Current spatial-scene interpretation of paired sensory inspection	The same/different code is not a dedicated joint-presentation probe
Basing	Source use, installed comparative task, history and operative uptake	Ordinary sensory inference; an automated answer route can coexist with Q
Timing	Current comparative interpretation plus recorded keypress at 2,645 ms	No first onset, uninterrupted field or earlier-I conclusion
Bearer	Corrected performance reidentification and literal-mode placement	Constitutive default, not a neural measurement or empirical ontology selection

Table 1: Distinct warrants and their limits in the retrospective illustration.

all its physiology or native source use. The projection uses ordinary material/procedural continuity and participation in this appearance-directed protocol. A new appearance verdict is not required to admit the trial; nor does the label “comparison” in the physical description mean that joint Q has already been established.

5.2 Sensory interpretation and the two warrants

The keypress record gives a right choice at 2,645 ms, agreeing with the condition file’s chosen-side field. Under the pretrial same-left rule its instructed meaning is a different-looking size comparison. The initial looked-equal calibration, source/context variation and appearance-directed instructions support the ordinary sensory interpretation explained in Section 3. Joint presentation and operative sensory use additionally depend on the ordinary interpretation of a current paired scene. The answer code does not independently measure either.

Excluding outcomes from the eligibility rule did not make the analyst blind to them. The parser had read the complete condition table, including its outcome columns, and the archive had already been analysed. Supplement §§ 7.2–7.5 retain the source-member identities, saved commitment and reinspection chronology, and reproduction details. Those records establish custody of the illustration; they do not add an observation of Q.

The occurrence warrant projects a sensory capacity to an independently nominated native exercise. The activity interpretation then concerns what that person is doing with the apparent targets. The bearer warrant makes the further, contestable attribution of the supported qualitative mode to the tracked physical performance. These premises have different jobs even though some of their evidence, especially the task history and current sensory interpretation, is shared. Applying them to one documented case makes their dependence and possible points of failure concrete. It does not establish their statistical independence or supply a new proof of $A = P$.

5.3 Exactly what the application supports

The strongest appearance claim is not that equal physical diameters have become unequal. It concerns source-relevant apparent magnitudes and their presented spatial/comparative relation. The difference judgment is ordinarily about how those targets look. Jointness additionally uses the current-scene interpretation of paired inspection: a mere proposition can be inferred from serial presentations, so the code alone does not entail the target.

The activity claim likewise goes beyond common owner, time and content. On the ordinary protocol interpretation, this presentation is a sensory way of the participant's source-directed comparison. If a separate automatic route instead produced the key while a field merely accompanied it, the answer-producing and sensory performances would need to be distinguished. The present evidence does not independently measure basing or eliminate unnoticed automatisations. It supports the ordinary reference modestly, which is the level of the thesis.

Under that interpretation, a qualifying current presentation occurs by the response. The 2,645 ms value is a physical illumination-to-keypress interval, not a direct phenomenal timestamp. It bounds the present comparative phase in which the response is ordinarily taken to express appearance; it does not locate the beginning of that phase. A new relational scene first constructed at J suffices.

Finally, the concrete-performance principle supports attributing Q to the inclusive current native engagement at its qualifying phase. It does not transfer the mode to the key register, an upstream supplier, an anatomical union or the entire multi-second episode. This is the proposed combination of physically delimited occurrence projection and separately defended mode-bearing attribution. The mathematics does not establish the identity premise. The same physical/report process can support a competing exclusive-bearer account, considered next.

5.4 What could challenge the inference

The rule expects current relational appearance in further materially continuing exercises of $\mathcal{V}$, without using their present appearance verdict as admission. Source/context variation can change the contents while preserving the narrow activity kind. Motor-code remapping can preserve the sensory comparison while changing the reported bit; copying or replacing the bit cannot itself establish that comparison. A documented optical interruption, source substitution or changed task program can alter the physical regime, whereas a current wrong answer alone cannot retroactively do so.

The empirical claims can be challenged separately. Credible absence of the projected appearance in an independently maintained eligible exercise would count against occurrence projection; a missed response alone would not establish that absence. Evidence that the participant used only serial appearances and descriptors, with no current qualitative pair even at uptake, would undermine jointness. Serial eye movements alone would not suffice, since a new pair-scene could first appear at J . Evidence of a cached or automatic answer route, independently bypassing the relation's current sensory use while the field merely accompanied the answer, would challenge basing. The present archive does not supply these stronger observations or a calibrated rate for any of them. An unsuccessful eligible case cannot be dismissed by defining a new subtype as the successful trials; its physical boundary would need independent support.

These possible findings concern the occurrence and role of appearance. They would change premises to which the constitutive principle is applied. An exclusive-bearer account that grants the same appearances, basing and physical records instead contests the placement principle itself. More accurate prediction of those shared records would not choose between the accounts. The illustration therefore contributes a concrete, criticisable application of the argument while leaving prospective validation and the constitutive disagreement distinct.

6 Three serious alternatives and their different force

6.1 Serial appearances without a joint scene

The serial-only account grants sensory appearances, physical source sensitivity and competent comparison. One magnitude appears, its descriptor is retained, another appears, and a relation proposition is inferred. The account can reproduce the entire behavioural record without ever presenting the two counterparts together. It challenges Q's jointness rather than the physical nomination or source dependence.

The response is evidential, not a theorem that comparison entails a field. Ordinary current scene acquaintance and the appearance-directed protocol give reason to interpret the activity as a joint presentation. That interpretation is not defeated merely because the eyes inspect regions successively: successive acquisition can produce a currently joint scene. But evidence that a person used serial-only imagery or an inference-only strategy would directly weaken the target claim. A later genuinely joint J presentation would satisfy the target; a word expressing the inferred relation would not by itself do so.

This is the most important limitation of the archive's phenomenal evidence. There is no dedicated jointness or actual-basing probe. It remains legitimate to use ordinary appearance evidence at a modest level, while admitting that a stronger validation study would need an independent measure and eligible negative cases. The physical response does not repair a suspended jointness interpretation.

6.2 A field accompanying an automated answer

The passive-accompaniment account grants actual joint Q in the participant. A parallel path, however, computes the answer from physical/context classes independently of the experienced relation. The participant can look at the pair while using a learned strategy. Thus Q, the source pair, owner, phase and matching answer can all coexist without Q being the sensory mode of the chosen answer-producing operation.

This attacks activity tether and performance individuation. It is not a denial of appearance and not yet a different bearer ontology. Common actor or temporal overlap cannot settle it. The appropriate correction is to distinguish the sensory engagement from the automated response performance, or to narrow the nominated activity to the actual sensory/comparative execution. Enlarging a task-window box until it contains both would evade rather than solve the issue.

The positive case uses ordinary source-directed sensory basing. The appearance-directed instructions, initial looked-equal staircase, fresh contextual inputs and uptake support the interpretation that the current comparison is performed through the apparent relation. These grounds are fallible, and the data do not separately rule out unnoticed automatisms. The projected target is *Q as a sensory way of comparative activity*; a matching correct answer alone does not supply that tether. A discovered bypass changes attribution even if appearance survives.

6.3 A genuinely exclusive experiential bearer

The strongest hybrid grants one agent, actual jointness, genuine qualitative grounding, the activity tether and the complete physical/report process. Physical member R can be operative in a mixed act K^* while qualitative $\mathfrak{B}$ is its literal experiential member. $\mathfrak{B}$ need not perform another entire comparison, add a physical force or require a trial-specific manifestation law. Describing this account as a second comparator or an idle epiphenomenon would miss its

strongest form.

The disagreement concerns instantiation. If $\mathfrak{B}$ names a qualitative trope of P , the account is compatible with the proposed bearer claim. If it names a mode of the physical animal at a different grain, its grain requires justification. If it is genuinely exclusive of the nominated performance, it challenges conservative mode placement even when the other four claims survive.

The present argument prefers continuity of the positively tracked performance and its literal way of occurring. Grounding by Q does not itself require distinct instantiation outside P ; the same grounding role can be attributed to a mode of P . A different property type does not positively locate another bearer. However, an independently defended ontology of phenomenal instantiation could justify the exclusive account. So could evidence of an omitted current sensory executor or a distinct continuity pattern that the physical nomination overlooks.

Both positions must specify how their bearer is tracked, how it participates in the activity, and what replacements, divisions or extensions would defeat the attribution. The preference here rests on a general constitutive default and actual reference convergence. It claims neither an ontology-neutral theorem nor a statistical win. The hybrid's coherence limits certainty without making every defended attribution arbitrary; mere failure to detect $\mathfrak{B}$ would not positively justify identity.

6.4 Other correction cases

Hidden state or strategy changes can undermine the native-capacity projection while leaving metadata and outputs similar. Eligible contrary appearances must be retained; an inferred "conscious-capacity" gate cannot remove them. A downstream physical constructor may generate the new J third and belong to the inclusive current performance; this supports no claim that an earlier supplier alone is sufficient. Independently performing remote, prosthetic or world contributors can require enlarging or revising the nomination. Internal anatomical closure is not a premise.

Finally, an incorrect answer can coexist with a joint field. It may indicate wrong content classification, task misunderstanding, motor error or altered basing. It is not automatic absence of Q . Likewise, occurrence does not make every phenomenal judgment knowledge. These correction cases preserve the differences between target actuality, response accuracy, competent expression and constitution.

7 The achieved connection and its scope

The result is a positive argument for current relational appearance inclusively borne by a physically organised engagement in the stated native-human regime. The occurrence side uses a projectible sensory capacity whose physical admission conditions exclude present Q . The constitutive side uses an independently motivated and corrected concrete-performance/mode principle. A worked retrospective illustration exhibits how the two can be combined without treating an answer bit, a conditional bound or a causal score as the missing phenomenal premise.

Separating the warrants makes the connection assessable. The reader can accept the physical nomination while disputing jointness, accept joint Q while disputing its activity tether, or accept the tether while disputing bearer reidentification. Each objection calls for different evidence or principles. The conclusion inherits the fallibility of those premises while continuing to concern actual appearance, not merely computational compatibility.

Alternative	Premise challenged	Appropriate correction
Delayed joint construction	Earlier onset, if claimed	Accept a new current J presentation; no earlier onset is required
Serial-only presentation	Joint Q	Reassess ordinary scene evidence; a relation proposition is insufficient
Passive accompanying Q	Activity tether / chosen act identity	Split or narrow performances; do not use mere containment
Exclusive experiential $\mathfrak{B}$	Constitutive instance principle	Assess the contrary instantiation account; equal likelihood supplies no selection
Omitted executor / changed state	Physical nomination or projectibility	Include actual participation or independently redefine the physical subtype

Table 2: The alternatives are consequential in different ways; they do not form one generic objection.

7.1 What is added to the programme

The existing monograph and development paper already propose whole-process constitution and native biological coupling, and develop source/readout distinctions and scaffold feedback (Rodgers, 2026e,c). The contribution here is independently argued support and an explicit scoped illustration, corrected by execution, indicator and parallel-path counterexamples. It permits irreducible qualitative modes of a physical performance, accepts first construction at current uptake, and does not silently use the earlier structural assignment as its own warrant.

The accompanying mathematics has additional value even where it is not load-bearing for that final attribution. Passive prefix marking is distinguished from freely engineered common finalisation; complete source and information contracts expose reconstruction assumptions; exact native causal-field calculations test selection and symmetry; dynamic relative-law equivalence and native holds separate observable service from architecture. The anchored content-signature theorem now specifies the extra distinctions required for a nominated target under explicit covariance, while the presented-form argument removes an unnecessary multi-object demand. The separation of current basing from physical-port constitution prevents a further conflation in the bearer argument. These gains sharpen its premises without supplying a general manifestation law.

7.2 Boundaries and future tests

A fixed retrospective neural prediction assay supplies a useful negative check on the temptation to identify a physical score with the needed bridge. Adding the specified neural feature worsened the primary held-out Brier score from 0.2854131 to 0.2983571; improvement in a secondary ranking measure did not satisfy that criterion. The comparison concerns the archived prediction target, not an independently calibrated label of actual relational appearance. Its failure neither refutes the current-act argument nor warrants a replacement consciousness detector. Supplement Module J gives the fixed split, models, exact scores, source dependencies and verification limits.

No universal necessary-and-sufficient occurrence law, reductive quality map, smallest tissue bearer, all-machine detector or first-onset estimate is established. The result leaves awareness-first origins, subject partition, alternative physical grains, and the A3/animal continuity disagreement open. Bounded agency, recursively closed observer proposals and machine

alignment remain distinct projects requiring their own realization and appearance-facing warrant (Rodgers, 2026a,j,b). Operational revision, self-reference or a generated artifact cannot inherit this human-native conclusion by matching outputs.

A stronger empirical assessment would freeze physical eligibility, preserve contrary cases, and obtain independent jointness and basing evidence. Manipulations separating motor remapping from sensory-source replacement would test whether the forecast follows the nominated engagement or merely its emitted code. Native holds and selective perturbations can discriminate mechanisms beyond an additive-response contract, but a phenomenal interpretation of their effects must still be earned. Exact onset needs an independently justified time-sensitive appearance anchor. These are discriminating extensions with identifiable obligations, rather than demands that every question be settled before this argument can stand.

7.3 Conclusion

Within the specified materially continuing native-human comparison regime, current qualitative counterparts and their presented relation have defensible empirical and phenomenological support. A corrected concrete-performance/mode principle supports attributing that qualitative way to the organised physical engagement at its qualifying phase. Delayed construction at current uptake is compatible with this connection; serial-only presentation, passive accompaniment and exclusive instantiation remain distinct possible defeats of its premises.

These warrants advance the connecting obligation through an actual, scoped inference. Sensory projectibility and concrete-performance reasoning supply its force. They also preserve its limits: a timing bound does not identify onset, a physical supplier need not be the bearer, and the constitutive attribution remains open to independent criticism.

A Identity, mode and the scope of substitution

For the main argument, P and A denote concrete performances at a fixed activity grain; τ denotes the relevant qualitative phase. $\text{Mode}(Q, x, \tau)$ is a literal predication about how x occurs at that phase. It is not shorthand for “an output of x describes Q ” or “ Q occurs somewhere inside a region containing x ”.

Proposition A.1 (Mode preservation under reidentification). *In ordinary identity logic, $A = P$ and $\text{Mode}(Q, A, \tau)$ entail $\text{Mode}(Q, P, \tau)$. Neither $\text{Causes}(P, A)$, $\text{Contains}(P, A)$ nor $\text{Constitutes}(P, A)$ alone supplies that entailment.*

Proof. The positive conclusion is substitution of identicals in the predicate’s bearer position. For each claimed replacement relation, take two distinct objects a, p , interpret that relation as true of (p, a) , and make $\text{Mode}(Q, a, \tau)$ true but $\text{Mode}(Q, p, \tau)$ false. These are countermodels unless an additional mode-preservation axiom is imposed on the relation. An imposed axiom is a further constitutive commitment, not identity logic. $\square$

The proposition does not establish $A = P$. That premise is the defeasible conclusion of the corrected concrete-performance principle and actual participation/reference assessment in Section 4. It transfers neither Q to every part nor Q to every containing system. If different temporal grains are used, a warranted correspondence between the qualifying phases is also required; the whole response interval is not silently substituted for τ .

B Common finalisation and passive fixed-apparatus marking

All sets in this appendix are finite. Let $\mathcal{B}$ be a nonempty set of future branches and P_b probability laws on $\mathcal{H} \times \mathcal{C}$ with common H -marginal μ . Let a *common submeasure* $r(h, c)$ satisfy $0 \leq r(h, c) \leq P_b(h, c)$ for every b . Its mass is $\|r\|_1$.

Theorem B.1 (Abstract common-finalisation mass). *The largest common-submeasure mass is Equation (1). It is attained by $r(h, c) = \min_b P_b(h, c)$. In a class freely designing branch-specific residual completions behind one common prefix, this mass is attainable as an all-branch early finalisation probability.*

Proof. Every feasible r is pointwise bounded by the minimum, proving the upper bound; the pointwise minimum is itself feasible. Write $a(h) = \sum_c r(h, c) \leq \mu(h)$. At prefix h of positive mass, use a common flag with probability $a(h)/\mu(h)$, and on flagged histories draw the common content with law $r(h, \cdot)/a(h)$. In branch b , draw residual content on unflagged histories with conditional mass proportional to $P_b(h, c) - r(h, c)$. Each branch has the required joint law. Zero-mass histories and cases $a(h) = 0$ or $a(h) = \mu(h)$ are handled by omitting the absent component. The construction designs future completion kernels; it does not establish attainment in an independently fixed apparatus. $\square$

The common-mass identity is a finite specialisation of established maximal all-equal coupling (Makur and Singh, 2024). If H is a singleton and the content laws are uniform on $\{0, 1\}$, $\{1, 2\}$ and $\{2, 0\}$ respectively, every pair has overlap $1/2$ but no atom belongs to all three supports. Hence $\alpha = 0$ despite pairwise compatibility.

Now hold the future mechanism fixed. Its branch kernels are $Q_b(c \mid h)$. An early marker chooses a flag F and marked value V using only (H, R) , where the private seed R is conditionally independent of future content for every branch given H . The marker does not influence the future mechanism. Thus

$$C_b \perp (F, V) \mid H, \quad \text{Law}(C_b \mid H = h) = Q_b(\cdot \mid h). \quad (6)$$

The requirement is $\mathbb{P}_b(F = 1, V \neq C_b) = 0$ for every b .

Theorem B.2 (Passive zero-error maximum). *Under Equation (6), the maximal $\mathbb{P}(F = 1)$ is Equation (2).*

Proof. At any positive-mass history h , if the marker assigns positive conditional mass to $(F = 1, V = c)$, conditional independence makes its branch- b error mass proportional to $1 - Q_b(c \mid h)$. Nonnegativity and zero total error therefore require $Q_b(c \mid h) = 1$ for every b . No other history can be marked. At a history with such a common certain value, mark it with probability one and that value; leave other histories unmarked. This attains the stated maximum. $\square$

For a fixed future fair coin at the only history, all branch laws agree, so $\alpha = 1$. No value is certain, so $\beta = 0$. The unrestricted construction in Theorem B.1 can coordinate early marking with its designed future; the fixed passive marker cannot. Correlated latent seeds or marker interventions must be included in a different history/mechanism contract, not smuggled into Equation (6).

For a conditional error guarantee on each realised marked pair (h, c) , the criterion becomes $\min_b Q_b(c \mid h) \geq 1 - \varepsilon$. For aggregate branch budgets η_b , instead set $x_{hc} = \mathbb{P}(H = h, F =$

1, $V = c$) and maximise

$$\begin{aligned} & \sum_{h,c} x_{hc}, \\ & x_{hc} \geq 0, \quad \sum_c x_{hc} \leq \mu(h), \\ & \sum_{h,c} x_{hc} [1 - Q_b(c \mid h)] \leq \eta_b \quad (b \in \mathcal{B}). \end{aligned} \tag{7}$$

Randomisation can meet aggregate budgets without meeting a per-marker guarantee. Supplement Module C gives exact examples, robust certificates and sampling/resource contracts. These theorems concern irrevocable branch-consistent final content. They establish neither first appearance nor the constitutive bearer of a content token.

Declarations

Funding. This work received no external research funding.

Data and computation. No new human or animal experiment was conducted. The complete LaTeX sources for both documents accompany this release in `Relational_Awareness_LaTeX_Sources_v1_4.zip`. Scripts, permitted supporting inputs, recorded outputs and instructions are provided separately in `Relational_Awareness_Reproducibility_v1_4.zip`. Finite checks and the supplied reduced neural prediction table can be checked directly. Analyses requiring external public data, and the distinction between newly executed checks and reused recorded verification, are specified in its README. The package is not wholly self-contained. Third-party inputs retain their source terms.

AI assistance. OpenAI Codex assisted with source recovery, mathematical modelling, proof and argument criticism, manuscript drafting and revision, reference checking, and reproducible code and document checks. AI agreement was not treated as evidence of appearance or constitution. Checks by separate AI workers are computational or argumentative review, not independent human validation or peer review.

Independent assessment. Independent critical review, replication of the stated calculations and collaboration on the identified empirical and constitutive questions are welcome.

References

- Emily Adlam. How Do We Observe Relational Observables? *Journal for General Philosophy of Science*, 57(2):285–309, 2026. doi: 10.1007/s10838-024-09703-7. URL <https://doi.org/10.1007/s10838-024-09703-7>. Published online 28 March 2025.
- Larissa Albantakis, Leonardo Barbosa, Graham Findlay, Matteo Grasso, Andrew M. Haun, William Marshall, William G. P. Mayner, Alireza Zaeemzadeh, Melanie Boly, Bjørn E. Juel, Shuntaro Sasai, Keiko Fujii, Isaac David, Jeremiah Hendren, Jonathan P. Lang, and Giulio Tononi. Integrated information theory (IIT) 4.0: Formulating the properties of phenomenal existence in physical terms. *PLOS Computational Biology*, 19(10):e1011465, 2023. doi: 10.1371/journal.pcbi.1011465. URL <https://doi.org/10.1371/journal.pcbi.1011465>.

- Torin Alter and Yujin Nagasawa. What is Russellian Monism? *Journal of Consciousness Studies*, 19(9–10):67–95, 2012. URL https://www.philosophy.prof/_files/ugd/6d4b8e_7d31512f440c46d5983dfca86171195a.pdf.
- Umut Baysan. Does Panpsychism Explain Mental Causation? *Erkenntnis*, 90(6):2437–2453, 2025. doi: 10.1007/s10670-024-00816-5. URL <https://doi.org/10.1007/s10670-024-00816-5>. Published online 5 May 2024.
- Michael S. Beauchamp, Denise Oswalt, Ping Sun, Brett L. Foster, John F. Magnotti, Soroush Niketeghad, Nader Pouratian, William H. Bosking, and Daniel Yoshor. Dynamic Stimulation of Visual Cortex Produces Form Vision in Sighted and Blind Humans. *Cell*, 181(4):774–783.e5, 2020. doi: 10.1016/j.cell.2020.04.033. URL <https://doi.org/10.1016/j.cell.2020.04.033>.
- William H. Bosking, Denise N. Oswalt, Brett L. Foster, Ping Sun, Michael S. Beauchamp, and Daniel Yoshor. Percepts evoked by multi-electrode stimulation of human visual cortex. *Brain Stimulation*, 15(5):1163–1177, 2022. doi: 10.1016/j.brs.2022.08.007. URL <https://doi.org/10.1016/j.brs.2022.08.007>.
- Donald Davidson. The Individuation of Events. In Nicholas Rescher, editor, *Essays in Honor of Carl G. Hempel*, pages 216–234. D. Reidel, 1969. doi: 10.1007/978-94-017-1466-2_11. URL https://fitelson.org/125/Davidson_individuation_of_events.pdf.
- Donald Davidson. Mental Events. In *Essays on Actions and Events*, pages 207–228. Oxford University Press, Oxford, 2nd edition, 2001. doi: 10.1093/0199246270.003.0011. URL <https://doi.org/10.1093/0199246270.003.0011>. Originally published in 1970; citation is to the 2001 collected edition.
- Florian Dörfler and Francesco Bullo. Kron Reduction of Graphs with Applications to Electrical Networks. *IEEE Transactions on Circuits and Systems I: Regular Papers*, 60(1):150–163, 2013. doi: 10.1109/TCSI.2012.2215780. URL <https://motion.me.ucsb.edu/pdf/2011d-db.pdf>.
- Matteo Grasso, Jeremiah Hendren, and Giulio Tononi. Consciousness as Intrinsic Structure: Towards a Chemistry of Experience. arXiv preprint 2608.11398v1, 2026. URL <https://arxiv.org/abs/2608.11398>. Submitted 11 August 2026.
- Zoe Lee-Youngzie, Naotsugu Tsuchiya, Michael Robinson, Donna Dietz, and Martin M. Monti. Towards a Mathematical Structure of Global Phenomenal Consciousness. *Entropy*, 28(6):615, 2026. doi: 10.3390/e28060615. URL <https://doi.org/10.3390/e28060615>.
- Anuran Makur and Japneet Singh. Doebelin Coefficients and Related Measures. *IEEE Transactions on Information Theory*, 70(7):4667–4692, 2024. doi: 10.1109/TIT.2024.3367856. URL <https://arxiv.org/html/2309.08475v2>.
- Eric T. Olson. An Argument for Animalism. In Raymond Martin and John Barresi, editors, *Personal Identity*, pages 318–334. Blackwell, 2003. URL https://eprints.whiterose.ac.uk/id/eprint/734/4/Argument_animalism_fixed.pdf.
- Josef Parvizi, Corentin Jacques, Brett L. Foster, Nathan Withoft, Vinita Rangarajan, Kevin S. Weiner, and Kalanit Grill-Spector. Electrical Stimulation of Human Fusiform Face-Selective Regions Distorts Face Perception. *The Journal of Neuroscience*, 32(43):14915–14920, 2012. doi: 10.1523/jneurosci.2609-12.2012. URL <https://doi.org/10.1523/jneurosci.2609-12.2012>.

- U. T. Place. Is Consciousness a Brain Process? *British Journal of Psychology*, 47(1):44–50, 1956. doi: 10.1111/j.2044-8295.1956.tb00560.x. URL <https://doi.org/10.1111/j.2044-8295.1956.tb00560.x>.
- Jeremy Rodgers. Bounded Agency and Reflective Freedom: Evaluative Revision, Information Limits, and Faithful Realization. Author-published research preprint, 2026a. URL <https://doi.org/10.5281/zenodo.23202999>. Manuscript version 2.0, 6 October 2026; Zenodo issued 7 October 2026.
- Jeremy Rodgers. Reflective Alignment and AI Consciousness: Awareness, Agency and Recursive Cognitive Scaffolding. Author-published research preprint, 2026b. URL <https://doi.org/10.5281/zenodo.23294465>. Version 2.1, 11 October 2026; preprint.
- Jeremy Rodgers. Relational Development and Conscious Scaffolding: Conceptual Foundations, Strengthened Results, and Research Commitments. Author-published research preprint, 2026c. URL <https://doi.org/10.5281/zenodo.23190711>. Revised preprint, 6 October 2026; Zenodo record version v1.
- Jeremy Rodgers. Experience as Recollective Interpretation: Awareness, Scaffolding and the Question of Machine Experience. Unpublished draft internally dated 12 October 2026; supplied edition, no formal version number or DOI asserted, 2026d.
- Jeremy Rodgers. Shadow Theory and Consciousness: Awareness, Perspectival Realization, and the Source-to-Experience Problem. Author-published research preprint, 2026e. URL <https://doi.org/10.5281/zenodo.22853774>. Version 2, 20 September 2026; monograph preprint.
- Jeremy Rodgers. Relational Boundaries and Awareness Localization: Robustness, Composition, and Identification Limits. Author-published research preprint, 2026f. URL <https://doi.org/10.5281/zenodo.23075822>. Manuscript version 1.0, 29 September 2026; Zenodo issued 1 October 2026.
- Jeremy Rodgers. Learning Effective Interfaces from Opaque Stochastic Systems: Capacity, Selection, and Validation Limits. Author-published research preprint, 2026g. URL <https://doi.org/10.5281/zenodo.23075824>. Manuscript version 2, 29 September 2026; Zenodo issued 1 October 2026.
- Jeremy Rodgers. Identifying Binary Realizations from Intervention Laws: Certificates, Recoding Obstructions, and a Bounded SPC-2/IIT Comparison. Author-published research preprint, 2026h. URL <https://doi.org/10.5281/zenodo.23075828>. Manuscript version 1.1-RC1, 30 September 2026; Zenodo issued 1 October 2026; release candidate, no independent human mathematical review.
- Jeremy Rodgers. Agency and the constructed self. Author-published article, 2026j. URL <https://www.everythingequation.com/articles/agency-and-the-constructed-self>. 6 October 2026; includes recursively closed observer hypothesis; not a separate RCO-only publication.
- François Stockart, Ramla Msheik, Alexis Robin, Lenka Jurkovičová, Dorian Goueytes, Martin Rouy, Radek Mareček, Dominique Hoffmann, Liad Mudrik, Robert Roman, Milan Brázdil, Lorella Minotti, Philippe Kahane, Michael Pereira, and Nathan Faivre. Cortical evidence accumulation for visual perception occurs irrespective of reports. *Nature Communications*, 16(1):8458, 2025. doi: 10.1038/s41467-025-63255-y. URL <https://doi.org/10.1038/s41467-025-63255-y>.

Lukas Vogelsang, Maëlan Q. Menétrey, Leila Drissi-Daoudi, and Michael H. Herzog. Investigating the relationship between subjective perception and unconscious feature integration. *Journal of Vision*, 24(12):1, 2024. doi: 10.1167/jov.24.12.1. URL <https://doi.org/10.1167/jov.24.12.1>.

Robert L. Whitwell, Mehul A. Garach, Melvyn A. Goodale, and Irene Sperandio. Looking at the Ebbinghaus illusion: differences in neurocomputational requirements, not gaze-mediated attention, explain a classic perception-action dissociation. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 378(1869):20210459, 2023. doi: 10.1098/rstb.2021.0459. URL <https://doi.org/10.1098/rstb.2021.0459>. Published online 13 December 2022.