Realism Without an Outside

Cognition-relative world-reference, outer form, and reconstruction from the world-order

Abstract

We understand our cognition as part of a world that we also determine through perceiving, distinguishing, remembering, and modeling. Scientific explanations place us in this world as bodies, brains, or organisms. Yet they already employ the order of objects, space, and causality whose achievements of determination are examined here. This paper investigates that reflexive relationship and asks how a realistic relation to the world can become tenable without absolutizing its own order of determination.

The investigation develops a functional reconstruction of a realistic world-order. Inner form and outer form consolidate different profiles of variability, availability, recurrence, and resistance. Stabilization enables relationships to be continued as units of reference and opens up expectations, interventions, and corrections. Friction denotes a readable mismatch of an activated order under the conditions of its enactment. Diagnosing it clarifies which relationships are challenged and whether correction or revision is required. Validity concerns the domain-bound tenability of such claims under challenge.

The connection between engagement with the world and correction is developed through a door example and a constructed camera case; a dream case distinguishes the validity conditions of descriptions of experience from those of assignments to a shared world. Scientific findings and differences in one's own experience can correct descriptions in different ways. Reconstructing cognition from within the world-order itself becomes intelligible as a productive, examinable achievement of ordering. Its tenability is assessed without treating successful testing as a measure of convergence toward reality in itself.

Keywords

Realism; inner form; outer form; stabilization; unit of reference; friction; validity; basic rule; reconstruction from the world-order; experience

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1. From the problem of realism to the question of an outside

A door cannot be opened by imagining it open. From the side it looks different than it does from the front; we nevertheless treat it as the same door. If it will not open, we look for the difference between a faulty lock, an obstruction, and a mistaken expectation. In such everyday acts, object, presentation, and our own conditions of access are already distinguished. This paper asks how this order becomes intelligible as a realistic relation to the world.

We ordinarily explain the situation through an articulated description of the world: a person stands here, a door there, and perception connects them. As an explanation of the distinction between inside and outside, however, this already employs the articulation being investigated. An epistemologically critical reconstruction therefore asks which relationships support determining something as an object, an imagining, or a condition of access. It examines already formed perceptions, memories, concepts, and scientific knowledge, rather than a supposedly pure initial state.

Current acts of determination, descriptions of one's own experience, and scientific reconstruction must be distinguished. That determination is taking place does not yet decide what that enactment is. Self-description incorporates experienced differences and limits of its access and can draw on scientific knowledge. The model of the cognitive system and its relation to outer form also remain results of cognition. A brain-based explanation can correct self-description without becoming a starting point free of presuppositions.

The positive thesis is that, in the human relations to the world examined here, inner form and outer form can be functionally reconstructed from different profiles of determination. Taking up earlier determinations and comparing them enable units of reference to be continued. Stabilized relationships support expectations; readable mismatches make their continuation a diagnostic problem. The attribution scheme in Chapter 6 develops this corrective achievement. What is reconstructed are conditions of particular achievements, not the ontic production of the world.

This double movement connects the world-order with explaining our own cognition through body, brain, environment, and social practices. World-description, experiential description, and the model of the cognitive system can continually correct one another; their access and justificatory contributions remain distinct. The reconstruction examines their interaction. The examination of validity asks which expectations, connections, and explanatory claims hold under which conditions, and where they must be limited or revised.

The basic rule examines additional claims in both directions. Conditions and successes of epistemic determination support only those conclusions for which a justificatory connection has been established. Being bound to cognition does not establish that experience creates the world; successful world-description does not by itself demonstrate convergence toward reality in itself. The force of a test remains relative to its claim and conditions.

'Realism without an outside' reconstructs an external order in which we are embedded, whose achievements of determination and scope themselves remain open to investigation. Scientific self-location also belongs to this order; it is not a ready-made starting point. Ordinary talk of an outside remains possible.

2. Realism and solipsism as an initial tension

Realism is not a single position. The everyday assertion that the door remains closed even when nobody looks differs from the scientific assumption of unobservable entities, and both differ from the thesis of a single complete description of the world independent of any possible cognition. These claims can be connected, but they are not identical. Criticizing the strongest claim does not automatically refute the weaker ones.

Solipsism, too, requires a distinction. The claim that only one's own consciousness exists is a global existential thesis. The observation that every present certainty and doubt occurs within an act of determination initially concerns the conditions of our access. It does not decide what else exists. This reflexive insight is not itself treated as solipsism in what follows.

Cartesian doubt illustrates the difficulty of securing even familiar beliefs about the world against far-reaching possibilities of deception. Its role in the Meditations is not exhausted by a solipsistic position, however; Descartes himself develops further justifications (Descartes 1996, Meditations I–II and VI). For this investigation, the question of what actually follows from such a situation of access is sufficient.

Realistic world-orders connect observations, expectations, and interventions. They enable imagined changes to be distinguished from processes that do not change accordingly through mere imagining. Such relationships need not await an ultimate foundation before they can support orientation. What must be investigated is how they are stabilized, which claims are connected with them, and under which challenges their limits become visible.

Scientific success, too, is observed, described, and assessed. Its evidential force depends on which achievement was expected under which conditions and which mismatch the procedure could have detected. A limited success does not already confirm a comprehensive interpretation of reality. The same scrutiny applies to the inference that cognition's situated character shows the world to be merely subjective. A shared rule of justification does not imply equality of available reasons or burdens of justification.

The initial tension is thus between a justified relation to the world and reflexive examination of its conditions and claims. Realism and solipsism serve as a selected tension, not an exhaustive space of possibilities. The following chapters investigate how engagement with the world and reflection can be brought together without deriving a ready-made world ontology from cognitive conditions, or a presuppositionless self-explanation from world-description.

3. Boundary tension and the examination of global interpretations of reality

The tension between realism and solipsism concerns different claims. An order can tenably connect expectations, actions, and shared reference, while a comprehensive interpretation of the relationship between world and cognition requires additional reasons. Boundary tension here denotes the tension between this realistic achievement of ordering and its possible ontological overextension. It is no law according to which more reflection necessarily means less tenability. Reflection can precisely reveal conditions of correction.

A skeptical interpretation can describe resistance, measurements, and other people as contents of a deception scenario. Its logical possibility, however, supplies neither discriminating expectations nor equivalent tests. What matters for model governance is which relationships hold under variation, which connections succeed, and which counterevidence requires change. This decides no global ontology; the investigation discloses the conditions of particular achievements of ordering.

Ontological overextension must be examined on both sides. Whoever infers from cognition’s being bound to acts of determination that only their own experience exists expands a finding about access into a comprehensive existential thesis. Whoever infers from the successful testing of particular world-descriptions that the relationship between world and all possible conditions of cognition has thereby been conclusively determined likewise expands their scope. The shared requirement of examination asserts neither equal reasons nor equal burdens of justification. But it also permits no comprehensive realist prejudgment that subsequently scrutinizes only solipsistic conclusions.

Comparing explanations, controlled testing, and conceptual examination can challenge different claims. The organization of an experience does not yet decide in which contexts its determinations can be continued. The dream case in Chapter 6 illustrates this assignment of validity conditions. For more comprehensive interpretations, the additional justificatory step must be made explicit. That no decisive comparison is available here does not establish undecidability in principle.

4. Givenness and positive determination

That something appears, its determination as something, and the explanation of its occurrence accomplish different things. Pain can be present while its location, cause, or significance requires correction. A different causal explanation does not retroactively abolish its occurrence. Conversely, the occurrence does not justify a particular explanation. Givenness here marks this difference without introducing an unstructured experiential material as an object.

Positive determination makes something distinguishable as something—for example, in perception, assignment, memory, concept, measurement, or inference. ‘Positive’ means determining content; a negation can also determine. Calling something pain, green, or a neural event already employs distinctions rather than reading off a givenness available without presuppositions.

Experience nevertheless does not begin only with its naming. This distinction gives the investigation its point of departure without inventing an initial temporal phase. Experienced green and a thought about atoms can be available simultaneously. The thought is not the atom; color experience is not its scientific explanation. Simultaneous availability establishes neither sameness of kind nor equal justification.

The investigation distinguishes several achievements. Relational graspability makes a difference available for processing. Retention or trace concerns its continuing effect; taking it up again concerns its renewed processing. Comparison relates forms to one another; stabilization continues relationships despite changes. These achievements do not invariably presuppose a developed model.

Specific dependencies must be justified by reference to the task. If a present state is to be compared with a temporally separate earlier state, something of the earlier state must become available—for instance as memory, recording, persisting trace, or renewed inference. Without such availability, this particular comparison cannot distinguish between the earlier possibilities. It does not follow that every comparison presupposes memory: simultaneously available forms can be directly related. Existing concepts and models can likewise determine which differences are noticed and retained in the first place.

Within already formed cognitive contexts, these achievements influence each other: existing determinations guide comparisons and can be changed by their results. The reconstruction elucidates this interaction but does not already explain the emergence of determination as such. An assignment—for example, that the door is closed—can require revision in light of further perceptions or interventions. Stabilization as a unit of reference, examination of its determinations, and the ontic production of what is determined are different questions.

Denying current determination itself performs determination. Naming it is also already a determination. This reflexive finding requires the accessibility of world- and self-descriptions to be addressed; it establishes neither a particular theory of their bearer nor a priority of immediate self-knowledge, nor does it prohibit scientific explanations of origins.

5. The basic rule and the scope of justification

Three limits must be distinguished. Present ignorance can be overcome through further investigation. A procedural limit concerns a particular achievement under specified conditions. Indeterminability in principle, by contrast, asserts that the matter in question cannot be determined by any of the possible modes of cognition being invoked. The third statement does not follow merely from the first or second. Where only the available reasons are insufficient, the following discussion speaks of a limit of justification.

The basic rule initially concerns a particular transition: ‘This procedure discloses nothing further here’ is turned into a description of what supposedly lies beyond its reach. But marking a limit establishes neither that such a further domain exists nor what properties it would have. Nor does it by itself establish that domain’s nonexistence. That a statement of this kind can be formulated must be distinguished from its justification and from a demonstrated limit to its determinability.

The more general question examines the claimed connection between cognitive procedure and object. A reading, a representational format, an absent detection, or a success is initially a particular finding. What it says about its object depends on further relationships. These can be supported by knowledge of instruments, background knowledge, comparison, theory, or conceptual inference. What is required is not a completely new source or one independent of all cognition, but a supporting connection precisely for the additional claim.

Four types of transition clarify this task. Marking a limit and positing a further domain: which reasons support the claimed existence or constitution beyond a procedure? Absent detection and nonexistence: would the procedure have indicated the object sufficiently reliably under the conditions investigated? Representational form and object structure: which assignment justifies transferring this particular feature? Successful testing and general status: which reasons extend a limited success to general reliability, identity, or completeness?

The procedure can be expressed in four questions: what is the initial finding? What additional claim is made? Which connection supports this step? What counterevidence or qualification would change it? A further check asks whether an inference moves from a type to an individual case, from a conditional statement to existence, or from limited findings to all possible cases. These are familiar tools of argument analysis. Their targeted combination at these transitions is the working method proposed here.

An argument’s task must also be specified. An explanation within a realistic world-description can be justified without thereby refuting an opposing position. If it is meant to accomplish such a refutation, it must not merely presuppose the decisive point at issue. This does not require the opponent’s prior agreement to every reason. It requires justification of the disputed point or of the presuppositions relevant to it.

A justified inference can remain indirect and fallible. If a suitable procedure would reliably detect an elephant in the room under investigation and the examination produces no such finding, this can justify its absence. An elaborate sensitivity model is not needed for every everyday judgment. The silence of an unsuitable procedure, however, does not support the same conclusion. The basic rule examines the connection; it does not demand a proof without presuppositions.

The following source case examines the transition from limited cognitive achievements to a universal limit thesis; it does not serve as evidence of confirmation double-counting. Lorenz explains forms of intuition and thought as evolved organic capacities and uses this to justify a limited fit with the environment. He explicitly does not equate appearance and thing in itself (Lorenz 1941, 98–102). In his microscope comparison, he distinguishes features of the instrument from those of the object and obtains indications of performance limits under shared functional conditions (112–114). These proposed justifications must be taken into account.

On p. 97, Lorenz also claims that what exists absolutely will in principle never be completely knowable even to the highest theoretically conceivable living beings. He gives the necessarily categorial form of thought as his reason. His grid comparison reinforces the argument: an apparatus with finitely many distinguishable elements has limited resolution (113). This establishes performance limits of a given apparatus. The universal thesis would additionally require showing why every possible mode of cognition must omit relevant determinations, and why other procedures or their extension cannot compensate for the particular loss. Dependence on form alone does not demonstrate this. The reasons offered therefore do not sufficiently support the universal claim; it equally does not follow that complete cognition is possible.

A second question concerns the distribution of limits: even if every cognizing being were unable to know something, no particular domain unknowable to all beings would thereby be established. Lorenz himself mentions species-specific differences in limits; criticism must not attribute to him an identical boundary for all beings. This distinction also does not refute the weaker claim that each has its own limits. Both claims must be examined through their respective reasons.

The case shows the procedure’s specific division of labor: the grid comparison justifies limited resolution, the universal limit claim requires a further step, and checking the quantifiers prevents criticism from overextending itself. Whether this combination offers an advantage over existing argument analysis requires comparative examination. Its additional value would be shown if it made relevant transitions easier to identify or their required connections more precisely examinable; mere renaming would not suffice.

6. Inner form, outer form, and attribution

Determinations are not all equally available or alterable. We can often vary imagined views without observations or possibilities for action changing accordingly. Other relationships recur under different conditions, limit expectations, or resist mere variation. No single property decides the classification: imaginings can impose themselves, and bodily conditions can be changed through interventions. The reconstruction therefore asks about the profile of connected relationships, not a single characteristic.

When such relationships can be taken up again across several determinations, profiles of variability, availability, dependence, recurrence, and resistance become consolidated. Inner form organizes, for example, relationships among one's own sensations, memories, and imaginings; outer form organizes relationships that are comparatively recurrent and resistant to mere internal variation. Both are functional forms of ordering, not originally separate domains. This reconstruction of profiles is neither an empirical developmental history nor a claim about universally necessary stages of cognition (Rapp 2026b, Chap. 2).

A door looks narrower from a new position. We compare its edge with the frame. If its position relative to the frame remains the same while the view changes with our position, this supports a change of view. If the gap changes while our position stays the same, door movement must be examined. The earlier view is taken up again as a view of the same door. This continuation connects changing appearances with expectations and remains corrigible through further perceptions.

On this basis, changes are attributed more precisely: the door is determined as a unit of reference that can be continued, the observer's position as a condition of access, and a photograph as an editable presentation. This attribution uses the stabilized order and can also change it. It is not a prior division into three kinds of things. One's own body, for instance, can be both an object of investigation and a point of reference for one's own sensations. The assignment, too, remains open: someone who imagined a door closing can later be uncertain whether it was seen. Then its continuation as perception or imagining must itself be examined.

These achievements have specific dependencies. If an earlier determination of an object is to be corrected, its reference must remain available for comparison. Without comparable differences, it cannot be decided whether the door stands differently or merely appears different. Stabilized relationships determine which changes are compatible with the same unit; expectations open up further tests. The feedback remains important: someone who recognizes a mirror assigns views differently from someone who assumes a passageway. The relationships required can remain implicit in practical dealings.

Friction denotes the epistemically readable mismatch of an activated, stabilized order under the conditions of its enactment (Rapp 2026b, Chap. 5). It arises, for example, when an expected continuation fails to occur or relationships do not fit as assumed. Resistance alone is not yet friction: a closed door can precisely meet the expectation. Only a particular mismatch creates a need for diagnosis; it determines neither the cause nor the appropriate correction.

A constructed camera case begins with such a mismatch. In an image, the edge of a door changes position. The first interpretation attributes the entire image change to the door opening and expects

the doorframe to remain unchanged in the image. Yet comparison also shows a displacement of the frame. The interpretation does not account for this relationship. Door movement, camera movement, and a subsequent shift of the image crop must be examined, including their interaction. Suppose before-and-after images and a preserved recording from before processing are available; these conditions of the case would themselves need examination.

Different tests are specified before the outcome is known. To test door movement, the door's position relative to the frame must be compared, taking a changed viewing angle into account. A fixed second camera recording the door, frame, and first camera can test both door and camera movement. To test a processing effect, the same saved source images are displayed with and without the processing in question. If their position changes only through this operation, that difference is attributable to presentation. Merely repeating the same processed recording supplies no additional access.

Suppose these tests yield the following results. The second camera shows that the door moves relative to the frame while the first camera also changes position. Comparing identical source images shows that post-processing additionally shifts the crop. The initial interpretation is therefore refined: the door moved, but the entire observed image change must not be attributed to it. Object change, access change, and presentation change contribute jointly. These qualitative findings do not yet allow calculation of the share of image displacement attributable to each change. Further geometric and technical determinations would be needed.

The outcome presupposes, in particular, that recordings can be temporally aligned, reference points are sufficiently stable, and processing steps are traceable. A second camera is not independent merely because there are two: shared software or synchronization errors can compromise the comparison. Without appropriate controls, attribution remains partly open. Camera movement is itself an event involving an object, but counts here as a change of access with respect to the observed door. The three aspects are neither exclusive classes of things nor demonstrated exhaustive kinds of causes. The case tests selected explanations; further possibilities and revision of the initial classification remain open to investigation. Limited completeness under specifically justified conditions is not thereby excluded, but this case does not establish it.

Friction becomes readable in the relationship between the image changes and the initial interpretation. Its causes are not thereby already determined. In the constructed outcome, controlled comparison distributes the explanation across door, camera, and processing; the initial assignment is limited accordingly. The scheme's usefulness lies in specifying appropriate tests and their limits before the outcome. The categories produce neither findings nor solutions; the specific controls require technical knowledge.

Kant's Second Analogy addresses a related problem. The perception of a house can begin at the top or the bottom; no corresponding succession of its parts follows from the perceptual sequence. In the case of a ship drifting downstream, however, the perceptual sequence is bound to the event being followed. The objective succession is determined through a necessary connection according to a rule (Kant 1781/1787, A 190–193/B 235–238). Kant thus also distinguishes perceptual succession from events in the object and asks what justifies connecting them. The present approach does not introduce this distinction for the first time.

The camera case clarifies the different task. Assuming rule-governed relationships enables the tests but does not yet decide which change in door, camera, or processing explains an individual finding. Here, competing attributions are compared under specified conditions and may be jointly confirmed. This answers a particular diagnostic question, whereas Kant’s argument concerns the necessary condition of objective temporal succession. The diagnosis does not refute that argument or show a principled incapacity of Kantian inquiry. Its additional step relative to the passage compared here is the explicit division and controlled examination of an initially ambiguous finding. Without the knowledge and comparative reasons employed, the scheme would also be insufficient.

A further constructed case concerns the assignment of validity conditions. Someone dreams of a blocked door, apparently changes position, and experiences another person intervening. This scenario, too, can exhibit relationships of outer form. If its door is initially assigned to the shared waking world and that assignment later cannot be continued, friction arises at that point. The correction need not deny the remembered experience or its organization. Experiential description, shared reference, and functional-empirical examination support different claims here. Outward organization alone does not determine their validity.

The functional reconstruction remains challengeable in its particular claim: it must be changed if its relationships yield no different implications for testing, if criteria are chosen only after the outcome is known, or if a simpler description accomplishes the same work. Its task is to explain the stabilization of reference, the readability of mismatches, and the conditions of correction. Chapter 13, with Figure 1, elucidates the scientific return to cognition.

7. Within without an outside

‘Within a cognitive context’ here denotes the conditions and acts of perceiving, remembering, distinguishing, and testing. It does not denote a spatial container. Temperature is determined within a practice of measurement, but it can be the temperature in the next room. The situated character of access does not spatially relocate its object inside the practice. Nor does a statement about the next room achieve a standpoint outside all determination.

Questions about an outside must therefore be distinguished by their content. That the door lies outside my body or remains closed without my observing it is a determinable claim about an object. Whether a process would exist without any experience claims a more extensive independence. A complete determination of the world independently of all conditions of cognition is stronger still. These questions must not be treated alike merely because they share the word ‘outside.’

The phrase ‘an outside beyond outer form’ does not by itself clarify which alternative is meant. Asking whether objects also exist without corresponding acts of cognition raises an independence claim whose reasons can be examined. Asking instead about the constitution of a domain supposedly inaccessible to any possible determination initially requires clarification of what would distinguish possible answers. The spatial metaphor of an other side supplies no such clarification.

This need for clarification must be distinguished from a determinate but presently unanswered question. Missing reasons do not establish meaninglessness. A question that remains indeterminate does not in turn establish an unknown further domain. Nor has undecidability in principle been shown. The investigation therefore does not hold open a ready-made external sphere; it first requires a determinate claim and then examines its justification.

Regarding concept and object: that ‘external world’ acquires meaning only within a cognitive context does not alone decide the existence or cognition-dependence of its possible referent. The formation of outer form and the existence of what it refers to are different questions. Their connection must be justified and cannot be read off from the word ‘within.’

8. Methodological self-limitation without an external standpoint

The present reconstruction, too, already uses determinate concepts: difference, relation, trace, object, access, and presentation. It discloses no nonconceptual origin from outside. Its justification depends on whether the distinctions make achievements intelligible, help assess alternatives, and can be changed in response to objections. Further reflection examines how the reconstruction itself organizes its findings. In the camera case, we combine several recordings as findings about the same door event. This assignment of our own now becomes the object: which timestamps and reference points support it, and what would require its revision? The synchronization check mentioned in Chapter 6 can support this examination. The reflexive step consists in investigating a previously used assignment as our own corrigible determination. It requires a specific question, not a mere multiplication of metalevels.

The basic rule therefore applies first to our own unwarranted strengthening of conclusions. The epistemic formation of a unit of reference does not imply the ontic production of its object. A presently missing explanation does not imply an explanatory gap in principle. The usefulness of reconstructing profiles does not imply a law of all possible cognitive systems. And different access entails neither ontological difference nor identity of what is accessed.

The reflexive point of departure is narrower. An objection formulated here must also appear as a determinate statement if it is to be examined. Denying present determination itself performs determination. This finding limits complete self-negation in enactment, but explains neither its origin nor its bearer. Naming it is a corrigible reflexive determination; it does not automatically stand above a scientific description.

The reconstruction must allow particular losses. If a scientific or conceptually simpler account explains the same differences more precisely, its additional conceptual burden must be justified or reduced. If the proposed attribution is adjusted only after the outcome is known, independent testing is lacking. If several assignments remain compatible with the same reasons, that indeterminacy is a result and must not be hidden by new words.

‘No external standpoint’ thus denotes a limit to the investigation’s own claim. It must not be used as an objection that neutralizes counterexamples by treating them as mere further determinations. Universal limit claims in this paper are also subject to the scrutiny applied to the Lorenz case in Chapter 5.

9. Cognitive system, experience, orientation, and action

A model of a cognitive system already connects differences, states, and achievements. For this, determinations must be relatable to one another: entirely unconnected moments could not be combined into such a model. What is initially claimed is this connection among particular comparative and reconstructive achievements. Its reflexive description must be distinguished from explanation through a particular system. Merely invoking connection does not yet identify an I, a brain, or a closed whole of all cognition.

A cognitive system here denotes a functionally or scientifically described nexus with specified cognitive achievements. Its reconstruction can include experience, embodiment, memory, language, social relationships, and technical aids. Reflexive self-description additionally incorporates how something is experienced and which differences or limits become noticeable. It can be scientifically informed. These modes of description overlap; their justification must be assessed according to the question. No blanket epistemic priority of either follows.

Other human beings, animals, and technical systems are initially determined within a description of the world. Which of them fall under a shared functional concept depends on specified aspects of comparison. Discrimination, memory, expectation formation, and correction can be such aspects. Their mere listing establishes neither a unified class of systems nor the same basic status for all systems compared.

One’s own experience must be distinguished from its description and from attributing experience to others. Regarding how something is presently experienced, one’s own access has a distinctive evidential weight that a measurement finding does not simply replace. Naming, remembering, or causally interpreting an experienced difference can nevertheless go wrong. This priority of access therefore establishes no general superiority of self-description. In other systems, the capacity to use concepts or compare models does not by itself establish phenomenal enactment; conversely, a lack of external determinability does not establish its absence. How acts of determination and experience relate in general is not thereby decided.

Orientation and action raise additional questions as well. A system can process differences without this already determining their significance for its orientation or which interventions it performs. These aspects can be closely coupled, but form no developmental ladder demonstrated here. Learned adaptations when dealing with a sticking door can, for instance, succeed without the acting person using a physical theory. Explaining the achievement physically does not yet attribute a corresponding internal model to that person.

The paper investigates selected cognitive achievements; human cognition is its central case. Transfer to other systems requires specific comparative reasons. Our reconstruction of a system, the system’s possible investigation of its own perspective, and our renewed examination of the reconstruction are different tasks. Error correction, functional self-modeling, and a conscious relation to oneself are not identical. Not every cognitive system investigated must be self-reflexive.

10. Modeled systems and reflexive transfer back to ourselves

We do not understand our cognition exclusively through immediate self-observation. Other people can point out our errors, experiments can reveal perceptual illusions, and biological investigations can uncover conditions that do not become apparent in experience itself. World-supported self-correction is therefore no subsequent addition to an originally complete self-knowledge.

Modeling other systems can make a particular contribution. If a relationship between attentional conditions and errors of judgment is investigated in other people, a corresponding model can also become relevant to our own situation. Transferring it back, however, requires more than the same designation. Which features are comparable and why precisely that comparability supports the inference must be specified.

A tenable comparison generates expectations. If, for example, certain conditions of information intake are changed, the investigated error pattern should vary in a way that can be specified beforehand. If the expected effect fails to occur or one’s own situation differs in a relevant feature, the transfer must be limited. The comparison must not be rescued by retrospectively shifting its basis to ever more general similarities.

Successful functional testing can consist in expectations confirmed under examination, corrigible assignments, and repeatedly successful coordination. It concerns the tested achievements under their conditions. A model can explain a technical system’s behavior without thereby supporting a claim about its experience. Likewise, a commonality between human and technical information processing can be informative for one task without equating the systems as a whole.

Reflexive transfer back is thus one form of model-mediated self-reconstruction. It stands alongside self-observation, linguistic communication, practical experience, and scientific investigation. These approaches can correct one another. Their combination yields no neutral external view of oneself; nor does this entail a deficit that would in principle devalue scientific self-knowledge.

Transfer back can justifiably change self-description. If its success is additionally meant to confirm an identity, completeness, or general reliability, the connection to that further claim must be stated. New findings must remain distinguishable from merely repeated presuppositions. Chapter 13 investigates how a world-description is related back to its own status through the explanation of cognition.

11. Meaning, units of reference, and determining reality

Outer form in Chapter 6 connects profiles of determination with reference that can be continued. A unit of reference is a nexus that can be identified, taken up again, and referred to under particular conditions. Events, processes, symptoms, rules, or institutions can be units of reference just as material things can. ‘Object’ here denotes such maintained reference, not a presupposed ontological basic unit. Its epistemic formation does not decide the ontic emergence of its possible object.

Stabilization means selective continuation: particular relationships remain decisive while other changes are permitted or set aside. A tree can remain the same despite growth; measurements are related under sufficiently specified conditions of comparison. The identity conditions can themselves be changed—for example, when an apparently unified symptom must be divided into different processes. It thus remains examinable whether an earlier determination is corrected or a different unit of reference is formed.

In ERP, stabilization as an identifiable, revisitable, and referable unit is called ontologization (Rapp 2026b, Chap. 4.2). It enables reference and is no metaphysical commitment. Continuation becomes absolutization when its presuppositions and limits are concealed and the order is treated as immediate, exhaustive, or without alternative. A classification can then appear as the thing itself. The specific overextension must be examined; ordinary object-talk or scientific explanation is not problematic merely as such.

Meaning concerns the connections that a distinction opens up within a context. Determining a door as blocked changes expectations and possible actions; the same color deviation can indicate lighting, material, or measurement error depending on the investigation. This asserts no complete theory of meaning. It makes visible the particular function through which a difference becomes relevant to further determination. The meaning of ‘real’ is therefore not already elucidated by merely invoking something independently existing: how object-reference, persistence, and correction become intelligible still needs to be shown.

Not every such order is already a model. A stabilized perceptual or expectational order can structure differences and continuations without itself being specifically variable as a delimited form. Model-capability arises when units of reference and relationships are connected in a sufficiently identifiable, comparable, and testable way. The more extensive theory of stabilization further distinguishes these achievements (Rapp 2026a; 2026b, Chap. 4). Here it is enough that object-reference does not invariably presuppose an explicitly developed model.

Nor do the relationships run only from simple difference to model. A medical model can influence which observations count as connected; a counterfinding can dissolve the unit again. An order guides reality-understanding insofar as it structures further determinations, expectations, and interventions. This functional status must be distinguished from its established validity: even an order whose claims fail under suitable examination can continue to guide orientation.

Validity does not follow from stability alone. Repetition can perpetuate the same measurement error; agreement can reflect shared presuppositions. Low friction, too, supports tenability only insofar as relevant mismatches could have become visible under suitable conditions. Conversely, friction initially requires diagnosis: it can challenge an application or coupling without undermining

the whole model. What must be examined is which relationship fails and how far correction must extend.

To examine claims, the Epistemic Reality Project uses the concept of validity: the domain-bound tenability of a model or claim under challenge. Validity status denotes the justified, fallible assessment of this tenability on the basis of available tests (Rapp 2026b, Chap. 3). Validity is neither mere belief nor agreement, stability, or usefulness.

Which tenability is tested depends on the claim. An approximation requires examination of its accuracy within its specified range; a rule for action requires examination of its claimed success. Success in application does not automatically support further existential or property claims. A high validity status can prove inadequate under further suitable challenge; new findings can also correct earlier assessments. Missing tests and lost evidence, by contrast, initially mean a limit to the justification that can be established. These distinctions require no additional theory of truth.

Comparing explanations is one possible mode of challenge. Treating a persisting door as a unit of reference connects changing views, obstacles, and interventions in a testable nexus. Alternative interpretations must be assessed by which relationships they disclose and which mismatches they make visible. Merely adapting to every possible outcome supplies no discriminating expectation. For other claims, experiential fit, shared revisiting, or conceptual countercases can be decisive. Which examination is appropriate depends on the claim and its validity conditions.

Cognition-relative realism here denotes the functional reconstruction of an external order that guides our understanding of reality and places us within it. Within this order, units of reference are continued, expectations formed, interventions coordinated, and mismatches addressed. Its limited validity permits realistic speech without presupposing an independently available inventory of the world as a standard of comparison. Successful testing is no measure of convergence toward reality in itself. Conversely, the order’s dependence on cognition implies neither that experience produces its objects nor a merely subjective reality. Further claims require their own justification under the basic rule.

12. Forms of binding

Limiting comprehensive claims does not deprive cognition of binding force. A door can block the way, pain can dominate a situation, and a measurement finding can challenge a theory. The different grounds of such binding must be distinguished.

The reflexive non-eliminability of current determination concerns enactment: its present denial itself performs determination. Being bound to enactment is not one more successfully tested description alongside others. Practical binding and tested tenability are also articulated and examined in determinations. Practical binding concerns situations whose consequences and resistance we cannot cancel at will. Tested tenability, by contrast, concerns a claim that has held up under specified conditions.

Being bound to enactment here denotes a condition of our articulation and examination; it explains neither the ontic emergence of resistance nor the cause, duration, or bearer of determination. Practical binding and tested tenability in turn support different conclusions: a compelling situation can be wrongly explained, and a well-tested claim can fail under new conditions. The distinctions therefore yield no unified measure of validity.

These forms of binding make different contributions to a realistic relation to the world: resistance limits expectations, testing supports particular statements about it, and reflection examines the determinations and access carried along. Practical binding alone does not establish the tested tenability of an explanation; appropriate tests are required. Describing one’s own affectedness and explaining its conditions are also different claims.

13. World-order and the reconstruction of cognition

Outer form connects objects, people, bodies, and causal processes into a world-order in which we locate ourselves. Within this order, we explain the bodily, technical, and social conditions of cognition. This reconstruction from the world-order can change our understanding of the achievements investigated in Chapters 4 and 6 as taking up again, comparison, and stabilization. The world-order thus becomes a means of investigating its own conditions of determination. The assumed functions and their relationships, too, remain reconstructed determinations.

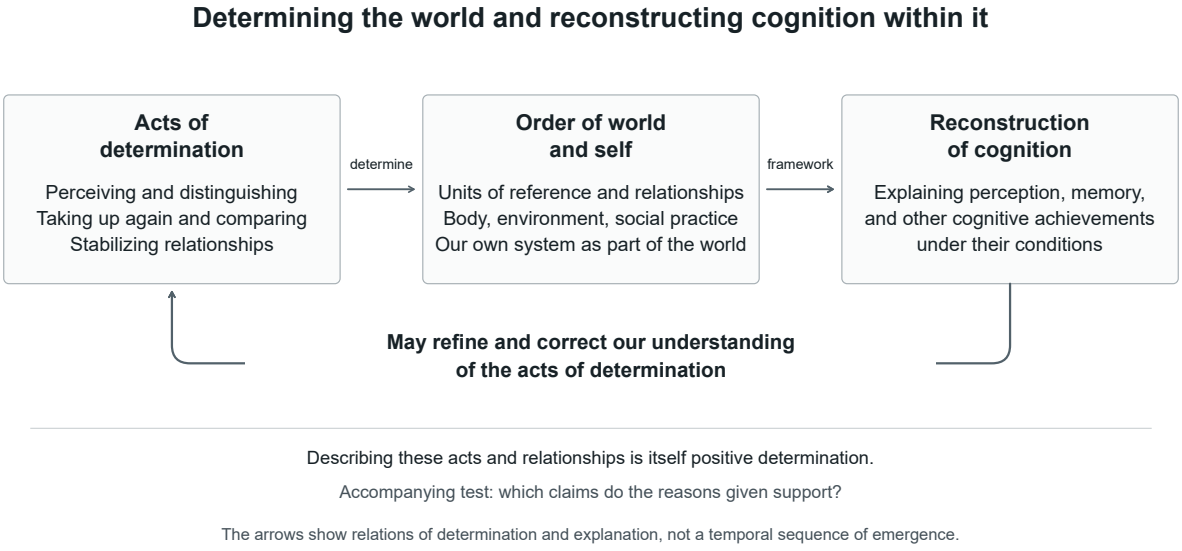


Figure 1. Determining the world and reconstructing cognition within it.

Absolutization occurs when the world-order developed appears as an immediately given and exhaustive foundation, while its achievements of determination and limits recede. The model of the cognitive system and its relation to outer form also remain results of cognition. Examining them requires neither a complete world model nor a second entity alongside the brain.

When we locate cognition in the brain, we already use the order of objects, space, and causality whose achievements of determination we are investigating. A tenable brain-based explanation thus remains an achievement of cognition itself. Spatially locating conditions must be distinguished from the organization of experienced contents: mental arithmetic need not be experienced spatially; this does not imply that its conditions are nonspatial.

Descriptions of one’s own experience can also challenge an explanation. Suppose someone distinguishes two experiential states for which a procedure yields the same measurements. This finding alone does not refute the experienced difference. Both the procedure’s detection capacities and the description, recognition, and comparison of the difference must be examined. A theory asserting sameness of experience must confront this finding; the same measured conditions, by contrast, do not yet assert the same experience.

Scientific findings can in turn correct assumptions about voluntary control, memory, or immediate self-knowledge. That the brain, too, is epistemically determined undermines no justified functional

or causal dependence. Which description must be corrected depends on the specific question and its reasons.

Explaining how a belief comes about does not already decide its justification as knowledge. The relationships explained must supply reasons for the claim. Sellars distinguishes empirical description of a state from placing it as knowledge within a justificatory context (Sellars 1956, §§35 –38). No exclusive jurisdiction follows: scientific investigation can explain conditions of emergence and examine reasons.

Reflexive investigation is therefore not already an error. A thermometer can be checked using further measurements. Researchers can investigate conditions of vision although they themselves see. What matters are the specific presuppositions and sources of error. A shared descriptive language does not by itself make findings dependent; different disciplines do not by themselves make them independent. New expectations subjected to controlled testing can supply additional support.

A particular case of such overextension is confirmation double-counting: a theory employs an assignment connecting stimulus, object, and perceptual achievement, explains a success through it, and presents this as independent confirmation of the entire world-order. If only the presupposed assumption of fit returns, that additional evidence is missing. New predictions about perceptual errors can, by contrast, support particular presuppositions under suitable controls. The constructed case distinguishes a specific unwarranted strengthening of inference from legitimate reflexive investigation.

Franzen separates evolutionary explanation under realistic presuppositions from a first proof of realism; additional support remains possible (Franzen 1984, 71–72). Quine explicitly accepts the mutual containment of epistemology and natural science once the program of deriving science from sense data has been abandoned (Quine 1969). The use of their own world-order is thus not overlooked here. What remains to be examined is the additional claim to confirmation.

Another additional claim concerns identity. Smart connects scientific relationships with a parsimony argument against additional mental processes and fundamental psychophysical connections. For him, different meanings of experiential and brain descriptions do not exclude the same reference (Smart 1959). This proposed justification requires examination; different access does not establish nonidentity.

Identity and exhaustive explanation remain distinct. A perceptual illusion fully explained with respect to particular questions does not supply a complete theory of experience. Open questions, conversely, establish no nonmaterial bearer. Nor does using an order of spatiotemporal objects and an inner–outer articulation establish that they are the only possible or universally necessary order. Their scope remains examinable; no alternative order is thereby justified.

14. Science, empirical inquiry, and temporal placement

Scientific reconstructions can disclose a past without observers at the time; their validity is assessed through presently available traces and testing relationships. Meillassoux makes such statements a challenge to an inseparable connection between being and givenness (Meillassoux 2008, Chap. 1). This investigation distinguishes the scope of each reconstruction without thereby deciding his further argument.

We determine temporal relationships through experience, memory, or inference from traces. The latter enables statements about a past without observers. Comparing them requires available, temporally assignable differences; shared dating requires relatable standards. Remembered succession, logical dependence, and actual sequence remain distinct: a presented calculation does not by itself establish the causal course of calculating. The timelessness of enactment does not follow.

Within this world-time, I understand my life as limited. Its beginning is ordinarily inferred from testimony and records; whether birth can be experienced is not thereby decided. Dying can be experienced, whereas one’s own nonexistence is no experiential state. This placement connects what is experienced with scientifically and socially supported attributions. It illustrates how self-understanding and reconstruction from the world-order complement each other.

Time before my present experience, before my life, before any experience, and independently of all conditions of cognition are different claims. The conditioned character of our understanding of time does not already make temporal processes dependent on experience; a prehuman past conversely does not determine time independently of all conditions of cognition.

Empirical validity requires more than agreement or usefulness. Reproduction, new predictions, controlled interventions, and comparison of explanations can support it. Shared reference, disagreement, and traceable correction enable testing across participants. Subjective, intersubjective, and functional-empirical domains distinguish validity conditions; this triad serves as a reconstructive working hypothesis, not a division of what exists in the world (Rapp 2026b, Chap. 3). Domain and mode of testing differ: empirical claims, too, are examined dialogically and conceptually. Additional evidential force depends on differences in relevant sources of error and presuppositions.

The no-miracles argument explains scientific success through the approximate truth of theories and the existence of their objects (Putnam 1975, 73). Examination of limits asks about the additional transition from particular successful testing to this further claim. It is neither adopted as ERP’s foundation nor rejected merely because of its scientific origin.

Unobservable objects can be determined indirectly. The investigation therefore adopts no general restriction of scientific belief to the observable. Van Fraassen’s characterization of scientific acceptance through empirical adequacy must be distinguished from this (van Fraassen 1980, Chaps. 1–2).

15. Philosophical positioning

The following connections situate reconstruction and the examination of claims; new terminology does not establish historical originality.

Chapter 6 compares Kant's Second Analogy with examining an ambiguous camera finding. Both distinguish perceptual succession from events involving the object; specific attribution in the case requires further, corrigible comparative reasons. Kant's necessary causal principle is thereby neither adopted nor refuted. His noumenon as a limiting concept also limits positive determination beyond the conditions of experience (Kant 1781/1787, A 255/B 311; B 307–309). Stroud examines the transition from conditions of thinking or experiencing to the constitution of the world (Stroud 1968, especially 255–256). The same justificatory task applies to this reconstruction.

Dilthey investigates the emergence and justification of belief in the external world through movement impulse, inhibition, and resistance, but also through bodily differentiation, perception, regularity, and other people (Dilthey 1890). He denies an immediate experience of resistance through the will. The connection therefore concerns the interaction of several relationships; resistance alone is not a sufficient point of departure here either. His historical psychophysiological explanation is not adopted as a present-day finding. This paper's closer comparison of tasks is developed in relation to Kant.

Carnap distinguishes internal existential questions within a linguistic framework from external questions about the reality of the system of entities as a whole. The efficiency of thing-language is not to count as confirming evidence for the reality of the entire thing-world. For the disputed external question, he requires a shared cognitive interpretation and possible relevant evidence (Carnap 1950, §§2 and 4). Examining content in Chapter 7 has a direct connection here. Carnap's further treatment of external reality assertions as pseudo-statements is not, however, transferred to every question of an outside merely because of the label 'external.' For the particular question, content and justification must be examined.

Fine's natural ontological attitude combines acceptance of scientific results with restraint regarding realist and antirealist comprehensive interpretations (Fine 1984). Putnam characterizes metaphysical realism through a fixed totality of cognition-independent objects, a single complete description, and a God's-Eye standpoint (Putnam 1981, Chap. 3). These connections concern the relationship between limited determinations and comprehensive interpretations. Neither an independent theory of truth nor the respective overall position is thereby adopted.

Sellars and Quine are discussed in Chapter 13 in relation to justification and the mutual containment of epistemology and science. This yields neither a priority of immediate self-knowledge nor a refutation of naturalistic investigation.

Varela's neurophenomenology connects experiential description and cognitive-scientific investigation through reciprocal constraints (Varela 1996). This offers a methodological comparison for correction in both directions. In Lorenz and Franzen, realist proposals for justification are examined at particular transitions.

16. Results: world-reference and self-understanding

The investigation reconstructs realistic world-understanding from different profiles of determination. Variability, availability, recurrence, and resistance form functional consolidations of inner form and outer form in the context examined. Taking up earlier determinations and comparing them enable units of reference to be continued through change. Within this order, expectations are formed, interventions coordinated, and readable mismatches become occasions for diagnosis and correction.

The camera case makes this diagnosis of friction concrete. The assumption that door movement explains the entire image change does not account for further comparative findings. In the constructed outcome, the tests distribute the explanation across several coupled changes. The place where friction becomes readable does not already determine its causes. Object, access, and presentation are task-relative aspects within a stabilized order; they do not necessarily exhaust the explanatory space.

The comparison with Kant distinguishes the necessary condition of objective temporal succession in the passage compared from specific tests of attribution. Kant’s causal principle is thereby neither adopted nor refuted. The dream case additionally shows how outwardly organized experience can be continued differently from a determination of the shared waking world. Experiential description, shared reference, and functional-empirical reconstruction require an explicit assignment of validity conditions.

The methodological maxim is that orders guiding our understanding of reality must be assessed by their claim- and domain-bound tenability, their conditions of challenge, and their corrigibility. Stability, orientational achievement, or an absence of friction alone is insufficient. Validity and fallible validity status allow justified model governance without introducing an independent measure of correspondence with an in-itself. The basic rule limits additional claims in both directions.

Scientific accounts of cognition likewise use the world-order developed and remain bound to acts of determination. They can correct self-description, while one’s own access has distinctive evidential weight for particular experiential questions. The order is absolutized when its presuppositions and limits are hidden and its description treated as immediate, exhaustive, or without alternative. Confirmation double-counting is a particular unwarranted amplification of confirmation. Reconstruction from the world-order can also change our understanding of the achievements through which world- and self-determinations arise. This investigation remains examinable and bound to acts of determination.

The contribution connects profile reconstruction, continued reference, friction diagnosis, and examination of our own reconstruction from the world-order. A realistic relation to the world becomes intelligible as a productive ordering achievement whose conditions and limits can themselves be investigated. Neither historical priority, empirical validation, nor general superiority of the entire architecture has been demonstrated. The approach holds insofar as its reconstruction discloses relationships, its tests make differences decidable, and its justification specifies the scope of its results.

Conceptual canon of this paper

Conceptual foundation and local status

The following canon connects with the programmatic conceptual framework of Model Management under Finite Conditions (Rapp 2026b, Chaps. 2–5 and conceptual canon). It explains the meanings required, their function, and their boundaries. The reference does not replace the main text's arguments: Realism Without an Outside independently investigates the connection between profiles of determination, reference, friction, and reconstruction from the world-order.

The first group presents concepts adopted from the core paper in the usage relevant here. The second organizes concepts and distinctions developed for this investigation; their combination claims no historical priority. Local refinements do not silently change the project-wide canon. They remain open to examination with respect to their reasons and scope.

Concepts adopted from the core paper

Stabilization
Brief definition: Selective continuation of features, differences, and connections while other changes are permitted or set aside.
Function: Enables references and earlier determinations to be taken up again for comparison and correction.
Boundary: Neither immutable fixation nor evidence of validity in itself. Repetition alone does not establish tenability.

Unit of reference
Brief definition: A stabilized nexus that can be identified, revisited, and referred to under particular conditions.
Function: Holds fixed what changing views, properties, and corrections refer to.
Boundary: No thing given without presuppositions; its epistemic formation does not decide the ontic emergence of its possible object.

Model
Brief definition: A sufficiently determinate order of units of reference, features, relations, expectations, and continuation rules that can be identified, revisited, delimited, compared, tested, and corrected.
Function: Connects determinations so that expectations and alternative explanations can be specifically investigated.
Boundary: Not every stabilized perceptual or expectational order is already a model.

Validity and validity status
Brief definition: Validity is the domain-bound tenability of a model or claim under challenge. Validity status denotes its justified, fallible assessment on the basis of available tests.
Function: Distinguishes tenability from its established state of examination and limits the scope of claims.
Boundary: Agreement, stability, usefulness, and low friction alone do not establish validity. No replacement for truth and no measure of convergence toward an in-itself.

Cognitive system
Brief definition: A functional nexus capable of taking up differences, stabilizing them, relating them to claims, examining them under challenge, and correcting them.
Function: Enables description and comparison of particular cognitive achievements and the return of their explanation to our own cognition.
Boundary: The relatability invoked in reconstructing it is not yet a model of a cognitive system. The concept presupposes neither an individual biological subject nor phenomenal experience.

Inner form and outer form
Brief definition: Functional consolidations of different profiles of variability, availability, dependence, recurrence, and resistance.
Function: Organize determinations according to their relationships and conditions of continuation. On this basis, the attribution scheme develops distinctions between unit of reference, access, and presentation.
Boundary: Neither spatial containers nor originally separate domains or universal developmental stages. Individual features do not alone decide classification; profiles and their assignments remain examinable.

Friction
Brief definition: The epistemically readable mismatch of an activated, stabilized order under the conditions of its enactment.
Function: Creates a need for diagnosis in expectations, connections, or model organization. The place where friction becomes readable must be distinguished from the relationships causing it.
Boundary: Not identical with resistance, error, falsification, or revision. It determines neither cause nor response; an absence of visible friction does not establish validity.

Ontologization and absolutization
Brief definition: Ontologization stabilizes something as an identifiable, revisitable, and referable unit. Absolutization treats a stabilized order as immediate, exhaustive, or without alternative.
Function: Distinguishes the productive formation of units of reference from concealment of their presuppositions and limits.
Boundary: Ontologization is no metaphysics and initially no failure. Absolutization must be examined in the particular claim, not attributed indiscriminately to all object-talk or scientific explanation.

Concepts and distinctions developed for this investigation

Givenness
Brief definition: A limiting concept distinguishing occurrence, description, and explanation.
Function: Distinguishes, for example, that pain is experienced, how it is described, and how its occurrence is explained. Experienced differences can challenge a description or explanation.
Boundary: No unstructured raw material or positive theory of origins. The distinctive evidential weight of one’s own experience does not make its description or causal interpretation infallible.

Positive determination
Brief definition: Something becomes distinguishable as something, for example through perception, assignment, memory, concept, measurement, or inference.
Function: Denotes the achievements in which world- and self-descriptions become available and examinable.
Boundary: Negations, too, can determine. Forming a determination establishes neither its tenability nor the ontic production of what is determined.

Relational graspability
Brief definition: Availability of a difference for further processing.
Function: Opens up investigation of its continuing effect as a trace, its being taken up again, and its comparison with other determinations.
Boundary: These achievements form no universal sequence of stages and do not invariably presuppose a developed model.

Guidance of reality-understanding
Brief definition: An order's function of structuring the frame of reference for further determinations, expectations, explanations, and possible interventions.
Function: Makes intelligible how an interpretation guides further orientation and changes its consequences.
Boundary: This guiding character must be distinguished from established validity. Claims that have failed under examination can still determine orientation.

Within
Brief definition: Reference to the conditions and acts of a cognitive context.
Function: Marks how world- and self-descriptions are bound to access, even when their objects are spatially distant or past.
Boundary: No spatial relocation of all objects into a subjective inner world and no proof that they depend on being cognized.

Limit of justification
Brief definition: The scope of the available reasons for a particular claim.
Function: Records which conclusion an investigation supports and which further claim remains open.
Boundary: Distinct from present ignorance, a limit of a particular procedure, and indeterminability in principle, which requires its own justification.

Basic rule
Brief definition: Further claims about objects or cognition require a supporting connection to their reasons.
Function: Examines initial finding, additional claim, justificatory connection, and counterevidence in both directions of world- and self-determination.
Boundary: The core paper's boundary rule more narrowly concerns the transition from a limit of determination to a positively determined domain beyond it. The basic rule developed here additionally examines transfers from representational form, absent detection, and successful testing. It does not replace functional reconstruction or decide an ontology by itself.

Cognition-relative realism
Brief definition: Functional reconstruction of an external order that guides our understanding of reality and places us within it, under limited validity claims.
Function: Connects profiles of determination, stabilized reference, friction diagnosis, and reconstruction from the world-order into an investigation of world- and self-understanding.
Boundary: No presupposed comprehensive ontology, independent theory of truth, or secured convergence toward an in-itself. Dependence on cognition does not entail the ontic production of objects.

Reconstruction from the world-order
Brief definition: Investigation of cognition as part of the world-order developed.
Function: Explains cognitive conditions through body, brain, environment, and social practices. The model of the cognitive system, too, remains a result of cognition; scientific findings and experiential differences can correct particular descriptions.
Boundary: No self-explanation without presuppositions. The order employed remains subject to examination for absolutization and additional claims of identity, completeness, or confirmation.

Reflexive transfer back
Brief definition: Justified use of a model of other systems for one's own self-description under specified conditions of comparison.
Function: Discloses our own cognitive conditions through investigated commonalities and discriminating expectations.
Boundary: One possible approach to self-reconstruction alongside describing one's own experience and its limits. Neither the sole origin of self-knowledge nor evidence of experience based on functional similarity.

Status transition
Brief definition: Expansion of a claim, for example from a limited achievement to general reliability, ontological identity, or completeness.
Function: Marks the additional justificatory step that the basic rule examines in each case.
Boundary: No mere change of designation; the new scope requires appropriate reasons and does not automatically inherit the evidential status of the initial finding.

Claim to exhaustiveness
Brief definition: The assertion that a description completely determines the nexus in question in the respect claimed.
Function: Distinguishes explaining a limited question from the further assertion that all relevant epistemic questions have thereby been answered.
Boundary: Limited completeness is possible. Neither identity of the objects of two descriptions nor remaining open questions alone decides whether an explanation is exhaustive.

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Appendix: didactic examples of engagement with the world and reconstruction from the world-order

The following constructed examples illustrate how stabilized reference, expectations, and corrections enable engagement with the world and limit its reconstruction from the world-order. Each moves from a situation through the relevant distinction to a limited consequence. They supplement communication of the main argument, introduce no new canonical concepts, and supply neither empirical findings nor additional proofs of the reconstruction as a whole.

A.1 Measurement and attribution

A temperature reading deviates from the activated expectation. Friction can become readable in comparing the reading with the expectation without its cause thereby already being determined. Changes in the room, measuring location, instrument, or their assignment must be examined. Comparative measurements and calibration can change the diagnosis. A tenable assignment allows temperature determinations to be continued under specified conditions. Neither the instrument's general reliability nor an equation of reading and measured quantity follows.

A.2 Different forms of description

An automatic door remains closed although someone approaches. The disturbance can be investigated with respect to power supply, transmission of a sensor signal, or coupling between sensor and opening mechanism. These descriptions can enable different tests; their mere availability establishes neither equivalence nor the superiority of the more abstract one. Which relationships they capture and which expectations they justify must be examined. The case illustrates choosing a description appropriate to the question. It establishes none of these forms as a complete description of every possible reality; criticizing such a claim does not confirm an alternative ontology either.

A.3 Neural explanation

Suppose a controlled intervention in a neural nexus changes a perceptual achievement. This can support a dependence and correct self-description. Conversely, suppose an experiential difference is intelligibly described that available measurements do not distinguish. Their sameness alone does not refute it; both the tenability of the experiential description and the procedure's detection capacities must be examined. An explanation claiming to capture this difference completely must account for it. A difference not yet scientifically captured does not, however, establish inexplicability in principle. Whether an identity of experiential and brain process is justified, and which questions it answers, each require further reasons.

A.4 Functional comparisons of systems

A technical system is to evaluate camera images of a door and predict whether it opens. Its results are compared with a person’s under changing lighting and with the door partly obscured. Similar patterns of success and error can support a functional comparison for this task; the aspect of comparison and its limits must be specified. No evidence of phenomenal experience follows. Conversely, a lack of external determinability alone does not establish its absence. Describing hardware, training, and inputs is already a positive system description, not access to an indeterminate boundary of givenness.

A.5 Shared reality

Two people experience the same room as differently warm. This is initially no disagreement about the same measured quantity. They compare room temperature, their locations, and further conditions. Identical temperature readings do not refute the different sensation; conversely, that sensation does not alone decide the room temperature. Joint investigation connects self-reports, instruments, and records. It can change assignments and determine differences more precisely. Its continuation is distributed across participants and aids. Agreement alone does not secure validity; articulable differences, appropriate tests, and traceable corrections remain decisive (Rapp 2026b, Chap. 7).

A.6 Taking things for granted and examining them again

A person opens the same door every day, employing familiar expectations without examining lock, hinges, and their own hand movement each time. One day the door sticks. They can now examine whether the mechanism has changed or their previous way of handling it no longer fits. The ordinary relief provided by taking things for granted is not yet absolutization. It becomes problematic when relevant counterindications may no longer change the previous interpretation. What is required is not permanent self-examination but the possibility of targeted renewed investigation. This applies equally to outer form and the basic rule of this paper.