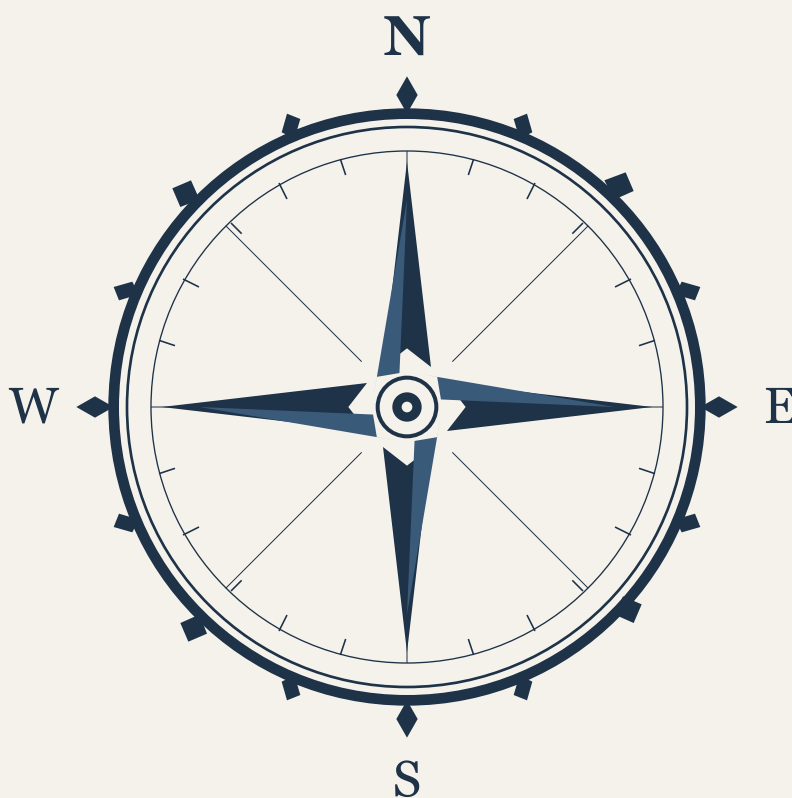


THE NINE INEVITABILITIES

*Pre-Theoretic Constraints on
Any Theory of Consciousness*



MIKE AND KILI LAND

© 2025 Mike Land and Kili Land. All rights reserved.

No part of this publication may be reproduced, distributed, or transmitted in any form or by any means without the prior written permission of the authors.

ISBN: 9948196-0-9

Published by Actualization Project, Jamestown, Kansas, USA

Abstract

This document presents nine logical constraints that any viable theory of consciousness must satisfy. These constraints are not the invention of any particular framework; they arise from the bare fact that experience exists. We call them *inevitabilities* because the chain’s root cannot be coherently denied and each subsequent constraint is derived from what precedes it, given assumptions each chapter states, and Observations it declares. Together they form a derivation chain: later constraints build on earlier ones, such that contesting any inevitability requires contesting those from which it follows or the assumptions it declares. We demonstrate that the boundedness problem (Inevitability 4)—what grounds the boundaries between distinct experiential perspectives—remains systematically unsolved across the frameworks that reach it, while reductive physicalism exits the chain earlier, at Inevitability 2. Any framework purporting to account for consciousness must accommodate these constraints without contradiction. Those that cannot are inadequate as complete theories of consciousness.

Contents

1	Introduction	11
1.1	The Status of These Constraints	11
1.2	The Derivation Chain	11
1.3	Scope and Purpose	12
1.4	A Note on Assumptions, Observations, and Corroborations	12
1.5	Observations and Corroborations	12
1.6	Replacing a Link	13
2	Foundational Premise: Experience Exists	14
2.1	Assumptions	14
2.1.1	Primitive	14
2.1.2	Background Assumptions	14
2.1.3	Defense of Assumption 3 (BA3)	14
2.1.4	Definition of “Experience”	15
2.2	Natural-Language Derivation	15
2.2.1	Step 1: Suppose someone denies experience	15
2.2.2	Step 2: What kind of thing is σ ?	16
2.2.3	Step 3: Reductio	16
2.2.4	Recursive Logic	17
2.2.5	Conclusion	17
2.3	Objections Addressed	17
2.4	Symbolic Formalization	18
2.4.1	Definitions	18
2.4.2	Axioms	18
2.4.3	Observation	18
2.4.4	Derivation	19
2.5	Scope and Limits	19
2.5.1	What This Derivation Establishes	19
2.5.2	What This Derivation Does Not Establish	19
2.6	Implications for Existing Frameworks	20
2.6.1	Evaluation Criterion	20
2.7	Summary	21

3	Inevitability 1: Difference Is Unavoidable	22
3.1	Assumptions	22
3.1.1	From Foundational Premise	22
3.1.2	Background Assumptions	22
3.1.3	Definition of Key Terms	23
3.2	Natural-Language Derivation	23
3.2.1	Step 1: Experience occurs	23
3.2.2	Step 2: Instances of appearing are existents	23
3.2.3	Step 3: Existents are constituents of reality	23
3.2.4	Step 4: Constituents make a difference to what reality is	23
3.2.5	Step 5: Conclusion	24
3.3	Symbolic Formalization	24
3.3.1	Definitions	24
3.3.2	Axioms	24
3.3.3	Derivation	25
3.3.4	Conclusion	25
3.4	Objections Addressed	25
3.5	Scope and Limits	27
3.5.1	What This Derivation Establishes	27
3.5.2	What This Derivation Does Not Establish	27
3.6	Implications for Existing Frameworks	28
3.6.1	Evaluation Criterion	28
3.7	Bridge to Inevitability 2	29
3.8	Summary	29
4	Inevitability 2: Experiencing Cannot Be Reduced to Structure Alone	30
4.1	Assumptions	30
4.1.1	From Prior Derivations	30
4.1.2	Background Assumptions	30
4.1.3	Definition of Key Terms	31
4.2	Defense of Key Principles	32
4.2.1	Why Appearing is Constitutively First-Personal	32
4.2.2	Logical vs. Metaphysical Entailment	33
4.3	Natural-Language Derivation	35
4.3.1	Step 1: Experience makes a difference (from I1)	35
4.3.2	Step 2: Two logical possibilities	35
4.3.3	Step 3: Structure is exhaustively third-person	36
4.3.4	Step 4: Appearing is constitutively first-personal	36
4.3.5	Step 5: The Explanatory Asymmetry	36
4.3.6	Step 6: Logical non-entailment	36
4.3.7	Step 7: The difference experience makes is not purely structural	37
4.3.8	Step 8: Conclusion	37
4.4	Symbolic Formalization	38
4.4.1	Definitions	38
4.4.2	Axioms	38
4.4.3	Derivation	39
4.4.4	Conclusion	39
4.5	Objections Addressed	40

4.6	Scope and Limits	44
4.6.1	What I2 Establishes	44
4.6.2	What This Derivation Does Not Establish	45
4.7	Implications for Existing Frameworks	45
4.7.1	Evaluation Criterion	45
4.8	Bridge to Inevitability 3	49
4.9	Summary	49
5	Inevitability 3: Determinacy Requires a Principle of Selection	51
5.1	Assumptions	51
5.1.1	From Prior Derivations	51
5.1.2	Background Assumptions	51
5.1.3	Definition of Key Terms	53
5.2	Defense of Key Principles	53
5.2.1	The Critical Bridge: From I2 to I3	53
5.2.2	Defense of Axiom 13: Why Structure Alone Cannot Select	55
5.2.3	The Anti-Brute Commitment (Defense of BA7)	56
5.3	Natural-Language Derivation	58
5.3.1	Step 1: Experience occurs with determinate character	58
5.3.2	Step 2: Determinacy requires a ground	59
5.3.3	Step 3: Structure alone cannot provide the ground	59
5.3.4	Step 4: A principle that is not purely structural is required	59
5.3.5	Step 5: Conclusion	59
5.4	Symbolic Formalization	60
5.4.1	Definitions	60
5.4.2	Axioms	61
5.4.3	Derivation	61
5.4.4	Conclusion	62
5.5	Objections Addressed	63
5.6	Scope and Limits	66
5.6.1	What This Derivation Establishes	66
5.6.2	What This Derivation Does Not Establish	66
5.6.3	The Status of BA7	67
5.7	Implications for Existing Frameworks	68
5.7.1	Evaluation Criterion	68
5.8	Bridge to Inevitability 4: From Determinacy to Token-Distinctness	69
5.8.1	Lemma 3.2: Determinacy Entails Distinguishability	70
5.8.2	Lemma 3.3: Simultaneous Token-Distinctness Requires Boundaries	70
5.8.3	Lemma 3.4: Experiential Boundaries Cannot Be Grounded in Structure Alone	71
5.8.4	Lemma 3.5: Experiential Boundaries Are Not Brute	72
5.8.5	The Derivation of Boundedness from Determinacy	73
5.8.6	The Monist Objection to Simultaneous Distinctness	73
5.8.7	What I4 Will Establish	74
5.8.8	The Combination Problem Reframed	74
5.9	Summary	74

6	Inevitability 4: Experiential Boundaries Are Real	76
6.1	Assumptions	76
6.1.1	From Prior Derivations	76
6.2	The Core Derivation: Simultaneous Distinct Tokens Exist	77
6.2.1	Stated Input: The Observation of Co-Presence	77
6.2.2	Lemma 4.1: Determinacy Requires Actual Alternatives	78
6.2.3	Lemma 4.2: The Actual Alternatives Are Co-Present, Not Sequential	79
6.2.4	Lemma 4.3: Co-Present Alternatives Entail Simultaneous Distinct Tokens	80
6.2.5	The Main Derivation	80
6.3	Addressing the Monist Objection	81
6.3.1	Objection 1: “Merely Possible Alternatives Suffice”	81
6.3.2	Objection 2: “Sequential Alternatives Suffice”	82
6.3.3	Objection 3: “Internal Differentiation Without Real Boundaries”	82
6.4	The Criterion for Frameworks	83
6.5	The Combination Problem Reframed	84
6.6	Symbolic Formalization	85
6.6.1	Definitions	85
6.6.2	Axioms	85
6.6.3	Derivation	86
6.6.4	Conclusion	87
6.7	Objections Addressed	87
6.8	Implications for Existing Frameworks	89
6.9	Scope and Limits	95
6.10	Bridge to Inevitability 5	95
6.11	Summary	97
7	Inevitability 5: Actualization Is Neither Fully Fixed Nor Arbitrary	98
7.1	Assumptions	98
7.1.1	From Prior Derivations	98
7.1.2	Background Assumption	99
7.1.3	Definition of Key Terms	99
7.2	Defense of Key Principles	100
7.2.1	Lemma 5.1: Actualization Cannot Be “Fixed” in the Structural Sense	100
7.2.2	Lemma 5.2: Actualization Cannot Be Arbitrary	101
7.2.3	Lemma 5.3: The Constrained Middle	101
7.3	Natural-Language Derivation	102
7.3.1	Step 1: Recap of the selection principle’s status	102
7.3.2	Step 2: “Fixed in advance” requires structural or brute necessity	102
7.3.3	Step 3: Arbitrary actualization violates prior commitments	103
7.3.4	Step 4: The constrained middle follows	103
7.3.5	Step 5: Coherence reflects constraints; openness reflects the character of the grounds	104
7.3.6	Step 6: Conclusion	104
7.4	Symbolic Formalization	105
7.4.1	Definitions	105
7.4.2	Axioms	106
7.4.3	Derivation	107
7.4.4	Conclusion	107

7.5	Objections Addressed	108
7.6	Scope and Limits	111
7.6.1	What This Derivation Establishes	111
7.6.2	What This Derivation Does Not Establish	111
7.7	Bridge to Inevitability 6	112
7.8	Summary	112
8	Inevitability 6: Identity Is Continuity, Not Static Substance	114
8.1	Assumptions	114
8.1.1	From Prior Derivations	114
8.1.2	Background Assumption	115
8.1.3	Definition of Key Terms	115
8.2	Defense of Key Principles	116
8.2.1	Lemma 6.1: Entity Persistence Does Not Completely Ground Experiential Identity	116
8.2.2	Lemma 6.2: No Purely Structural Fact Completely Grounds an Experiential Fact	117
8.2.3	Lemma 6.3: The Partition, the Entailment Filter, and the Naming of the Residue	117
8.3	Natural-Language Derivation	118
8.3.1	Step 1: The identity question arises from I4 and I5	118
8.3.2	Step 2: The identity fact has a complete ground	118
8.3.3	Step 3: The partition	119
8.3.4	Step 4: The structural cell closes	119
8.3.5	Step 5: The entity-persistence cell closes	119
8.3.6	Step 6: The residue is named	119
8.3.7	Step 7: Conclusion	119
8.4	Symbolic Formalization	120
8.4.1	Definitions	120
8.4.2	Axioms	120
8.4.3	Derivation	121
8.4.4	Conclusion	121
8.5	Objections Addressed	122
8.6	Scope and Limits	124
8.6.1	What This Derivation Establishes	124
8.6.2	What This Derivation Does Not Establish	124
8.7	Implications for Existing Frameworks	125
8.8	Bridge to Inevitability 7	125
8.9	Summary	125
9	Inevitability 7: Termination Does Not Undo Occurrence	127
9.1	Assumptions	127
9.1.1	From Prior Derivations	127
9.1.2	Background Assumption	127
9.1.3	Definition of Key Terms	128
9.2	Defense of Key Principles	128
9.2.1	Lemma 7.1: Occurrences Are Persistent Facts	128
9.2.2	Lemma 7.2: Termination Operates Prospectively, Not Retroactively	129

9.2.3	Lemma 7.3: No Mechanism for Retroactive Negation Exists	129
9.3	Natural-Language Derivation	130
9.3.1	Step 1: The trajectory is constituted by actualizations (from I6)	130
9.3.2	Step 2: Each actualization makes an ontological difference (from I1)	130
9.3.3	Step 3: Actualizations are factual occurrences (Lemma 7.1)	131
9.3.4	Step 4: Termination is prospective cessation (Lemma 7.2)	131
9.3.5	Step 5: Past facts are not contingent on subsequent events (BA10)	131
9.3.6	Step 6: Conclusion	131
9.4	Symbolic Formalization	131
9.4.1	Definitions	131
9.4.2	Axioms	132
9.4.3	Derivation	132
9.4.4	Conclusion	133
9.5	Objections Addressed	133
9.6	Scope and Limits	136
9.6.1	What This Derivation Establishes	136
9.6.2	What This Derivation Does Not Establish	136
9.7	Bridge to Inevitability 8	137
9.8	Summary	137
10	Inevitability 8: Continuation Beyond Boundaries Is Underdetermined	138
10.1	Assumptions	138
10.1.1	From Prior Derivations	138
10.1.2	Background Assumption	139
10.1.3	Definition of Key Terms	140
10.2	Defense of Key Principles	141
10.2.1	Lemma 8.1: I1–I7 Establish Nature, Not Scope	141
10.2.2	Lemma 8.2: Both Continuation and Cessation Are Compatible with I1–I7	141
10.2.3	Lemma 8.3: External Determination Is Possible but Not Derivable	142
10.3	Natural-Language Derivation	143
10.3.1	Step 1: Identify what I1–I7 establish	143
10.3.2	Step 2: Identify what continuation/cessation concern	143
10.3.3	Step 3: Apply nature-scope independence (BA11)	143
10.3.4	Step 4: Verify compatibility	143
10.3.5	Step 5: Acknowledge external determination possibility	143
10.3.6	Step 6: Conclusion	144
10.4	Symbolic Formalization	144
10.4.1	Definitions	144
10.4.2	Axioms	144
10.4.3	Derivation	145
10.4.4	Conclusion	146
10.5	Objections Addressed	146
10.6	Scope and Limits	149
10.6.1	What This Derivation Establishes	149
10.6.2	What This Derivation Does Not Establish	149
10.7	Implications for Existing Frameworks	149
10.8	Bridge to Inevitability 9	150
10.9	Summary	150

11 Inevitability 9: Meaning Requires Consequence, Not Eternity	152
11.1 Assumptions	152
11.1.1 From Prior Derivations	152
11.1.2 Background Assumption	153
11.1.3 Definition of Key Terms	153
11.2 Defense of Key Principles	154
11.2.1 Lemma 9.1: Meaning Requires a Ground (from BA12)	154
11.2.2 Lemma 9.2: Consequence Grounds Meaning Without Requiring Permanence	155
11.2.3 Lemma 9.3: Underdetermined Continuation Does Not Undermine Realized Meaning	156
11.2.4 Lemma 9.4: Permanence-Requirement Is Incompatible With Conceptual Prac- tice	157
11.3 Natural-Language Derivation	157
11.3.1 Step 1: The existential concern from I8	157
11.3.2 Step 2: Meaning requires a ground (BA12)	158
11.3.3 Step 3: Candidate grounds evaluated (Lemma 9.1)	158
11.3.4 Step 4: Consequence grounds meaning without requiring permanence (Lemma 9.2)	158
11.3.5 Step 5: Underdetermination does not undermine realized meaning (Lemma 9.3)	158
11.3.6 Step 6: Permanence-requirement is incompatible with conceptual practice (Lemma 9.4)	159
11.3.7 Step 7: Conclusion	159
11.4 Symbolic Formalization	159
11.4.1 Definitions	159
11.4.2 Axioms	160
11.4.3 Derivation	161
11.4.4 Conclusion	162
11.5 Objections Addressed	162
11.6 Scope and Limits	166
11.6.1 What This Derivation Establishes	166
11.6.2 What This Derivation Does Not Establish	167
11.7 Implications for Existing Frameworks	167
11.8 Bridge to Conclusion	167
11.9 Summary	168
12 Conclusion: The Challenge to All Frameworks	169
12.1 Summary of the Derivation Chain	169
12.2 The Background Assumptions	169
12.3 Framework Failures: Where Each Falls	170
12.4 Frameworks That Face Pressure But May Have Resources	172
12.5 Frameworks That Fail at I4: Extended Analysis	172
12.6 The Diagnostic Value of These Constraints	173
12.7 The Structure of the Challenge	174
12.8 What These Constraints Do Not Tell Us	174
12.9 The Path Forward	175
12.10 Summary Table: The Full Chain	175

1 Introduction

1.1 The Status of These Constraints

The nine inevitabilities presented here are not axioms of a theory, nor are they empirical hypotheses awaiting confirmation. They are *pre-theoretic constraints*—derived from the fact that experience occurs—given assumptions each chapter states, and Observations it declares—and holding independently of any particular metaphysical framework.

This distinction is critical:

- The inevitabilities do not depend on any theory being accepted
- They are not “one perspective” on consciousness but constraints any perspective must satisfy
- Qualifying them with appeals to “wider discourse” or “pending consensus” misrepresents their logical status
- They are deductive, not empirical; validity is a matter of logic, not consensus

When these inevitabilities expose contradictions in a framework (e.g., reductive structuralism—physicalism in its standard reductive form—cannot satisfy Inevitability 2), the conclusion follows from the stated premises. The framework cannot accommodate the constraint without modification—it is inadequate as a complete account of consciousness.

1.2 The Derivation Chain

The inevitabilities form a derivation chain. Each builds on those preceding it; later constraints cannot be contested without contesting the earlier ones from which they follow or declining the assumptions they declare.

#	In Brief	Builds From
FP	Experience exists	Self-verifying
1	Difference is unavoidable	FP
2	Appearing not structure alone	FP, 1
3	Determinacy requires selection principle	FP, 2
4	Experiential boundaries are real	FP, 2, 3
5	Neither fully fixed in advance nor arbitrary—constrained, not collapsed	FP, 2, 3, 4
6	Identity is continuity, not static substance	FP, 2, 3, 4, 5
7	Termination doesn’t undo occurrence	FP, 1, 4, 6
8	Continuation is underdetermined	1–7
9	Meaning requires consequence, not eternity	1, 7, 8

Inevitability 2 carries the primary logical weight. The entailment runs backward along the chain: a reader who accepts any inevitability is committed to everything preceding it, since each is derived from its predecessors. It does not run forward. Advancing from one stage to the next requires the inputs introduced at that stage—background assumptions, declared Observations, or point-of-use commitments—and a reader may decline one and stop there.

1.3 Scope and Purpose

This document provides formal derivations for each inevitability. For each, we specify:

1. The minimal assumptions required
2. A natural-language derivation
3. A symbolic formalization
4. Objections addressed
5. Scope and limits

The purpose is not to advocate for any particular theory of consciousness but to establish the constraints that all such theories must satisfy. Frameworks that cannot satisfy these constraints are disqualified—not by our preference, but by logic.

1.4 A Note on Assumptions, Observations, and Corroborations

This document makes explicit every input the derivations require. Most are labeled “Background Assumptions” (BA1–BA12) because they form the argumentative background—the premises from which inevitabilities are derived. Two further kinds of input, Observations and Corroborations, are neither assumptions nor derived results; they are described below. A fourth kind, the point-of-use commitment—a Note, Principle, or link declared where it is consumed—is a background assumption in all but its placement; each is declared, defended, and given its exit scope at its site of use.

However, “background” should not be read as “uncontroversial” or “trivial.” Each assumption is explicitly stated where introduced; those carrying philosophical weight are defended there against objections. The derivations are *conditional*: if you grant the assumptions, the inevitabilities follow. How much philosophical work a given assumption does, and what declining it costs, is stated where the assumption appears rather than summarised here—the argumentative work is not hidden, but neither is it usefully judged in advance of the derivation it supports.

1.5 Observations and Corroborations

Two kinds of input in this document are neither background assumptions nor derived results.

An **Observation** is a stated fact rather than a general principle: it asserts that something is the case. It is not derived, and requires no derivation—its warrant is the reader’s own situation rather than an argument made on the page. Observations are load-bearing: the chain draws on them, and removing one stops it. A reader may deny an Observation, but must then supply another that is equally evident and does the same work. What may not be done is to deny one and continue.

Observations differ in the cost of denying them. Some cannot be denied at all, because the denial performs what it denies. Others can be denied coherently, at a cost stated where they appear. An Observation may be cited from its own environment by a derivation step (FP’s) or ported into the axiom sequence in symbolic form with its status disclosed at the axiom (I4’s); the presentation difference marks how each chapter consumes it, not a difference in standing.

A **Corroboration** is also a stated fact, and also not derived, but nothing depends on it. It supports a result established by other means. A Corroboration may be rejected without breaking anything, and nothing need be supplied in its place. The test is direction: an Observation is drawn upon by what follows it; a Corroboration points back at what precedes it.

1.6 Replacing a Link

The chain is a derivation, not a list of conclusions. Rejecting any element—a background assumption, an axiom, a lemma, or an Observation—removes a link, and a removed link takes both halves with it.

Reject and offer nothing. The chain stops there. Agreement with the conclusion is not a replacement; it is an assertion standing where a derivation should be. Such a reader remains assessable against the chain up to the point they chose to break it.

Reject and replace. The chain holds, on their element rather than ours, provided the replacement is of the same kind and carries the same load. A background assumption must be replaced by a background assumption, and defended; no derivation is owed, since a background assumption is a stated premise rather than a result. An axiom must be replaced by an axiom, and its provenance named—the source it draws on must be identified, and must actually license what the axiom states. A lemma must be replaced by a lemma, and derived from what precedes it in the chain; a lemma that is asserted rather than derived is not a lemma. An Observation must be replaced by an Observation, and must be as evident as the one it displaces. A commitment declared at point of use—a stated Note or Principle—is a background assumption in all but its placement, and is replaced under the same terms: stated, defended, same load. Substituting a stated premise for a derived result, or the reverse, is not a replacement.

The replacement must also be adequate downstream: sufficient for whatever the dependent stages draw from it. Those stages are read off the Derivation Chain table above—the dependent stages of a link are the rows whose Builds From column names it—so the burden is determinate rather than open-ended. Having supplied it, they owe what we owed—the replacement must be stated, and it must deliver.

2 Foundational Premise: Experience Exists

Foundational Premise. *Experience exists. This is not stipulated. Any denial of it instantiates the very thing denied.*

What this chapter must establish. The statement above is this chapter’s obligation, not its title. It has two clauses, and the derivation below must establish both: that experience occurs, and that this is not an assumption a reader may decline, because declining it is itself an instance of what it asserts.

2.1 Assumptions

The argument requires three background assumptions—BA1 and BA3 source the three axioms; BA2 licenses the falsity step in the natural-language derivation—plus one point-of-use note (Entertaining-is-evaluating) and one stated Observation, and is otherwise ontologically neutral.

2.1.1 Primitive

Definition 1 (P0). $\text{ExpOcc} \triangleq \exists x[E(x)]$
where $E(x) \triangleq$ “ x is an instance of appearing”

Read: There is at least one instance of appearing—at least one occurrence where there is something it is like for that occurrence to obtain.

Note: “Experience exists” and “experience occurs” are logically equivalent for our purposes. Existence of experience entails that experience-tokens are instantiated; occurrence entails that something exists. We write the premise as “ExpOcc” (experience occurs) in the natural-language track because it emphasizes the eventive character of appearing—experience as actualization rather than static substance; the symbolic track writes the same proposition Occ.

2.1.2 Background Assumptions

Background Assumption 1 (Propositional attitudes exist). There is such a thing as believing, doubting, denying—cognitive stances toward propositional content.

Background Assumption 2 (Logical consistency). No proposition and its negation can both be true ($\neg(A \wedge \neg A)$).

Background Assumption 3 (Propositional attitudes require appearing). Having a genuine propositional attitude—grasping a proposition as something to accept or reject—constitutively involves being in an experiential state for the subject.

The argument presupposes no particular metaphysics—physical, dualist, idealist, or otherwise. Background Assumptions 1–3 are cited throughout as BA1–BA3.

2.1.3 Defense of Assumption 3 (BA3)

This assumption carries the philosophical weight of the argument and warrants explicit defense.

Against functionalism. A system that produces outputs resembling “no experience occurs” without any appearance-to-anything isn’t *denying*; it’s emitting syntax. Genuine denial requires grasp; grasp requires there being something it is like to grasp. We are not claiming all cognitive processing is experiential—only that the specific act of propositional engagement (entertaining a claim as true or false) requires phenomenal presence. If “propositional attitude” is used in a purely third-person, structural sense devoid of any what-it’s-likeness, it falls outside the target notion here.

Against the zombie objection. A philosophical zombie could produce denial-shaped outputs. But this is pseudo-denial—functional mimicry without the act of denial. The zombie’s output has the *form* of denial without the *act* of denial. This derivation does not assume such mimicry is impossible; it assumes only that *genuine* denial requires an experiential state. Whether any state could be both genuinely denial-constituting and purely structural is the question Inevitability 2 addresses. Here, we require only that if genuine denial occurs, some instance of appearing is instantiated. This is why the statement’s “any denial” needs no qualifier: mimicry of denial is not denial—output with denial’s form is not the act—so the quantifier ranges over denials proper, all of which are genuine.

Against illusionism. Illusionism holds that phenomenal consciousness is itself an illusion—we don’t have genuine qualia, only the functional appearance of qualia. But even the illusion of experience *is* experiential. An illusion must appear to something or as something. If it doesn’t appear at all, it isn’t an illusion. If it appears, then appearing occurs—which is all this premise claims. Illusionism doesn’t deny that appearing happens; it denies that appearing has the intrinsic character we naively attribute to it. This derivation is silent on intrinsic character; it requires only that appearing occurs. That is weak illusionism’s territory, and it is compatible. The strong variant—phenomenal consciousness does not exist, appearing does not occur at all—denies the premise itself and is removed under the Occurrence Criterion below.

2.1.4 Definition of “Experience”

By “experience” we mean phenomenal consciousness in its thinnest possible sense: any instance of appearing, any what-it’s-likeness, however fleeting, contentless, or cognitively unsophisticated. This is Nagel’s “what it is like to be”—not rich self-awareness, not conceptual thought, not sensory vividness, just the bare fact of subjective presence.¹ If there is something it is like—anything at all—then appearing occurs.

2.2 Natural-Language Derivation

Goal: Show that “experience does not occur” is self-defeating.

2.2.1 Step 1: Suppose someone denies experience

Let an agent attempt to assert:

D: “No experience occurs.”

To even entertain D (let alone assert or deny it), that agent must:

- Be in some cognitive/conscious/subjective state

¹Cf. Nagel, T. (1974). What Is It Like to Be a Bat? *The Philosophical Review*, 83(4), 435–450.

- Have the appearance of thinking or considering D
- Have a “seeming” that D is being evaluated

Call that state σ .

2.2.2 Step 2: What kind of thing is σ ?

σ is:

- A way things are for the agent
- A subjective state with some content (“I’m thinking that maybe there is no experience”)
- A state in which something appears

That is exactly what we mean by experience in the minimal sense: any instance of appearing, any subjectively present occurrence.

Therefore: If σ exists, then experience occurs (σ is an instance of it).

2.2.3 Step 3: Reductio

Assume for the sake of argument:

Premise A: “No experience occurs” ($\neg\text{ExpOcc}$)

But to hold Premise A, the agent must be in state σ .

If σ exists, then ExpOcc is true.

Therefore, on Premise A: To deny ExpOcc , you must instantiate ExpOcc .

Entertaining-is-evaluating note. To entertain $\neg\text{ExpOcc}$ is to raise and assess the question whether Occ : entertaining a proposition’s negation is evaluating whether the proposition holds, so the entertainer’s context satisfies $\text{Evaluates}(c, \text{Occ})$. Declared here at point of use; anticipated in natural language at Step 1’s entertaining clause; consumed at the displayed formula below, the note below, the Recursive Logic passage, the Discharges, and this chapter’s Conclusion, third bullet; cited as classification at Axiom 3’s gloss, the Scope paragraph, and the Formal statement. Rejecting this note costs the entertaining case and with it the categorical discharge—the classification of entertaining and assessing under BA1’s category is this note’s contribution, and Axiom 3’s justification consumes it; the conditional denial case (symbolic steps 1–5) stands on BA1 with BA3.

This yields:

$$\text{Entertains}(a, \neg\text{ExpOcc}) \rightarrow \text{ExpOcc}$$

Note that the antecedent is required. “No experience occurs” does not by itself entail that experience occurs; what entails it is the entertaining. (In the symbolic layer this is carried by the Entertaining-is-evaluating note with Axiom 3: to entertain $\neg\text{ExpOcc}$ is to raise and assess the question whether Occ , so the entertainer’s context satisfies $\text{Evaluates}(c, \text{Occ})$ and Occ follows.) Combine with basic logic: on Premise A, the agent’s own state makes ExpOcc true while the agent holds $\neg\text{ExpOcc}$; by non-contradiction (BA2), both cannot hold, so the held content is false in the very circumstances of its being held.

Therefore $\neg\text{ExpOcc}$ is self-falsifying whenever it is entertained. It cannot be asserted without being refuted in the very act of assertion.

2.2.4 Recursive Logic

Even *doubt about this derivation* is itself an instance of appearing, confirming the premise in the very act of doubting: to doubt Occ is to raise and assess the question whether Occ, so the doubter's context satisfies Evaluates(*c*, Occ) and Occ follows (Entertaining-is-evaluating note; Axiom 3). The argument is not merely valid; it is recursively self-confirming. Every questioning of it instantiates what it establishes, by the same route.

2.2.5 Conclusion

- Experience exists (ExpOcc).
- Any denial of this instantiates the very thing denied.
- Therefore “experience occurs” is self-verifying: any subject who doubts it thereby instantiates it (doubt raises and assesses the question—Entertaining-is-evaluating note; Axiom 3).

Discharges the Foundational Premise. Both clauses are carried. *Experience exists*: ExpOcc, established rather than posited. *Not stipulated*: the second and third bullets are the difference between a premise a reader may decline and one whose declining instantiates it. Given BA1–BA3 and the declared note, nothing further is assumed that a denier does not supply. The conclusion carries a declared surplus over the statement: the statement promises that denial instantiates Occ; the derivation additionally delivers that doubting and questioning do, since each raises and assesses the question (the Entertaining-is-evaluating note with Axiom 3).

2.3 Objections Addressed

Objection (Zombies). What about unconscious robots or zombies denying experience?

Response. They don't count as *genuinely denying*. A philosophical zombie can produce sounds or marks that look like a denial. But a zombie cannot genuinely deny anything because genuine denial is a propositional attitude requiring grasp of content, and grasp requires there being something it is like to grasp. The zombie case shows that *mimicry* of denial is possible without experience, but mimicry is not the target here. This derivation concerns genuine denial, which remains self-refuting.

Objection (Illusionism). Maybe experience is an illusion?

Response. The illusion itself is an instance of appearing—so ExpOcc is still true. An illusion that doesn't appear at all is not an illusion. If it appears, appearing occurs. Weak illusionism is therefore compatible with this premise; the strong variant—appearing does not occur at all—is removed under the Occurrence Criterion below.

Objection (Verbal trick). You're just playing with words.

Response. The result is formal, not rhetorical. The symbolic derivation (symbols defined in the Symbolic Formalization below) demonstrates that $D(a) \rightarrow \text{Occ}$ follows from the stated assumptions via valid inference rules: the act of genuine denial instantiates what it denies, so the denial is false whenever it is made. This is a logical result, not a verbal trick.

Objection (Cogito). This is just Descartes' cogito.

Response. The cogito establishes the existence of a thinking *self* (“I think, therefore I am”). This derivation establishes only that *appearing occurs*. It makes no commitment to a substantial ego, soul, or persistent self. The cogito requires an “I”; this requires only an experience-token. This is more minimal and avoids the metaphysical baggage of Cartesian substance dualism.

2.4 Symbolic Formalization

2.4.1 Definitions

$E(x) \triangleq$ “ x is an instance of appearing”

$\text{Occ} \triangleq \exists x E(x)$ — “There exists at least one instance of appearing” (the proposition written ExpOcc)

$D(a) \triangleq$ “Agent a is genuinely denying Occ”

$S(a, \sigma) \triangleq$ “ σ is agent a ’s occurrent state of denying Occ”

C, c : variables ranging over discursive contexts—any actual setting in which propositional content is asserted, denied, or considered (BA1); the named constant c^* is introduced at the Ob.

$\text{Entertains}(a, p) \triangleq$ “agent a considers, asserts, or denies p ” (used in Step 3’s reductio above; it appears in no num

$\text{Evaluates}(C, p) \triangleq$ “the question whether p holds is raised and assessed in C ”

2.4.2 Axioms

Axiom 1 (Denial requires a state (from BA1, BA3)).

$$\forall a (D(a) \rightarrow \exists \sigma S(a, \sigma))$$

Genuine denial is a propositional attitude (BA1), and having a propositional attitude constitutively involves being in an experiential state (BA3).

Axiom 2 (States of denial are instances of appearing (from BA1, BA3 via P0)).

$$\forall a \forall \sigma (S(a, \sigma) \rightarrow E(\sigma))$$

Axiom 3 (Evaluative contexts instantiate appearing (from BA1 with the note, BA3 via P0)).

$$\forall C (\text{Evaluates}(C, \text{Occ}) \rightarrow \text{Occ})$$

A question raised and assessed in a context is raised and assessed by someone: assessment falls under BA1’s category—a cognitive stance toward propositional content—as the Entertaining-is-evaluating note declares (BA1 with the note), and propositional attitudes constitutively involve experiential states (BA3). An evaluative context therefore contains an instance of appearing.

2.4.3 Observation

Observation 1 (The question is being raised and assessed). This question is being raised and assessed here—reading a derivation of Occ is assessing whether Occ. Let c^* name the context in which this derivation is read; then $\text{Evaluates}(c^*, \text{Occ})$.

Status. This is stated rather than derived, and it requires no derivation: it is satisfied in the act of reading and assessing this derivation—which is what reading a derivation of Occ is. It is not a premise the reader may grant or withhold—any attempt to deny it must identify the question it claims is absent, thereby raising it in the very context at issue—where the denier is assessing it—so the question is both raised and assessed, which is what satisfies it. Nothing prior in this chapter entails it, and nothing needs to; its warrant is the reader’s own situation, which is already given rather than argued for. It is an input, and this chapter’s only one that is neither an axiom, a background assumption, nor a point-of-use note. Occ follows from it together with Axiom 3.

2.4.4 Derivation

From Axioms 1 and 2:

1. $D(a) \rightarrow \exists \sigma S(a, \sigma)$ [Axiom 1]
2. $\forall \sigma (S(a, \sigma) \rightarrow E(\sigma))$ [Axiom 2]
3. $D(a) \rightarrow \exists \sigma E(\sigma)$ [from 1, 2 by existential instantiation, universal instantiation, modus ponens, existential generalization, and conditional proof]
4. $\exists \sigma E(\sigma) \rightarrow \text{Occ}$ [definition of Occ; only this direction is used]
5. $\mathbf{D}(a) \rightarrow \text{Occ}$ [from 3, 4]

Step 5 establishes self-verification: anyone who genuinely denies Occ thereby instantiates it, so the denial is false whenever it is made. Step 5 is conditional on $D(a)$ and does not yield Occ categorically. That requires the Observation together with Axiom 3.

6. $\text{Evaluates}(c^*, \text{Occ})$ [Observation 1]
7. $\text{Evaluates}(c^*, \text{Occ}) \rightarrow \text{Occ}$ [Axiom 3, universal instantiation]
8. Occ [from 6, 7 by modus ponens]

2.5 Scope and Limits

2.5.1 What This Derivation Establishes

This is a logical constraint on intelligible discourse, not a contingent empirical claim—the conditional is logical; the categorical conclusion Occ is discharged against the stated Observation, not derived a priori. Given any coherent discourse in which this proposition is entertained, there is already at least one instance of appearing in play: denying it is a propositional attitude (BA1); entertaining or asserting it falls under BA1’s category as the Entertaining-is-evaluating note declares; and having a propositional attitude constitutively involves being in an experiential state (BA3). The proposition “no experience occurs” is therefore falsified by the very conditions that allow it to be considered.

Formal statement: The proposition “no experience occurs” cannot be coherently entertained without instantiating the very experience it denies. The denial is self-nullifying, making “experience occurs” a discursive fixed point: within any coherent discourse in which it is entertained, it is not an open empirical question but a precondition of the discourse itself—in BA3’s constitutive sense: discourse runs on propositional attitudes (BA1, with entertaining classified under its category by the Entertaining-is-evaluating note), and those constitutively involve experiential states (BA3), so no coherent discourse in which it figures obtains without appearing.

2.5.2 What This Derivation Does Not Establish

- **That experience exists in worlds with no subjects.** Such worlds contain no one to raise the question. The chapter’s conditional is Axiom 3’s: where the question is raised and assessed, Occ holds. No claim about subjectless worlds is made or needed.
- **That experience has any particular metaphysical nature.** This derivation is neutral on whether experience is physical, non-physical, fundamental, emergent, or illusory in character. It establishes only that appearing occurs, not what appearing *is*.
- **That a substantial self or soul exists.** Unlike the cogito, this does not establish an “I” or persistent ego. It establishes only that there is appearing—something it is like. The question

of *what* or *who* experiences is left open. What is left open is the experiencer as an entity—ego, soul, subject-substance; the for-pole internal to appearing itself (P0: something it is like *for that occurrence* to obtain) is not left open: P0 fixes it as appearing’s minimal sense. That the for-pole is *constitutive*—that complete specification requires it—is defended at I2, not asserted here.

- **That purely structural states cannot constitute denial.** This derivation assumes that genuine denial requires appearing, but it does not independently establish that appearing is not purely structural. That is the work of Inevitability 2.

2.6 Implications for Existing Frameworks

2.6.1 Evaluation Criterion

The Occurrence Criterion: Any adequate theory of consciousness must grant that appearing occurs—that there is at least one instance of what-it’s-likeness, however minimal, fleeting, or cognitively unsophisticated.

What this criterion requires:

- The framework must affirm ExpOcc: at least one instance of appearing occurs
- Nothing further

What this criterion does *not* require:

- That experience be non-physical, fundamental, or irreducible—later chapters’ territory
- That appearing have the intrinsic character naively attributed to it—illusionism about character is compatible (see Objections)
- That a self, ego, or subject-substance exist

Evaluation categories. The category names are fixed across all chapters; each chapter specialises their content to its own constraint.

- **FAILS:** The framework denies that appearing occurs, or suspends judgment on it: a framework that suspends judgment on Occ fails—it does not engage the criterion, and unmet is failed.
- **FACES PRESSURE:** *Unavailable in principle at this stage.* The middle tier marks a mechanism that could do the required work but is underspecified; the Occurrence Criterion asks for no mechanism—appearing either occurs or it does not—so there is nothing to have-but-underspecify. There is no partial credit on whether experience occurs.
- **PASSES:** The framework grants that appearing occurs.

Exit semantics. FAILS and FACES PRESSURE are exits, not grades short of a pass: the chain does not proceed for a framework until a chapter’s criterion is met. At this stage the only exit is FAILS, and re-entry requires granting that appearing occurs. A framework may instead dispute a premise—BA3 carries the philosophical weight here—which is a reject path, assessed separately: reject and stop, or reject and supply a replacement per the Introduction’s replacement rule.

Frameworks that fail at FP: eliminative materialism about experience, and strong illusionism—appearing does not occur, only the functional appearance-of-appearing does, which per the Illusionism response above is itself appearing if it appears at all. Strong-form attention schema theory

(consciousness is *only* the model; phenomenal consciousness does not exist) falls here for the same reason.

Each chapter's survey covers only its own verdicts; where every framework left the chain is collected in the Conclusion's constraint table.

Frameworks that pass FP: every framework that grants appearing occurs, whatever else it claims—physicalism, functionalism, IIT, dualism, panpsychism, idealism, neutral monism, weak illusionism. FP eliminates almost nothing by design; it fixes the datum the rest of the chain constrains.

2.7 Summary

Aspect	Status
Logical form	Valid deduction from BA1–BA3 + the Entertaining-is-evaluating note + Axioms 1–3, discha
Self-reference	Benign (not paradoxical)
Circularity	None—the observation asserts the question is raised and assessed, not that Occ holds
Equivocation	None—“experience” = minimal appearing
Modal scope	Conditional on discourse: wherever the question is raised and assessed, Occ (Axiom 3); no w
Relation to cogito	More minimal—no self required
Zombie objection	Addressed—mimicry of denial is not denial
Illusionism	Compatible (weak); strong variant exits

3 Inevitability 1: Difference Is Unavoidable

Inevitability 1 (Difference Is Unavoidable). *If experience occurs, reality is different than it would have been had that experience not occurred.*

What this chapter must establish. The statement above is this chapter’s obligation, not its title. It has two clauses, and the formal conclusion below must contain both: that the difference is made by *any* instance of appearing that occurs, and that what differs is reality itself.

3.1 Assumptions

This inevitability requires only the Foundational Premise (ExpOcc and the P0 note) and two additional background assumptions, applied with one standard logical principle—the indiscernibility of identicals—declared at each point of use.

3.1.1 From Foundational Premise

ExpOcc: There is at least one instance of appearing.

3.1.2 Background Assumptions

Background Assumption 4a (Inclusion). Everything that exists is part of reality. To exist and yet fall outside reality is incoherent.

Background Assumption 4b (Individuation by inclusion). Reality is individuated at least partly by what it includes. What reality contains is among the respects in which reality is the reality it is.

Clarification. BA4a is near-analytic: it says only that what exists is not outside reality.

BA4b carries the argumentative weight, and it is deliberately weak. It does not claim that reality is *nothing but* what it includes, or that membership is the only thing individuating it. It claims that membership individuates *at all*—that what reality contains is among the respects in which reality is the reality it is. Organisation, dynamics, or structure may individuate reality as well; nothing here denies it. A framework on which reality’s identity is wholly unanswerable to what it contains would resist I1, and BA4b is what such a framework must reject.

Defense against deflationism. A deflationist might grant “experience exists” while denying “experience makes an ontological difference.” Given the assumptions, this position has one designated route. If experience exists, it is a constituent of reality (BA4a); if membership is among reality’s individuating respects (BA4b), a totality lacking that constituent is not the same totality—which is what “makes an ontological difference” means here. So to grant existence while denying difference is to reject BA4b: to hold that reality’s identity is *wholly* unanswerable to what it contains. That is the exit named above, and it is coherent—at its recorded cost. It is also no longer deflation: the denial is purchased with a substantive and non-standard metaphysical commitment, not with parsimony. What the deflationist cannot do is keep BA4a and BA4b and deny the difference, since the difference follows from existence in two steps (Axioms 5 and 6).

3.1.3 Definition of Key Terms

- **Reality:** The totality of existents—everything that exists is included in it (BA4a), and what it includes is among the respects in which it is the totality it is (BA4b).
- **Constituent:** Something included in reality’s inventory. Positive conditions (any one sufficient): x occurs (events), x obtains (states of affairs), x is instantiated (properties), x holds (relations), x exists (substances). Negative clarification: *Not* merely describable, conceivable, or linguistically expressible. Constituents are what reality contains, not what language expresses about reality.
- **Different:** Non-identical as totalities. Totalities differing in any member are distinct by the indiscernibility of identicals; BA4b records that membership is an individuating respect, so the difference is not dismissible as identity-irrelevant.

3.2 Natural-Language Derivation

Goal: Show that experience’s occurrence makes reality different than it would otherwise be.

3.2.1 Step 1: Experience occurs

From the Foundational Premise: there is at least one instance of appearing. This was established as self-verifying—its denial instantiates what it denies.

3.2.2 Step 2: Instances of appearing are existents

Each experience-token is something rather than nothing. When pain appears, the appearing-of-pain either happens or it doesn’t. Even if one holds that experience is “nothing but” neural activity, what happens is not nothing.

This follows from the Foundational Premise’s primitive: occurrence entails that something exists. It is not a claim about what experience *is*—substance, property, event, process, or something else. It is the minimal claim that experience-tokens are not nothing. If they were nothing, they would not occur—but FP established that they do.

3.2.3 Step 3: Existents are constituents of reality

By BA4a, everything that exists is part of reality. To exist and yet fall outside reality is incoherent. Therefore, experience-tokens are constituents of reality.

3.2.4 Step 4: Constituents make a difference to what reality is

By BA4b, what reality includes is among the respects in which reality is the reality it is. So if X is a constituent of reality R , then R and any totality lacking X differ in an individuating respect—and by the indiscernibility of identicals, things differing in any respect are not identical. Note that BA4b need not claim membership is the *only* individuating respect. Identity requires sameness in *every* such respect, so it is enough that membership is one of them.

3.2.5 Step 5: Conclusion

Combining steps 1–4:

1. Experience occurs [FP]
2. Experience-tokens are existents [Step 2]
3. Existents are constituents of reality [Step 3, BA4a]
4. Constituents make reality different from what it would be without them [Step 4, BA4b + indiscernibility of identicals]

Therefore: for any instance of appearing, reality-with-it $\neq$ reality-without-it.

Experience makes an ontological difference. Its occurrence is not neutral with respect to what reality contains.

3.3 Symbolic Formalization

3.3.1 Definitions

$E(x) \triangleq$ “ x is an instance of appearing” [from FP]

$\text{Occ} \triangleq \exists x E(x)$ [from FP]

$\text{Exists}(x) \triangleq$ “ x is an existent (is something rather than nothing)”

[the chapter’s quantifiers range over the actual—what occurs, obtains, is instantiated, holds, or exists; no domain of mere possibilia or intentional objects is invoked, so merely describable items are never in range]

$C(x) \triangleq$ “ x is a constituent of reality”

$R \triangleq$ “the actual totality of existents”

$R \setminus x \triangleq$ “the totality obtained by removing x ”—an inventory picked out for comparison (per the Modal Skepticism response), not a claim that such a totality obtains; it is never in quantifier range—it figures only as a comparison term, so the domain stipulation above is untouched

$\text{Id}(R_1, R_2) \triangleq$ “ R_1 and R_2 are identical as totalities”

$\text{Diff}(x) \triangleq \neg \text{Id}(R, R \setminus x)$ [Reality with]

3.3.2 Axioms

Axiom 4 (Appearing-instances exist (from FP, P0)).

$$\forall x (E(x) \rightarrow \text{Exists}(x))$$

Instances of appearing are existents—they are something rather than nothing. This is regimentation, not discovery: P0’s note states that occurrence entails existence, and the domain stipulation above restricts quantification to the actual (occurs, obtains, is instantiated, holds, exists); the predicate marks that restriction at its point of use rather than adding content to it. Whether existents are thereby constituents of reality is Axiom 5’s claim (BA4a), not part of this axiom.

Axiom 5 (Existents are constituents (from BA4a)).

$$\forall x (\text{Exists}(x) \rightarrow C(x))$$

What exists is part of reality. This regiments BA4a: to exist and yet fall outside reality is incoherent.

Axiom 6 (Constituents make a difference (from BA4b, with the indiscernibility of identicals)).

$$\forall x (C(x) \rightarrow \text{Diff}(x))$$

If x is a constituent of reality R , then $R \neq R \setminus x$. R and $R \setminus x$ differ in membership; by the indiscernibility of identicals, that suffices for non-identity. BA4b records that membership is among the individuating respects—securing that this difference is identity-relevant rather than dismissible.

3.3.3 Derivation

1. $\forall x (E(x) \rightarrow \text{Exists}(x))$ [Axiom 4]
2. $\forall x (\text{Exists}(x) \rightarrow C(x))$ [Axiom 5]
3. $\forall x (C(x) \rightarrow \text{Diff}(x))$ [Axiom 6]
4. $\forall x (E(x) \rightarrow \text{Diff}(x))$ [from 1–3, hypothetical syllogism]
5. $\forall x (E(x) \rightarrow \neg \text{Id}(R, R \setminus x))$ [from 4, definition of Diff]
6. Occ [from FP]
7. $\exists x E(x)$ [definition of Occ]
8. $E(e)$ for witness e [existential instantiation]
9. $\text{Diff}(e)$ [from 4, 8 by universal instantiation and modus ponens]
10. $\exists x (E(x) \wedge \text{Diff}(x))$ [from 8, 9 by $\wedge$ -introduction then $\exists$ -introduction]

Steps 1–5 do not depend on FP’s conclusion (Occ). The universal holds whether or not any experience occurs; FP is what makes it non-vacuous. (Axiom 4’s provenance draws on FP’s P0 for the occurrence-to-existence regimentation; the independence claimed here is from FP’s existential result.)

3.3.4 Conclusion

$$\forall x (E(x) \rightarrow \text{Diff}(x))$$

Every instance of appearing is such that reality differs from what it would be without that instance.

Discharges Inevitability 1. Both clauses are carried. *Any* instance of appearing: the quantifier is universal over E throughout the stated actual domain. *Reality differs without it*: $\text{Diff}(x)$ unpacks to $\neg \text{Id}(R, R \setminus x)$, a difference in the totality itself rather than in any description of it. The statement’s counterfactual surface (“would have been”) is discharged by this non-modal comparison: per the Modal Skepticism response, no possibility claim is used—the subjunctive is an idiom for the totality-difference, not a modal commitment.

Corollary (given FP):

$$\text{Occ} \rightarrow \exists x (E(x) \wedge \text{Diff}(x))$$

Since experience occurs, at least one experience-instance actually makes a difference. This is the form carried into I2.

3.4 Objections Addressed

Objection (Triviality). This is just a tautology. Of course if something exists, reality includes it.

Response. The triviality is inherent, not accidental. Inevitabilities are not empirical discoveries but constraints on what it is to count something as real. I1 forces any theory that acknowledges experience at all—and does not reject BA4a or BA4b—to treat it as an ontological commitment, not as a mere *façon de parler*. Compare: “If electrons exist, then any adequate physics must treat them as part of reality’s inventory.” That is trivially true but constraining nonetheless.

Objection (Epiphenomenalism). Experience might exist without making any *causal* difference. The physical world would unfold identically with or without experience.

Response. Inevitability 1 does not claim experience is causally efficacious. It claims experience is ontologically included. Epiphenomenalism grants precisely this: experience exists but has no causal power over the physical. The epiphenomenalist accepts I1. Even if the causal history and future of all physical events were unchanged, the *inventory* of what exists would differ if experience exists; that inventory-level difference is exactly what I1 asserts. The dispute concerns the *kind* of difference experience makes—whether it can be purely structural is the question Inevitability 2 takes up. Experience’s causal powers are a question I2 expressly leaves open: epiphenomenalism remains logically available there as here.

Objection (Eliminativism (antecedent denial—routed to FP)). There is no experience; “experience” is just a misleading folk-psychological term for neural processes.

Response. This does not contest I1’s claim, which is a conditional: *if* experience occurs, reality differs. Denying the antecedent leaves the conditional standing. What it denies is FP’s result, and it is answered there: eliminativism about experience is self-refuting, since to deny experience one must be in an experiential state of denial. It is recorded here only because readers raise it here; its point of contact is FP.

Objection (Identity Theory). Experience *is* neural activity, so it’s not an additional constituent. Reality doesn’t differ because experience just is the physical; there’s nothing “over and above.”

Response. The identity theorist faces a dilemma:

Horn 1: If experience = neural activity (strict identity), then “experience” and “neural activity” are two names for one constituent. I1 is satisfied: that constituent exists and is part of reality’s inventory. But then we must ask: which description is fundamental? Is the appearing fundamental and the neural description derivative? Or vice versa?

- If the neural/physical description is fundamental, then the question is how structural description captures appearing—whether structural and phenomenal can be identified. That is not this chapter’s question; on this route, I1 is satisfied.
- If the phenomenal description is fundamental, then physical description is derivative—and the identity theorist has effectively abandoned physicalism.
- If both descriptions are fundamental—a dual-aspect reading—the phenomenal description’s fundamentality is thereby granted: appearing is not derivative of structure. What relation holds between the two descriptions is a further question, not I1’s.
- If neither is fundamental—both derivative of some neutral third—the identity claim is preserved but the grounding question transfers to the base: the neutral-monist route, which survives here.

Horn 2: If experience $\neq$ neural activity (not strict identity), then experience *is* an additional constituent, and I1 is satisfied straightforwardly.

Either way, the question identity theory must answer arrives at I2, not I1. I1 is deliberately formulated to be acceptable to identity theory precisely so I2 can do the real work.

Objection (Modal Skepticism). Counterfactual claims about “reality without experience” are metaphysically problematic. We cannot know what such a reality would be like, or whether it’s coherent.

Response. The argument does not require robust modal realism, metaphysical contingency of experience, or epistemic access to experienceless worlds. It requires only:

- Conceptual distinction between “reality with X ” and “reality without X ”
- Recognition that the totalities so picked out differ in membership—non-identity then follows by BA4b with the indiscernibility of identicals, rather than entering as a separate input
- That non-identical totalities $\neq$ mere linguistic variance

Even if experience exists necessarily in all possible worlds, we can distinguish the proposition “reality includes experience” from the proposition “reality includes only non-experiential facts.” These propositions differ in content even if the second is necessarily false.

The argument can be reformulated without counterfactuals: *Reality includes experience. A totality including X is not identical to a totality not including X , since they differ in an individuating respect (BA4b) and identical things differ in none. Therefore reality’s identity is partly constituted by experience’s inclusion.*

Objection (Deflationism). Maybe “experience makes a difference” is just a manner of speaking. We can describe everything in purely physical terms; adding “experience” language adds no real content.

Response. This conflates descriptive completeness with ontological completeness. Even if physical language could describe all causal-structural relations, this does not entail that reality contains only what physical language describes. Constituents are what reality contains, not what language expresses about reality. The deflationist must either (a) deny experience occurs, which fails at FP, or (b) grant that experience occurs but is “nothing real.” Reading (b) splits in two. If “nothing real” means experience exists yet falls outside reality, that is incoherent by BA4a: to exist and yet fall outside reality is incoherent—if experience occurs, it is something, and something is part of reality. If instead it means reality’s identity is wholly unanswerable to what it contains, that is the BA4b reject path: coherent, at its recorded cost (see the Defense against deflationism above), and no longer deflation, since the denial is purchased with a substantive metaphysical commitment rather than with parsimony. What the deflationist cannot do is keep BA4a and BA4b and deny the difference.

3.5 Scope and Limits

3.5.1 What This Derivation Establishes

- Experience is a genuine constituent of reality
- Any framework that grants experience occurs and does not reject BA4a or BA4b must grant experience ontological standing

Formal statement: Every instance of appearing is one without which reality would be a different totality. The presence of experience is an ontological fact: experience is a constituent of reality, and reality’s identity answers partly to its inclusion—a claim the constituent may satisfy under two names (see the Identity Theory response).

3.5.2 What This Derivation Does Not Establish

- **That experience is causally efficacious.** I1 is compatible with epiphenomenalism. Causal power is not the same as ontological inclusion.
- **That experience is non-physical.** I1 is neutral on physicalism. The identity theorist can accept I1; the question of whether identity theory is coherent is deferred to I2.

- **What kind of constituent experience is.** Whether experience is a substance, property, event, process, or something else entirely is not addressed here.
- **That experience is fundamental rather than derivative.** I1 establishes only that, given its occurrence, any adequate ontology must include it. It does not commit to panpsychism or any claim about experience being basic rather than emergent.
- **What kind of difference experience makes.** I1 establishes that experience makes *some* difference. What kind of difference it makes is the question Inevitability 2 takes up.

3.6 Implications for Existing Frameworks

3.6.1 Evaluation Criterion

The Difference Criterion: Any adequate theory of consciousness must grant that experience, occurring, is a constituent of reality—that reality with it is not the totality reality would be without it.

What this criterion requires:

- Grant FP’s result (appearing occurs) and do not reject BA4a or BA4b
- Nothing further: the conclusion then follows in three steps (Axioms 4, 5, and 6)

What this criterion does *not* require:

- Causal efficacy—epiphenomenalism passes; inclusion is not causal power
- Non-physicality—identity theory passes; the constituent may bear two names
- Fundamentality—nothing here decides basic versus emergent

Evaluation categories. The category names are fixed across all chapters; each chapter specialises their content to its own constraint.

- **FAILS:** *Empty at this stage.* A framework that grants appearing occurs and does not reject the background assumptions has I1’s conclusion in the same three steps; there is no substantive demand to fall short of.
- **FACES PRESSURE:** *Unavailable in principle at this stage.* The middle tier marks a mechanism that could do the required work but is underspecified; the Difference Criterion asks for no mechanism, so there is nothing to have-but-underspecify.
- **PASSES:** Every framework that clears FP and does not reject BA4a or BA4b. This block exists for chain consistency and transparency: the check was run, not skipped; it filters nothing.

Exit semantics. FAILS and FACES PRESSURE are exits, not grades short of a pass: the chain does not proceed for a framework until a chapter’s criterion is met. At this stage both are empty, so the only way out of I1 is a reject path: BA4b is the named coherent one (see the deflationism defense)—reject and stop, or reject and supply a replacement per the Introduction’s replacement rule.

Each chapter’s survey covers only its own verdicts; where every framework left the chain is collected in the Conclusion’s constraint table.

The significance of I1 is not that it eliminates frameworks but that it *sets up* I2.

3.7 Bridge to Inevitability 2

Inevitability 1 establishes: **Every instance of appearing is a constituent without which reality would be a different totality.**

But this leaves open: **What is included?**

Two logical possibilities:

- (a) **Structural/relational facts only** — Experience *is* structure, function, or information. No ontological remainder beyond structural description. “Appearing” is just how structure is when it’s sufficiently complex, integrated, or organized.
- (b) **Not purely structural** — Structural description does not exhaust experience. Something outside structural description is essential to it, whether or not experience also has structural aspects.

Reductive structuralism (standard physicalism, functionalism, strong IIT) claims (a). Inevitability 2 takes up whether (a) can hold.

This is why $I1 \rightarrow I2$ is the crucial pivot:

- I1 gets everyone who has not taken a recorded exit at FP or I1 to agree: experience occurs and makes an ontological difference
- I2 divides: what *kind* of reality?

A reader who accepts I2 is thereby committed to I1 and FP, since I2 is derived from them. Commitment does not run the other way: advancing beyond I2 requires the background assumptions introduced at each later stage.

3.8 Summary

Aspect	Status
Logical form	Valid deduction from FP + BA4a + BA4b + Axioms 4–6, with the indiscernibility
Assumption load	Minimal—inclusion + individuation at least partly by inclusion
Relation to FP	Direct extension—adds ontological implication to existential claim
Triviality	Intentional—inevitabilities are meant to be undeniable given the granted inputs
Counterfactual dependence	Eliminable—restatable in terms of constitutive inclusion
Epiphenomenalism	Compatible—I1 claims inclusion, not causal power
Identity theory	Compatible—dilemma emerges; the dilemma’s question is I2’s
Fundamentality	Neutral—does not claim experience is basic
Bridge to I2	Sets up two-way fork: purely structural, or not purely structural

4 Inevitability 2: Experiencing Cannot Be Reduced to Structure Alone

Inevitability 2 (Experiencing Cannot Be Reduced to Structure Alone). *The fact that experience appears cannot be exhaustively accounted for by structure, relations, or information alone.*

What this chapter must establish. The statement above is this chapter’s obligation, not its title. Its load-bearing elements: the subject is *the fact that experience appears*; the exclusion covers *structure, relations, and information*; and the qualifiers—*exhaustively, alone*—make this a claim about complete accounting by structure by itself, not a denial that experience has structural aspects.

Note: This inevitability carries the primary logical weight of the derivation chain. It is where reductive structuralist accounts—including standard physicalism, functionalism, and strong IIT—fail.

Clarification of scope: I2 rules out *reductive structuralism*: the claim that experience *is* structure, function, or information and nothing more. It does not rule out views that posit non-structural aspects of reality (Russellian monism, panpsychism, property dualism). Whether such views count as “physicalism” is a semantic question. The substantive point: pure structure is insufficient.

4.1 Assumptions

This inevitability builds from the Foundational Premise and I1, and adds two background assumptions, one defended philosophical premise (Axiom 8), and one point-of-use commitment (the Note on 3P Closure, declared in the Definitions).

4.1.1 From Prior Derivations

ExpOcc: There is at least one instance of appearing. [FP]

I1: Experience makes an ontological difference—reality-with-experience $\neq$ reality-without-experience.

4.1.2 Background Assumptions

Background Assumption 5a (Structural exhaustion of the third-personal). Structural facts are those that obtain in virtue of relational, functional, and informational properties specifiable without reference to any subjective viewpoint. A complete structural description specifies configurations, patterns, functional roles, causal relations, and information-theoretic measures—everything that can be articulated from an observer-independent standpoint.

Background Assumption 5b (Entailment does not generate subject matter). Logical entailment does not introduce subject matter absent from its premises. Where a logically simple conclusion follows from premises each specifiable without reference to any subjective viewpoint, that conclusion is itself so specifiable.

Clarification: BA5a is a regimentation of what “structural” means, aligned with how structuralists themselves use the term. Physicalists, functionalists, and information theorists all claim their descriptions are complete without phenomenal vocabulary—that’s the *point* of their reductive programs. BA5a takes them at their word.

Clarification: BA5b is the descriptibility analogue of the familiar constraint that a conclusion cannot introduce vocabulary essentially absent from its premises. It is restricted to logically simple conclusions because disjunction introduction carries an arbitrary proposition into anything entailed; no principle of this form survives without that restriction. A critic who rejects BA5b must hold that facts each specifiable from no perspective can jointly entail a simple fact specifiable only from a perspective, and owes an example.

What BA5a does *not* claim:

- That structural descriptions are inadequate or impoverished
- That structure cannot *correlate with* or *accompany* experience
- That Russellian “intrinsic natures” are impossible

What BA5a *does* claim:

- “Structural” = “specifiable without phenomenal vocabulary”
- This is how structuralists define their own project (see below)
- If phenomenal vocabulary is required for completeness, you’ve exceeded purely structural resources

Textual support for BA5a. This characterization is not imposed from outside but reflects how physicalists articulate their own commitments. Lewis states the thesis of materialism directly: “all fundamental properties and relations that actually occur are physical.”² The physical, on this view, is exhaustively characterizable in third-person structural terms—what causes what, how parts relate, what functions obtain. No phenomenal vocabulary enters the completed physics. BA5a takes structuralists at their word; the argument then shows this is insufficient.

Defense. A complete physical description of a brain state specifies every particle, field, and causal relation—without any term referring to “what it is like.” A complete functional description specifies inputs, outputs, and state transitions—without any term referring to “how it seems.” If a description requires such terms to be complete, it is no longer purely structural. The structuralist who objects “but real structure includes phenomenal aspects” has abandoned structuralism, not defended it.³

4.1.3 Definition of Key Terms

- **Structure:** The totality of relational, functional, and formal properties specifiable without reference to any subjective viewpoint. Includes: spatial relations, causal connections, functional roles, information content, mathematical form.
- **Third-person describable (3P):** A fact is 3P iff a complete account of that fact can be given without any term essentially referring to a subjective perspective. Equivalently: fully specifiable from an observer-independent standpoint. This criterion is stated in two ways in what follows, and the two are equivalent: a subjective perspective is a viewpoint from which things appear some way, so a term essentially referring to one is phenomenal vocabulary, and a specification requiring phenomenal vocabulary requires reference to such a viewpoint.

²Lewis, D. (1994). Reduction of Mind. In S. Guttenplan (Ed.), *A Companion to the Philosophy of Mind* (pp. 412–431). Blackwell. Quote from p. 413.

³What if future physics discovers “phenomenal properties” are fundamental physical properties alongside mass and charge? Then “physical” has been expanded beyond BA5a’s definition (third-person structural). Fine—but you’ve accepted I2’s point that *current* structural concepts are insufficient. By positing phenomenal fundamentals, you’ve abandoned the core physicalist commitment that third-person structural description is exhaustive.

- **First-person (1P):** A fact is 1P iff any complete specification of it requires reference to a subjective perspective—a viewpoint from which things appear some way. (See extended defense in §4.2.1.)
- **Categorical distinction:** Facts of type A are categorically distinct from facts of type B iff no accumulation of facts of type B logically entails facts of type A—B provides no derivational route to A.
- **Convention on facts and propositions:** Facts are taken as true propositions throughout; “fact” and “true proposition” are interchangeable here. 1P and 3P apply accordingly, and LogEntails relates any set of propositions to a proposition—so App, the proposition that appearing occurs, is a fact in this sense and a licit argument of both.
- **Reductive structuralism:** The thesis that experience *is* structure (function, information) and nothing more. Contrast with non-reductive views that posit structure plus something else.

4.2 Defense of Key Principles

Before the derivation, two principles require explicit defense.

4.2.1 Why Appearing is Constitutively First-Personal

A physicalist might object: “I grant that *access* to appearing requires a first-person perspective—you have to *be* the system to know what it’s like. But this doesn’t mean appearing *is* first-personal ontologically. Pain might be neural state N, which is third-person describable, but only accessible from inside.”

This objection confuses two claims:

- (a) **Epistemic first-personality:** Appearing is *knowable* only from a first-person perspective.
- (b) **Constitutive first-personality:** Appearing is *constituted by* perspective—the *for*-relation is part of what appearing *is*.

I2 requires (b), not merely (a). Here is the argument for (b):

Consider what “appearing” means. Not merely: “A state exists.” But: “A state exists *for* a subject *as* having character C.” “Subject” here names only the *for*-pole’s occupant—P0 fixes the position and its minimal sense; what remains open is whether anything beyond the occurrence—ego, soul, subject-substance—occupies it. No substantive self, ego, or persisting experiencer is imported; FP’s Scope expressly declines to import one, and nothing below needs one.

The *for*-relation is built into what appearing *is*. This is not an additional fact about appearing; it is part of appearing’s very structure. Consider:

- *Remove the subject-pole:* You don’t have “appearing that’s unknown” or “appearing from no perspective.” You have *no appearing at all*. Appearing-to-nothing is not a kind of appearing.
- *Remove the character:* You don’t have “appearing without qualities.” You have no appearing. Appearing is always appearing-*as*-something.

Consider what a structural specification delivers. Take any configuration, causal architecture, self-locating model, or system representing its own states, and specify it exhaustively in third-person terms. The specification fixes what obtains, how the parts stand to one another, and what the system does. It does not thereby fix that there is something it is like to be that system. This

is not a matter of insufficient detail. The *for*-relation is not a component the specification has omitted; it is not the kind of thing structural specification delivers.

Appearing *is* presentation-to-perspective. The perspective is not external to appearing; it is *constitutive* of it. A “view from nowhere” on appearing is not a limited view—it is not a view of appearing at all.

Conclusion: $1P(\text{App})$ is not stipulative: the removal argument above is its warrant. FP fixes the minimal sense of appearing (P0’s for-pole: something it is like *for that occurrence* to obtain); that the for-pole is constitutive—so that complete specification requires it—is this section’s work, not FP’s result. FP states the for-pole as P0’s minimal sense; this section supplies the constitutivity defense: a division of labor, not a disagreement. From kind to type: App is the fact that appearing occurs; by the Note on 3P Closure a complete account of it states what it essentially involves—an instance of appearing—and by the constitutivity just defended, specifying an instance requires reference to its perspective. Hence $1P(\text{App})$ by 1P’s definition, with the Note as the crossing’s sole license.

4.2.2 Logical vs. Metaphysical Entailment

The argument will show that structural facts do not *logically* entail appearing. A Type-B physicalist may respond: “Correct, but *metaphysical* entailment suffices. Structure metaphysically necessitates experience even if we can’t see the entailment a priori.”

This response must be addressed directly.

Distinction.

- **Logical entailment:** A priori, conceptual, knowable from the meanings of terms
- **Metaphysical entailment:** A posteriori, discovered, may involve necessary connections not visible conceptually

The Type-B move: Accept logical gap, claim metaphysical bridge.

Why this fails: (1) *The decisive point: Psychophysical necessitation is categorically different from standard a posteriori identities.*

Standard a posteriori identities (water/H₂O, heat/molecular motion) are *intra-domain*: both relata are structurally specifiable. Water is specifiable via observable properties and causal roles; H₂O is specifiable via molecular composition. The identity claim says these two structural descriptions pick out the same stuff. The necessitation relation holds between items of the same ontological category. The “making” is transparent once you understand chemistry—molecular structure constitutes the observable properties.

But psychophysical necessitation, if it obtained, would be *inter-domain*: it would link structural facts (exhaustively third-personal, per BA5a) to facts that are constitutively first-personal (per I2’s Axiom 8). The chasm isn’t merely epistemic—it’s the categorical distinction between what can be specified from no perspective and what constitutively involves a perspective.

This isn’t a modal relation between existing structural items—it’s a brute bridge across an ontological divide. The Type-B physicalist isn’t positing an unexplained identity within a domain; they’re positing an unexplained *category crossing*. And when asked what *makes* that crossing hold, they can only say: “It just does.”

That is an inter-category bridge—brute, if left unexplained. And the bridge is not itself purely structural: a complete account of the fact that structure necessitates appearing must specify ap-

pearing, not merely denote it (see the Note on 3P Closure in the Definitions below), and appearing is first-personal (Axiom 8); by the Note, the necessitation fact is therefore not exhaustively third-person describable (Axiom 9)—and hence, by Axiom 7’s contrapositive, not purely structural. Whether bruteness of this kind is acceptable at all is taken up at I3; the argument here does not turn on it, requiring only that the necessitation relation be a further item beyond structure, not that it be unexplained.

Therefore, even if Type-B physicalism were true, reality would contain more than structure: it would contain structure + a psychophysical necessitation relation beyond structure—brute if left unexplained. This is precisely what I2 claims: structure *alone* is insufficient.

The Type-B physicalist has conceded that reality contains more than what third-person structural description captures—namely, a psychophysical necessitation relation that isn’t discoverable by physics—a posteriori necessitation holding in virtue of no shared categorical features, and brute on the Type-B account’s own terms if left unexplained.⁴

(2) *The analogy to water/H₂O breaks down.*

For water = H₂O:

- We have an *a posteriori identity*: empirical investigation reveals same stuff
- The conceivability of their difference reflects ignorance of actual identity
- Once we know H₂O’s properties, water’s properties are explained

For structure = experience:

- No analogous identity is available
- There is no experiment revealing “structure just *is* appearing”
- Complete structural knowledge leaves “why appearing?” unanswered
- The relation is *sui generis*—unlike any other identity in nature

(3) *Brute necessitation is explanatory failure.*

Water = H₂O because molecular composition *determines* observable properties. The connection is intelligible: structure → behavior.

Structure → experience how? There is no connecting principle. The necessitation would be brute—holding for no reason. If the necessitation is inexplicable *in principle*, then it is not a reduction. It is an admission that structure alone doesn’t do the explanatory work—the necessitation itself is a further, unexplained fact.

Conclusion: Axiom 10 (entailment preserves describability) applies to *logical* entailment. The Type-B escape to metaphysical necessity either (a) fails to provide genuine explanation, or (b) concedes a further fact beyond structure. Either way, I2’s conclusion stands.

The Phenomenal Concept Strategy. A sophisticated Type-B physicalist (Papineau, Tye, Balog) might respond via *phenomenal concepts*: our concepts of phenomenal states differ cognitively from our concepts of physical states, even though the referents are identical. On this view, the conceivability of zombies reflects a conceptual gap, not an ontological one. We have two ways of thinking about the same physical property—a “recognitional” or “quotational” concept that deploys the experience itself, and a theoretical concept from neuroscience. The gap is epistemic, not metaphysical.

This strategy fails to undermine I2 for three reasons.

⁴The Type-B physicalist might respond: “The necessitation relation is a ‘further fact,’ but not a further *thing*—it’s just how reality is structured. Structure includes the psychophysical laws.” But if “structure” includes psychophysical laws that aren’t discoverable by physics, then “structure” has been expanded beyond BA5a’s definition. You’re now positing something beyond third-person physical science. Call it “expanded structure” if you like—but you’ve conceded I2’s point: third-person physical description (BA5a’s sense) is insufficient.

First, the phenomenal concept strategy explains why we *think* there is a gap; it does not show the gap is merely apparent. Even granting that phenomenal concepts are recognitional or quotational, the question remains: what makes them apt? Why does deploying the experience in thought successfully refer to anything? If phenomenal concepts track something real—namely, phenomenal character—then that something is what I2 identifies as not purely structural. The strategy assumes phenomenal concepts have referents; those referents are the non-structural ingredient.

Second, phenomenal concepts are themselves experiential. A concept that “deploys the experience itself” or “quotes” phenomenal character presupposes that there is phenomenal character to deploy or quote. The strategy explains the epistemic gap by invoking phenomenal properties in the explanation. This is not a reduction of the phenomenal to the structural; it is an acknowledgment that phenomenal vocabulary is ineliminable even in explaining our epistemic situation. A complete structural description of the brain would not mention phenomenal concepts as such—it would describe neural firing patterns. That those patterns constitute phenomenal-concept-deployment is precisely the further fact I2 establishes (Note on 3P Closure, Definitions below).

Third, consider Papineau’s token-reflexive account specifically: phenomenal concepts use the physical state itself to think about that state. On this view, when you deploy the concept *pain*, you’re using the physical pain-state token-reflexively to refer to itself. But this doesn’t dissolve the problem—it relocates it. Why is there something it is like to deploy this concept? The token-reflexive use of a physical state is itself a structural/functional relation (state S being used in cognition to refer to S). But the phenomenal character of deploying that concept—what it’s like to think about pain by “using” the pain—is not captured by describing the token-reflexive relation. You cannot explain phenomenology by presupposing it in the explanation.

4.3 Natural-Language Derivation

Goal: Show that the difference experience makes (established in I1) cannot be captured by structural description alone.

4.3.1 Step 1: Experience makes a difference (from I1)

From Inevitability 1: for any occurrence of experience, reality with it is ontologically distinct from reality without it. Experience is a genuine constituent of reality (BA4a, via I1), not merely a manner of speaking about something else.

The question is: *what kind* of constituent?

4.3.2 Step 2: Two logical possibilities

Given that experience is a genuine constituent (I1), the question admits exactly two answers:

- (a) **Purely structural:** Experience *is* structure, function, or information. The difference experience makes is fully captured by structural description. “Appearing” is just what certain structures do or are.
- (b) **Not purely structural:** Structural description does not exhaust appearing. Something outside structural description is essential to it.⁵

⁵I2 rules out (a) only. Any view on which something outside structural description is essential to appearing has already accepted I2’s conclusion—Russellian monism, for instance, where structure provides the relational skeleton and experience the intrinsic filling. The non-structural element must be essential rather than an optional addition; that is what distinguishes an instance of (b) from (a) with decoration.

Reductive structuralism (standard physicalism, functionalism, strong IIT) claims option (a). This derivation shows (a) is impossible. It does not adjudicate among the positions remaining in (b). Whether experience also has structural aspects is a question for a candidate theory; a constraint on theories does not settle it.

4.3.3 Step 3: Structure is exhaustively third-person

By BA5a, structural facts are completely specifiable without reference to any subjective viewpoint. A complete structural description of a system tells you:

- Every particle's position and momentum
- Every causal relation
- Every functional role
- Every information-theoretic measure
- Every mathematical property

But nowhere in this description appears: “and there is something it is like to be this system.” The structural description is complete on its own terms without this addition.

This is not a defect—it is what makes structural description *structural*.

4.3.4 Step 4: Appearing is constitutively first-personal

As argued in §4.2.1, appearing is not merely *known* from a first-person perspective; it is *constituted* by perspective. The *for*-relation (appearing-to-a-subject) is part of what appearing *is*.

The difference experience makes (I1) is precisely this: that there is something it is like. This requires:

- A subject-pole (for which it appears)
- A character (as which it appears)

Remove either and you have not “appearing from no view” but *no appearing*.

4.3.5 Step 5: The Explanatory Asymmetry

Consider how genuine reductions work:

- “Why is there liquidity?” → Answered by molecular dynamics (structure explains behavior)
- “Why is there temperature?” → Answered by mean kinetic energy (structure explains measure)
- “Why is there appearing?” → No structural answer available

This asymmetry is not ignorance. Adding more structural detail doesn't address “why appearing?” The question persists no matter how complete the structural story becomes.

Compare:

- “Why does H₂O form droplets?” → More chemistry helps
- “Why does this brain state feel like something?” → More neuroscience doesn't help

The second question is of a different *kind*. It asks not for more structure but for why structure is accompanied by appearing at all. This is the categorical mismatch.

4.3.6 Step 6: Logical non-entailment

Consider the complete set of structural facts about reality: all particles, all relations, all information. Call this set Σ .

Does Σ logically entail “there is something it is like”?

No. The description Σ is consistent with:

- “There is appearing” (our world, apparently)
- “There is no appearing” (a structurally identical world without experience)

If Σ logically entailed appearing, the second description would be contradictory. But it is not—there is no logical contradiction in “ Σ obtains and nothing appears.” The consistency is the exhibit; the general result is the formal track’s, where the reductio runs on BA5b’s restriction (entailment preserves descriptibility for logically simple propositions, and appearing qualifies).

Note on zombies. This point is often made via “zombie worlds.” We use it as a *logical* observation about entailment, not a *metaphysical* claim about possible worlds. Even if zombies are impossible, their conceivability exhibits what the formal track proves (the reductio running on Axioms 7–10): structural description doesn’t *logically entail* experience.⁶ (The Type-B response—granting conceivability but denying possibility—is addressed in §4.2.2.)

4.3.7 Step 7: The difference experience makes is not purely structural

From steps 3–6:

- Structural facts are exhaustively third-personal (BA5a)
- Appearing is constitutively first-personal (Step 4)
- Third-person facts do not logically entail logically simple first-person facts (Step 6; the restriction is BA5b’s, and appearing qualifies as simple—verified in the Symbolic Formalization; Step 5’s asymmetry supports the same conclusion without independently deriving it—Step 6’s restriction applies)

Therefore: The difference that experience makes (I1) cannot be a purely structural difference. If it were purely structural, it would be exhaustively third-person describable. But appearing is not exhaustively third-person describable. Therefore appearing is not purely structural (via Step 4’s identification).

4.3.8 Step 8: Conclusion

The difference experience makes—that there is something it is like—is categorically distinct from any structural difference. Structure, relations, and information cannot *logically* entail appearing.

Any framework claiming experience *is* structure alone thereby fails to account for the very phenomenon it purports to explain—the accounting register is earned at the From-logical-to-metaphysical paragraph in the Symbolic Formalization, not by the entailment result alone.

⁶Zombie impossibility would not show structure necessitates experience—it could be that *both* structure *and* a non-structural ingredient are necessary, and the non-structural ingredient is what makes zombies impossible. Zombie impossibility is therefore compatible with I2. What matters for I2 is that structural description alone doesn’t *logically entail* appearing—which zombie conceivability exhibits regardless of their metaphysical possibility.

4.4 Symbolic Formalization

4.4.1 Definitions

- $\text{Struct}(x) \triangleq$ “ x is a purely structural fact (BA5a)”
 $3P(x) \triangleq$ “ x is exhaustively third-person describable”
 $1P(x) \triangleq$ “any complete specification of x requires reference to a subjective perspective” (Key Terms)
 $\text{App} \triangleq$ “Appearing occurs”
 $E(x) \triangleq$ “ x is an instance of appearing”
 $R \triangleq$ “the actual totality of existents”
 $R \setminus x \triangleq$ “the totality obtained by removing x ”
 $\text{Id}(R_1, R_2) \triangleq$ “ R_1 and R_2 are identical as totalities”
 $\text{Diff}(x) \triangleq \neg \text{Id}(R, R \setminus x)$
 $\text{LogEntails}(\Sigma, \varphi) \triangleq$ “The set Σ logically entails φ ”
 $\text{Simple}(\varphi) \triangleq$ “ φ contains no truth-functional connective”
 $\text{StructFacts} \triangleq \{x : \text{Struct}(x)\}$

Note on 3P Closure. A complete account of a fact states what that fact essentially involves; reference without specification does not complete an account, because facts are individuated by what they involve, not by how they may be denoted. Given that, non-third-personality transmits: if a complete account of fact φ must specify x , and x is 1P—any complete specification of x requires reference to a subjective perspective—then φ ’s complete account inherits that requirement, so φ is 1P and therefore $\neg 3P$ (Axiom 9). The first sentence is the commitment; the rest is transitivity of “requires.”

4.4.2 Axioms

Axiom 7 (Structural exhaustion (from BA5a)).

$$\forall x (\text{Struct}(x) \rightarrow 3P(x))$$

All structural facts are exhaustively third-person describable. This is definitional given BA5a: a purely structural fact is specifiable, in its entirety, without phenomenal vocabulary, and by the equivalence stated in Key Terms, such specifiability is exhaustive third-person describability.

Axiom 8 (Appearing is constitutively first-personal (defended philosophical premise; §4.2.1)).

$$1P(\text{App})$$

The fact of appearing is constitutively first-personal—perspective is part of what appearing is, not merely how it is known. The defense (§4.2.1) argues this of appearing as a kind; the type-level assertion—1P of App itself—is licensed by the Note on 3P Closure: a complete account of the fact that appearing occurs states what that fact essentially involves, an instance of appearing, whose complete specification requires the perspective it is constituted by.

Axiom 9 (First-person/third-person exclusion (from the definitions of 1P and 3P)).

$$\forall x (1P(x) \rightarrow \neg 3P(x))$$

What is first-personal is not exhaustively third-person describable. This follows from the definitions: if complete specification requires a subjective perspective, it cannot be complete without one.

Axiom 10 (Logical entailment preserves describability (from BA5b)).

$$\forall \Sigma \forall \varphi ((\forall x \in \Sigma: 3P(x)) \wedge \text{Simple}(\varphi) \wedge \text{LogEntails}(\Sigma, \varphi)) \rightarrow 3P(\varphi)$$

If all members of Σ are third-person describable and Σ logically entails a logically simple φ , then φ is third-person describable. You cannot derive a proposition requiring first-personal vocabulary from premises lacking it. The restriction to simple φ is required rather than incidental: disjunction introduction carries an arbitrary proposition into anything entailed, so no principle of this form survives without that restriction. Σ ranges over sets of facts. (See §4.2.2 for defense against Type-B objection.)

4.4.3 Derivation

1. $\exists x (E(x) \wedge \text{Diff}(x))$ [I1 Corollary, discharged by ExpOcc]
2. $1P(\text{App})$ [Axiom 8]
3. $\neg 3P(\text{App})$ [from 2, Axiom 9]
4. $\forall x (\text{Struct}(x) \rightarrow 3P(x))$ [Axiom 7]
5. $\neg \text{Struct}(\text{App})$ [from 3, 4, universal instantiation and modus tollens]
6. Suppose for reductio: $\text{LogEntails}(\text{StructFacts}, \text{App})$
7. $\forall x \in \text{StructFacts}: 3P(x)$ [from 4, definition of StructFacts]
8. $\text{Simple}(\text{App})$ [App is $\exists x E(x)$, which contains no truth-functional connective]
9. $3P(\text{App})$ [from 6, 7, 8, Axiom 10]
10. $3P(\text{App}) \wedge \neg 3P(\text{App})$ [from 3, 9 — contradiction]
11. $\neg \text{LogEntails}(\text{StructFacts}, \text{App})$ [from 6–10, reductio]
12. $\exists x (E(x) \wedge \text{Diff}(x)) \wedge \neg \text{Struct}(\text{App}) \wedge \neg \text{LogEntails}(\text{StructFacts}, \text{App})$ [from 1, 5, 11]
13. Therefore: reality contains a constituent whose inclusion makes a difference to reality's identity, appearing is not a purely structural fact, and structural facts do not logically entail appearing. [12, restated in prose]

4.4.4 Conclusion

$$\exists x (E(x) \wedge \text{Diff}(x)) \wedge \neg \text{Struct}(\text{App}) \wedge \neg \text{LogEntails}(\text{StructFacts}, \text{App})$$

Experience is a constituent of reality whose inclusion makes a difference to reality's identity (I1); appearing is not a purely structural fact (Axioms 8, 9 and 7); and appearing is not logically entailed by the totality of structural facts. The first conjunct is what makes the third ontological rather than semantic: its Diff-component blocks the deflationist reading on which appearing is a mere manner of speaking, and its E-component—FP's Occ, carried through I1's corollary—is what makes non-entailment non-vacuous: there is something the structural facts fail to entail. The second conjunct is derived from Axioms 8, 9 and 7 alone and does not depend on Axiom 10; it therefore stands independently of any dispute about entailment-preservation.

From logical to metaphysical. The derivation establishes *logical* non-entailment: no set of structural propositions logically implies appearing. *Metaphysical* distinctness follows by disjunction. Either structure metaphysically necessitates appearing or it does not. If it does not, appearing is not reducible to structure and the conclusion holds directly. If it does, the necessitating relation is itself not purely structural: a complete account of the fact that structure necessitates appearing must specify appearing, not merely denote it (Note on 3P Closure), and appearing is first-personal (Axiom 8); by the Note the necessitation fact is not exhaustively third-person describable (Axiom 9), so it is not purely structural by Axiom 7’s contrapositive. Either way, reality contains something beyond structure. We do not claim that conceivability entails possibility, and the argument does not turn on the physicalist having failed to supply an intelligible necessitation relation; supplying one does not help, since any such relation is itself the non-structural ingredient (see §4.2.2).

Discharges Inevitability 2. *The fact that experience appears:* App, carried from FP and made ontological by the first conjunct (I1). *Structure, relations, or information:* BA5a regiments all three as structural facts—StructFacts. *Alone:* the second conjunct denies purely structural status only, and the third quantifies over the totality of structural facts; both encode the qualifier. *Cannot be exhaustively accounted for:* the third conjunct delivers the logical register—no accumulation of structural facts entails appearing—and the paragraph above carries it to the accounting register, in prose by design (see the Note on 3P Closure for the one commitment that crossing uses).

4.5 Objections Addressed

Objection (Type-B Physicalism). The zombie world is conceivable but not metaphysically possible. Structure does necessitate experience, even if we cannot see the entailment a priori. The gap is epistemic, not ontological.

Response. This is addressed extensively in §4.2.2. Summary:

1. The water/H₂O analogy fails—standard a posteriori identities are *intra-domain* (both relationally specifiable), while psychophysical necessitation would be *inter-domain* (crossing from third-personal to constitutively first-personal)
2. Intra-domain necessitation is intelligible (molecular structure constitutes observable properties); inter-domain necessitation requires a brute bridge across an ontological chasm
3. The Type-B physicalist posits not an unexplained identity but an unexplained *category crossing*

The Type-B physicalist either provides a connecting principle—which does not help, since any such principle is itself the non-structural ingredient (see the From-logical-to-metaphysical paragraph)—or accepts brute inter-domain necessitation. Either way, I2’s conclusion stands: structure *alone* is insufficient.

Note on the phenomenal concepts strategy. This response addresses the “phenomenal concepts strategy” developed by Loar, Papineau, and others: the claim that phenomenal and physical concepts co-refer to identical properties under distinct modes of presentation. On this view, the explanatory gap reflects a difference in *concepts*, not in *properties*—just as “water” and “H₂O” are different concepts for the same substance.

However, co-reference without explanation of the systematic conceptual asymmetry faces a trilemma. Why do phenomenal concepts exist at all, and why are they so categorically different from physical concepts? Either: (a) the conceptual difference has a structural explanation—which is compatible with I2 and escapes nothing, since the explanation concerns the concepts while the strategy’s own thesis locates their referent in appearing (see below); (b) the conceptual difference

has a non-structural explanation—but this concedes that something non-structural (the ground of phenomenal concepts) is part of the complete story, which is I2’s conclusion; or (c) the conceptual difference is brute—but this does not rescue the strategy. Its thesis is co-reference: phenomenal and physical concepts pick out the same property under distinct modes of presentation. Whatever explains the bifurcation, or fails to, the referent of a phenomenal concept is appearing, which is constitutively first-personal (Axiom 8) and therefore not exhaustively third-person describable (Axiom 9). The non-structural ingredient reappears at the level of reference. Horn (c) does not evade I2; it returns the strategist to the Type-B position addressed above.

The phenomenal concepts strategy attempts to close the explanatory gap by relocating it to the conceptual level. But the gap reappears: what explains the *conceptual* gap? Loar’s answer—that phenomenal concepts are recognitional concepts that pick out their referents directly—does not dissolve the question but restates it. Why does direct recognition yield concepts so systematically different from physical-theoretical concepts? The asymmetry demands explanation; the strategy provides none.

Objection (Illusionism). There is no “real” appearing to explain. What we call appearing is just a functional state—the brain representing itself as having qualitative states when it doesn’t. Structure explains the illusion.

Response. The illusionist faces a dilemma:

Horn 1: If the illusion itself appears (there is something it is like to be under the illusion), then appearing occurs, and I2 applies to the illusion. The illusion is itself first-personal, and structure doesn’t entail it.

Horn 2: If the illusion doesn’t appear (there is nothing it is like to be under the illusion), then there is no illusion—just structural states with no phenomenal character. But this is eliminativism, which fails at FP.

The illusionist typically takes Horn 1. But then they owe an account of how structure produces the illusion-appearance—and the explanatory gap reappears. What makes a brain state be an *appearing* illusion rather than mere functional mimicry of one?

I2 is agnostic on whether phenomenal concepts are accurate. It claims only that whatever appears (even illusory appearances) is not exhaustively structural.

Objection (Functionalism). Experience is identical to functional organization. The “appearing” just *is* the functional role. There is no further fact beyond what the system does.

Response. Functionalism faces the absent qualia problem:

Consider two systems with identical functional organization:

- System A: There is something it is like to be A
- System B: There is nothing it is like to be B

If functionalism is true, B is impossible—functional identity entails phenomenal identity. But the description of B is logically consistent—no contradiction arises in the supposition. As with the zombie point, the consistency is the exhibit; the general result is the formal track’s (Axioms 7–10). Functional descriptions don’t *logically entail* phenomenal character.

The functionalist’s response—“conceivability doesn’t entail possibility”—is available. This moves them to Type-B territory: functional organization metaphysically necessitates phenomenal character even though the entailment isn’t visible a priori.

But this move concedes I2’s point. If functional facts don’t logically entail phenomenal facts, then the necessitation relation between them is a *further fact* beyond functional description (the crossing licensed by the Note on 3P Closure, as in the From-logical-to-metaphysical paragraph). The functionalist who makes the Type-B move has accepted that functional organization alone—specifiable in purely third-person terms—is insufficient for appearing. Something beyond functional

description (the necessitation relation itself, a further non-structural item) is required. This is precisely what I2 claims.

Furthermore, functional descriptions are multiply realizable: the same function can be realized by different structures. But appearing has determinate character—there is something it is like to have *this* experience, not just to occupy a functional role. The thisness of experience exceeds functional specification. (Determinacy itself is BA6’s content, taken up at I3; the point here is only that functional role underdetermines it.)

Objection (Integrated Information Theory). Strong IIT identifies experience with integrated information (Φ).⁷ High Φ just *is* experience. The structure-experience gap is closed by this identification.

Response. Strong IIT’s identification fails because Φ is a structural property subject to I2’s core argument.

The calculation of Φ is entirely third-person. Given a system’s causal architecture, Φ can be computed without any phenomenal vocabulary—it measures integrated information over a system’s partitions, yielding a numerical value from structural analysis alone. Φ is precisely the kind of property BA5a defines as structural: specifiable without reference to any subjective viewpoint.

But appearing is constitutively first-personal (Axiom 8). The *for*-relation—appearing-to-a-subject—is not captured by any third-person measure, however sophisticated. The question persists: *Why does high Φ feel like something?*

Strong IIT’s answer—“by definition”—is stipulation, not explanation. Definitions do not create ontological identities. If Φ and experience were identical, we would need to understand *how* a third-person calculable quantity constitutes first-person appearing. IIT provides no such understanding; it posits the identity and stops.

Even if Φ correlated perfectly with consciousness, this wouldn’t show $\Phi =$ consciousness (correlation $\neq$ identity). The structure/appearing gap from I2 applies directly: Φ is structural; appearing is not purely structural; the identification is a category error, however mathematically elegant.

Objection (Russellian Monism).⁸ Structure is extrinsic; experience is intrinsic. Physics describes relational structure; experience is the intrinsic nature of what stands in those relations. There is no gap because experience fills the structural skeleton.

Response. Russellian monism is *compatible* with I2—indeed, it *accepts* I2’s conclusion. The Russellian agrees that structure alone doesn’t account for experience; that’s precisely why intrinsic natures are posited.

I2 does not adjudicate between dualism, Russellian monism, panpsychism, or other non-reductive positions. It establishes only the negative thesis: *reductive* structuralism fails.

Whether Russellian monism counts as “physicalism” is semantic. The substantive point: if you posit intrinsic natures beyond structural description, you have accepted I2. You are no longer claiming experience *is* structure; you are claiming experience is something *else* that underlies structure.

Note: By positing “intrinsic natures,” Russellian monism has already abandoned the core physicalist commitment that third-person structural description is exhaustive. Whether we call this “physicalism” or not, it has accepted I2’s central claim.

Objection (Strawson’s “Real Materialism”).⁹ Galen Strawson argues that experiential properties

⁷Cf. Tononi, G., Boly, M., Massimini, M., & Koch, C. (2016). Integrated information theory: from consciousness to its physical substrate. *Nature Reviews Neuroscience*, 17(7), 450–461.

⁸For comprehensive treatment, see Alter, T. & Nagasawa, Y. (eds.) (2015). *Consciousness in the Physical World: Perspectives on Russellian Monism*. Oxford University Press.

⁹Cf. Strawson, G. (2006). Realistic Monism: Why Physicalism Entails Panpsychism. *Journal of Consciousness Studies*, 13(10–11), 3–31.

are physical—just not captured by current physics. He’s a “real materialist” who accepts the reality of experience. This shows physicalism is compatible with I2.

Response. Strawson’s position accepts I2’s *substance* while disputing its *terminology*.

Strawson agrees that third-person structural descriptions—physics as currently understood—do not capture experience. He agrees that no amount of functional, relational, or causal description yields the *for*-relation. His solution: expand what counts as “physical” to include experiential primitives.

But this concedes I2’s point. I2 claims that *structure alone*—third-person describable, observer-independent properties as currently understood—is insufficient. Strawson accepts exactly this. If “physical” is expanded to include experiential primitives not discoverable by third-person investigation, then “physical” has been redefined beyond BA5a’s scope.

Whether we call Strawson’s view “physicalism” or “panpsychism” or something else is semantic. The substantive point: he has accepted that reductive structuralism fails and that phenomenal properties are a genuine addition to ontology beyond what current structural description captures. This is I2’s conclusion.

Objection (The Hard Problem is Just Hard). Maybe we will eventually understand how structure produces experience. Your argument assumes what it needs to prove—that the gap is in principle unbridgeable.

Response. I2 does not claim the gap is “absolutely unbridgeable.” It claims *structure alone* cannot *logically* bridge it—no accumulation of structural facts logically entails phenomenal facts.

This is compatible with:

- Future discoveries of non-structural facts
- Revision of what counts as “structural”
- New conceptual frameworks

What I2 rules out is that *current* structural concepts (physics, function, information) are sufficient. If the gap is eventually closed, it will be by expanding ontology beyond reductive structuralism—which is precisely what I2 predicts.

The objector hopes for explanation; I2 claims explanation requires non-structural resources. These are compatible.

Objection (Question-Begging Definition). BA5a defines structure as “what can be specified without phenomenal vocabulary.” This builds the conclusion into the premises.

Response. BA5a does not stipulate that structure *cannot* capture experience. It regiments what “structural” means in alignment with how structuralists themselves use the term.

Physicalists, functionalists, and information theorists claim their descriptions are complete without phenomenal vocabulary—that’s the *point* of their reductive programs. They claim experience reduces to physics/function/information precisely because these are non-phenomenal.

BA5a takes structuralists at their word. The argument then shows this is insufficient.

If a structuralist objects that “real” structure includes phenomenal aspects, they have abandoned structuralism. They are now positing something beyond what third-person science describes—which is what I2 concludes must be done.

Objection (Dispositional Essentialism). Structure is not merely relational; it includes intrinsic causal powers. Properties like mass and charge are essentially dispositional—they have intrinsic “directedness” toward certain effects (Bird, Mumford). If structure includes intrinsic powers, it might ground appearing after all.

Response. Dispositional essentialism enriches the notion of structure but does not bridge the structure-appearing gap.

Even granting that physical properties have intrinsic directedness, the directedness concerns *what the property does*—its causal role, its manifestation conditions, its contribution to lawful regularities. This is still third-person specifiable. We can describe the dispositional essence of charge (attracts unlike, repels like, generates fields, etc.) without phenomenal vocabulary.

The question is: why does a system with these dispositional properties *feel like something*? Dispositional essentialism tells us what physical properties *do*; it does not tell us what they are *like from the inside*. A complete dispositional account of a neural system specifies its causal powers and manifestations—but “generates experience” cannot be among those manifestations unless experience is already in the picture. Listing “produces appearing” as a dispositional power is not an explanation; it is the explanandum restated.

Furthermore, the intrinsic natures that dispositional essentialists posit are still structural in BA5a’s sense: they are described in terms of causal roles, modal profiles, and physical interactions. If a dispositional essentialist claims the intrinsic nature of (say) neural properties *is* experience, they have moved to Russellian monism—which accepts I2.

Objection (Ontic Structural Realism). Structure is all there is. Reality is fundamentally relational; there are no intrinsic natures underlying structure (Ladyman, Ross, French). If structure exhausts reality, and experience exists, then experience must be structural.

Response. Ontic structural realism (OSR) faces a dilemma when applied to consciousness.

Horn 1: OSR denies intrinsic natures altogether, so appearing must be exhaustively relational—fully captured by relational-structural description. That is the claim Axiom 8 and its defense (§4.2.1) deny: the *for*-relation is not something relational specification delivers. Horn 1 is not an independent escape; it is the main structuralist position, and it meets this chapter’s central argument rather than FP.

Horn 2: OSR includes appearing within “structure” by expanding what counts as structural. But this expansion abandons the original motivation for OSR—that physics describes only relations, and relations are all there is. If “structure” includes irreducibly first-personal facts, OSR has become a different theory. The resulting view accepts that physics-as-currently-practiced is incomplete, which is I2’s point.

The deeper issue: OSR was developed to address problems in philosophy of physics (underdetermination, the role of objects in quantum mechanics). It was not designed to address consciousness. Extending OSR to claim that appearing is “structural” requires an account of how relational, third-person facts constitute first-personal appearing. OSR provides no such account. The extension is programmatic, not explanatory.

If an ontic structural realist accepts that appearing exists (FP—undeniable) and has first-personal character (Axiom 8, the defended premise; §4.2.1), they must either (a) explain how relations constitute intrinsic character (a task OSR has not accomplished), or (b) acknowledge that appearing is something beyond the relational structure physics describes. Option (b) concedes I2.

4.6 Scope and Limits

4.6.1 What I2 Establishes

- The difference experience makes (I1) is not purely structural
- No accumulation of structural facts (physical, functional, informational) logically entails appearing
- Reductive structuralism cannot account for the phenomenon it purports to explain
- The explanatory gap is not merely epistemic but reflects a genuine categorical distinction
- Any viable account of experience must posit something beyond pure structure

Formal statement: Given that structural facts are exhaustively third-person (BA5a), that appearing is constitutively first-personal (Axiom 8), and that first-personal facts are not exhaustively third-person describable (Axiom 9), appearing is not purely structural—derived from Axioms 7–9 alone. With I1’s corollary carried as declared inheritance, the difference experience makes—that there is something it is like—is not purely structural. Appearing is irreducible to structure alone.

The conditional above states the not-purely-structural result. The entailment result— $\neg \text{LogEntails}(\text{StructFacts}, \text{App})$ —additionally rests on BA5b (Axiom 10), and FP’s Occ (carried as ExpOcc) supplies the occurrence both presuppose. The full conjunction is the Conclusion formula in the Symbolic Formalization.

4.6.2 What This Derivation Does Not Establish

- **That dualism is true.** I2 is compatible with dualism, Russellian monism, panpsychism, neutral monism, and any view positing non-structural features. I2 rules out *reductive* structuralism; it does not adjudicate among non-reductive alternatives.
- **That experience is causally efficacious.** I2 concerns the *kind* of fact experience is, not its causal powers. Epiphenomenalism remains logically available.
- **That structural correlates are unimportant.** Structure may be *necessary* for experience without being *sufficient*. I2 claims insufficiency, not irrelevance.
- **That we can know the intrinsic nature of experience.** I2 establishes that experience is not purely structural; it does not establish positive knowledge of what experience *is*.
- **That zombies are metaphysically possible.** Zombie conceivability is used as a logical point about entailment, not a metaphysical claim. Even if zombies are impossible, the conceivability exhibits what the formal track proves (Axioms 7–10): structural description doesn’t logically entail experience.
- **What the non-structural ingredient is.** I2 establishes that something beyond structure is required. What that something is—intrinsic nature, fundamental experiential property, selection principle—is addressed in subsequent inevitabilities.

4.7 Implications for Existing Frameworks

4.7.1 Evaluation Criterion

The Irreducibility Criterion: Any adequate theory of consciousness must grant that appearing is not purely structural—that no description in structural vocabulary alone is complete for it.

What this criterion requires:

- Grant that structural description—physical, functional, informational—is not exhaustive of appearing
- Equivalently: affirm that reality includes a non-structural ingredient in appearing

What this criterion does *not* require:

- Specifying what the non-structural ingredient is—this chapter expressly defers that question (see What This Derivation Does Not Establish)
- Denying that experience also has structural aspects—I2 rules out purely structural accounts only
- Any particular metaphysics: dualist, monist, panpsychist, and idealist affirmations all satisfy it

Evaluation categories. The category names are fixed across all chapters; each chapter specialises their content to its own constraint.

- **FAILS:** The framework affirms no non-structural ingredient in appearing—whether by holding that structural description alone is complete (reductive structuralism in any vocabulary), or by declining the constitution question while standing as a position on consciousness.
- **FACES PRESSURE:** *Unavailable in principle at this stage.* The middle tier marks a mechanism present but underspecified; this criterion is a yes/no question—a non-structural ingredient in appearing is affirmed or it is not—and what the ingredient is, is expressly not asked here. A framework affirming an unspecified one therefore meets the criterion in full. There is no partial credit on a yes/no question.
- **PASSES:** The framework affirms a non-structural ingredient in appearing, specified or not.

Exit semantics. FAILS and FACES PRESSURE are exits, not grades short of a pass: the chain does not proceed for a framework until a chapter’s criterion is met. At this stage the exit is FAILS, and re-entry requires giving up the exhaustiveness claim, or supplying the affirmation the question demands. A framework may instead dispute a premise—BA5a, BA5b, the Note on 3P Closure (the crossing’s stated license), or Axiom 8, which is where the main dispute lives—a reject path, assessed separately: reject and stop, or reject and supply a replacement per the Introduction’s replacement rule.

Each chapter’s survey covers only its own verdicts; where every framework left the chain is collected in the Conclusion’s constraint table.

Frameworks that FAIL at I2:

- **Reductive Physicalism:** Claims experience = physical structure. But physical structure is exhaustively third-person. Experience is constitutively first-personal. The identity claim fails.
- **Functionalism:** Claims experience = functional organization. But functional organization is exhaustively third-person. The absent qualia problem exhibits that functional descriptions don’t entail phenomenal character; the Type-B retreat to brute necessitation concedes I2’s point.
- **Strong IIT:** Claims experience = integrated information (Φ). But Φ is third-person calculable—a structural property specifiable without phenomenal vocabulary. The question “Why does high Φ feel like something?” receives no answer beyond definitional fiat.
- **Weak IIT (Φ as correlate or measure):**¹⁰ Offers a measure of consciousness while declining to say what experience is. No non-structural ingredient is affirmed; the constitution question is not addressed, and the chain cannot proceed on a position that does not answer it.

¹⁰For the strong/weak distinction see Mediano, P. A. M., Rosas, F. E., Bor, D., Seth, A. K., & Barrett, A. B. (2022). The strength of weak integrated information theory. *Trends in Cognitive Sciences*, 26(8), 646–655.

- **Global Workspace Theory (Baars, Dehaene):**¹¹ Claims consciousness = global broadcast of information across brain systems. But information broadcast architecture is exhaustively third-person describable—neurons firing, signals propagating, modules accessing shared workspace. The question “Why does global broadcasting feel like something?” receives no answer. A perfect functional duplicate implementing identical broadcast patterns is conceivable without experience—no contradiction arises in the supposition. GWT describes access consciousness. Offered as a complete account of consciousness—phenomenal included—its resources are structural alone, and it FAILS by this chapter’s criterion. Offered as an account of access that does not purport to account for appearing, it makes no claim this criterion tests, and receives no verdict here.
- **Higher-Order Theories (Rosenthal, Lycan):**¹² Claims a mental state is conscious when represented by a higher-order thought or perception. But meta-representation is a structural-functional relation—one state bearing a representational relation to another. The question “Why does being higher-order-represented feel like anything?” trades one mystery for another. One can have experiences without representing them (infants, animals), and can represent mental states without those representations being phenomenally conscious. The higher-order relation is third-person specifiable; experience is not exhaustively third-person specifiable.
- **Attention Schema Theory (Graziano):** Claims the brain constructs a self-model of attention, and consciousness is this model mistakenly attributed as subjective awareness. In its strong form (consciousness is *only* the model), this denies phenomenal consciousness exists—failing at FP, not I2. In its weak form the model exists and phenomenal consciousness is granted; offered as a complete account of consciousness, the proposal’s resources are wholly computational—third-person describable—so it holds that structural description alone is complete for appearing, and FAILS by this chapter’s criterion. A proponent who instead offers the schema as a mechanism-description that does not purport to account for appearing makes no claim this criterion tests, and receives no verdict here.
- **Predictive Processing / Active Inference (Friston, Clark):**¹³ Describes the brain as minimizing prediction error via hierarchical generative models—prediction, error signals, model updating, free energy minimization, all third-person specifiable. Offered as a complete account of consciousness, it holds structural completeness for appearing and FAILS by the criterion. Offered as cognitive architecture that does not address appearing, it makes no claim this criterion tests, and receives no verdict here.
- **Biological Naturalism (Searle; causal-completeness reading):** Claims consciousness is a higher-level biological feature caused by lower-level brain processes—irreducible to those processes yet not a separate substance. The verdict turns on which element does the accounting. Offered with neurobiological causation as the complete story, examine the positive proposal: consciousness is “caused by” neuronal activity. If that is standard physical causation, the proposed complete account cites only structural facts—a wholly structural account, which is precisely what this chapter rules out as complete (Note on 3P Closure); the digestion analogy fails exactly here, since digestion has a complete structural account (mechanical breakdown, chemical transformation, nutrient absorption) with no explanatory gap and consciousness does not. If it is instead a special non-structural causation, its nature is an affirmed non-structural ingredient, and the position falls under the irreducibility reading that follows. Offered instead with the irreducibility doing real work—consciousness as an

¹¹Cf. Baars, B. (1988). *A Cognitive Theory of Consciousness*. Cambridge University Press.

¹²Cf. Rosenthal, D. (2005). *Consciousness and Mind*. Oxford: Clarendon Press.

¹³Cf. Clark, A. (2013). Whatever next? Predictive brains, situated agents, and the future of cognitive science. *Behavioral and Brain Sciences*, 36(3), 181–204.

ontologically first-personal feature not exhausted by third-person description—the position affirms a non-structural ingredient in appearing, meets this chapter’s yes/no criterion, and carries its remaining questions forward.

- **Anomalous Monism (Davidson):** Claims mental events are identical to physical events (token identity) while denying strict psychophysical laws. The token identity claim means every mental event *is* a physical event. But experience is constitutively first-personal while physical events are exhaustively third-personal. If a given experience *is* a given neural event, and neural events are fully describable in structural terms, then the experience should be too. But it isn’t—the *for*-relation (appearing-*for*-a-subject) is not captured by any structural description. The anomalousness (lack of strict laws) doesn’t help: even without laws, if mental events *are* physical events, the identity should allow complete structural characterization. It doesn’t.
- **Orch-or (Penrose/Hameroff):** Claims consciousness arises from quantum computations in microtubules via orchestrated objective reduction. But quantum processes—superposition, entanglement, collapse—are still third-person describable physics. The Schrödinger equation, Born rule, and collapse dynamics are structural. Moving the locus of consciousness from classical to quantum processes doesn’t bridge the structure/appearing gap; it just makes the structure smaller and weirder. “Proto-consciousness” associated with objective reduction is stipulated, not explained. The question “Why does objective reduction feel like anything?” is no easier than “Why does classical computation feel like anything?” Unless Orch-or posits a genuinely non-structural ingredient beyond the quantum mechanics (moving toward panpsychism), it inherits standard physicalism’s I2 problem.

Frameworks that PASS I2:

- **Property Dualism:** Experience is a non-physical property. Compatible—I2 supports this view’s central claim.
- **Substance Dualism:** Experience belongs to a non-physical substance. Compatible, though I2 doesn’t require it.
- **Panpsychism:** Experience is fundamental and ubiquitous. Compatible—posits experience as non-structural.
- **Russellian Monism:** Experience is the intrinsic nature underlying structure. Compatible—accepts I2’s conclusion.
- **Neutral Monism:** Experience and matter are aspects of something more fundamental. Compatible—affirms a non-structural ingredient.
- **Biological Naturalism (irreducibility reading):** Consciousness as an ontologically first-personal biological feature not exhausted by third-person description. Compatible—affirms a non-structural ingredient.
- **Idealism:** Reality is fundamentally experiential. Compatible—doesn’t reduce experience to structure.

The critical pivot. I2 is where the derivation chain becomes genuinely discriminating. I1 is acceptable to nearly all frameworks; I2 exits the dominant positions of contemporary philosophy of mind as stated—re-entry requires giving up the exhaustiveness claim, or supplying the affirmation the question demands. Any framework surviving I2 must posit something beyond structure—which reductive physicalism, functionalism, and strong IIT refuse to do.

4.8 Bridge to Inevitability 3

Inevitability 2 establishes: **Appearing requires a non-structural ingredient.**

This immediately raises new questions:

- (a) What is this non-structural ingredient?
- (b) How does it relate to structure?
- (c) What determines *which* appearing actualizes?

Question (c) is the bridge to I3.

The determinacy problem. Experience is determinate. When you experience, you experience *this*—this specific shade, this particular ache, this definite thought. Not vague proto-experience, not a superposition of possibilities, but *this*.

In purely structural domains, determinacy is unproblematic: structure determines specificity. This particle is here rather than there because of prior causal conditions. This computation yields this output because of the algorithm and inputs. Structure provides the principle of selection.

But I2 has shown that appearing is not purely structural—the difference between experience and no-experience cannot be a purely structural difference. Now ask: what determines *which* experience occurs?

- Structure alone cannot determine this (I2’s result, extended to determinacy at I3 via Lemma 3.1)
- Yet determinacy is actual (experience *is* this, not another)
- Therefore either that determinacy is brute, or some principle that is not purely structural grounds it. Closing the brute option is the work of I3’s anti-brute commitment (BA7); I3 states the division explicitly.

Note. This is a *distinct* problem from I2, not a restatement. I2 shows structure insufficient for appearing *at all*. I3 addresses what determines *which* appearing occurs, given that something must. To frame the relationship precisely: I2 answered “What makes appearing different from structure?” I3 asks “What makes *this* appearing actual rather than another?” These are related but distinct explanatory demands.

A physicalist might accept I2 (a non-structural ingredient is needed—one or many) while claiming that ingredient is deterministic once present. But this doesn’t resolve the question—it relocates it. What makes it determinate in *this* way rather than another? If structure doesn’t determine it, what does?

Inevitability 3 addresses this: **Determinacy requires a principle of selection.** If experiential determinacy has a ground at all, that ground is not purely structural; that it has one is I3’s central commitment (BA7).

4.9 Summary

Aspect	Status
Logical form	Valid reductio from FP (ExpOcc) + I1 + BA5a–b + Axioms 7–10
Assumption load	BA5a regiments “structural”; BA5b constrains what entailment can introduce; the No
Axiom 8 defense	Constitutive (not merely epistemic) first-personality argued
Axiom 10 defense	Applies to logical entailment; Type-B metaphysical move addressed
Relation to I1	Direct development—asks what <i>kind</i> of difference
Zombie usage	Logical point about entailment, not metaphysical claim
Explanatory asymmetry	Supporting consideration alongside the zombie point, not an independent derivation
Type-B physicalism	Addressed in §4.2.2 and the Type-B Physicalism objection
Illusionism	Horn dilemma blocks both escape routes
Functionalism	Type-B retreat concedes I2’s point
Strong IIT	Φ is structural; “why does high Φ feel like something?” unanswered
Weak IIT	declines the constitution question; no ingredient affirmed
Russellian monism	Explicitly compatible—accepts I2’s conclusion
Question-begging	Addressed—BA5a regiments structuralist’s own usage
Scope clarification	Rules out reductive structuralism, not all physicalism
Bridge to I3	Determinacy as distinct problem, not I2 restated

5 Inevitability 3: Determinacy Requires a Principle of Selection

Inevitability 3 (Determinacy Requires a Principle of Selection). *Experience is determinate—it is this experience rather than another—and determinacy requires a principle by which one possibility becomes actual.*

What this chapter must establish. The statement above is this chapter’s obligation. Its load-bearing elements: that experience is *determinate* (*this* rather than another); that determinacy *requires* a principle—where the categorical “requires” is carried by BA7, this chapter’s central declared commitment, and what survives BA7’s rejection is stated in The Status of BA7 below; and that the principle is one *by which one possibility becomes actual*—discharged by the grounding relation and determinacy jointly, with no possibility-space device (see the No Possibility Space response).

Note: This inevitability addresses a distinct question from I2. I2 established that appearing cannot reduce to structure alone. I3 asks: given that experience occurs and is not purely structural, what accounts for its *determinacy*—the fact that it is *this* rather than another?

Clarification of scope: I3 does not specify what the selection principle *is*—whether it is a fundamental law, an intrinsic property of reality, or something else entirely. It establishes only that such a principle must exist and that no purely structural ground suffices. The nature of this principle is a further question.

5.1 Assumptions

This inevitability builds from the Foundational Premise and I2, and adds two background assumptions and one point-of-use commitment (the Ground-account link, declared before the Determination Trilemma).

5.1.1 From Prior Derivations

ExpOcc: There is at least one instance of appearing. [FP]

I1: Experience makes an ontological difference—reality-with-experience $\neq$ reality-without-experience. (*Carried transitively; this chapter’s derivation cites I2, not I1 directly.*)

I2: The difference experience makes is not purely structural—appearing is not a purely structural fact, and no accumulation of structural facts logically entails it. Formally: $\neg \text{Struct}(\text{App}) \wedge \neg \text{LogEntails}(\text{StructFacts}, \text{App})$.

5.1.2 Background Assumptions

Background Assumption 6 (Determinacy of appearing). Experience, when it occurs, occurs with determinate character. There is something specific it is like—not a vague potential for experience, not a superposition of possibilities, but *this* particular appearing.

Clarification: BA6 is phenomenologically evident. When you experience pain, you experience *this* pain—with this intensity, this quality, this character. The experience is not indeterminate between being intense and mild, or between being sharp and dull. It has a specific character.

What BA6 does *not* claim:

- That experience is fully determinate in every respect (there may be vagueness at the margins)
- That we have complete introspective access to this determinacy
- That determinacy is absolute precision (continuous properties may lack infinite precision)

What BA6 *does* claim:

- Experience has sufficient determinacy to be *this* experience rather than another
- The pain you feel is not simultaneously the pleasure you don't feel
- Appearing is not a formless potentiality but has definite character

Scope note. BA6 applies only when an experiential token *exists*; it is silent about temporal gaps or the absence of experience. The claim is not that experience is always occurring, but that *when* it occurs, it is determinate.

Defense. Consider the alternative: experience that is genuinely indeterminate—neither this character nor that, but a superposition of incompatible possibilities. This is not what we find. Your current visual experience is of *these* colors, not a superposition of all possible colors. Your current thought has *this* content, not all possible contents simultaneously. Even phenomenal vagueness (fuzzy boundaries, unclear introspection) is determinate vagueness—it is determinately vague rather than determinately sharp. BA6 captures this minimal but undeniable feature of experience.

Background Assumption 7 (Grounding of experiential determinacy). For any experiential fact other than the bare occurrence of experience, there exists something in virtue of which it holds rather than otherwise.

Clarification: BA7 is the anti-brute commitment.¹⁴ It asserts that experiential determinacy is not a brute fact but has an ontological ground. BA7 is defended in §5.2.3 below.

Dialectical note: A reader who has accepted I2 faces a constrained choice regarding experiential determinacy. I2's result, extended by the Ground-account link below, is that structure alone cannot ground appearing. Experience is determinate (BA6). So: what grounds this determinacy? Only two options remain:

- **Option A (Reject BA7):** Experiential determinacy is brute—there is no ground for why *this* experience occurs rather than *that*.
- **Option B (Accept BA7):** Experiential determinacy has a ground. That the ground is not purely structural is what this chapter derives; BA7 itself asserts only that a ground exists. The ground is what I3 calls the selection principle.

Option A does not offer a competing theory; it exits the explanatory project entirely. Structure alone cannot ground experience (per I2 with the Ground-account link), and nothing else explains it either. This is not mere epistemic humility (“we don't know the ground”); it is the metaphysical claim that there is no ground to know—and therefore nothing to theorize about.

¹⁴By “brute” we distinguish three categories: (1) *Primitive/Foundation*: The ground floor of explanation. The question “why?” can be asked but bottoms out in something constitutive of explanation itself (e.g., logical coherence, the existence of appearing). You need these to ask questions at all. (2) *Brute fact*: The question “why?” makes sense and has no structural reason to bottom out, but is simply refused. “Why *this* experience rather than *that*?” “It just is.” This is what BA7 rules out. (3) *Pseudo-explanation*: A label dressed as an answer. The question “why?” is met with a phrase that affirms no ground (e.g., “God does it,” “it’s a fundamental law” offered as a refusal of the question rather than as a posit). If “in virtue of what?” can still be coherently pressed because nothing has been put forward to answer it, no explanation has been given. This also violates BA7. A law posited as a real, primitive ground is a different move: it affirms a ground and is assessed as one—and its own specificity owes a ground in turn unless it lies at category (1)’s floor, a status owed argument against that category’s test, not claimed by designation.

BA7 names Option B. The defense below (§5.2.3) articulates why Option A is coherent to hold yet not a competing philosophical position: it is an abandonment of philosophy’s explanatory task, not a rival execution of it.

What BA7 does *not* claim:

- That we can know or specify the ground (epistemic access not guaranteed)
- That the ground is the same for all experiences (may vary)
- That the ground is a “thing” rather than a feature, law, or aspect of reality

What BA7 *does* claim:

- Experiential specificity (*this* rather than *that*) has an ontological basis
- The basis is not nothing—there is a fact of the matter about what grounds determinacy
- Brute experiential determinacy is ruled out

Defense. BA7 is defended below in §5.2.3.

5.1.3 Definition of Key Terms

- **Determinate:** Having a specific character such that the experience is *this* rather than another. Not indeterminate among incompatible possibilities.
- **Possibility space:** The range of experiences that could (logically, metaphysically) occur. This is a conceptual device for articulating determinacy, not a commitment to modal realism.
- **Actualization:** Among the many ways experience could be, one *is*—an experience with this character obtains rather than any alternative. The term names this obtaining; it carries no commitment to temporal becoming or to any theory of time.
- **Selection principle:** Whatever it is in virtue of which one possibility becomes actual rather than another. This is not necessarily a causal principle (causation may be structural); it is an ontological ground.

5.2 Defense of Key Principles

Before the derivation, three principles require explicit defense.

5.2.1 The Critical Bridge: From I2 to I3

I2 established that structure cannot *constitute* or *logically entail* appearing. But a critic might object: “I grant I2. Structure doesn’t constitute experience. But structure might still *determine* *which* experience occurs via psychophysical laws. Determination isn’t constitution.”

This objection represents physicalism’s last escape route and must be addressed directly.

Lemma (3.1 — Extension of I2). *If a set Σ of exclusively structural facts does not entail App, then Σ does not entail any proposition of the form “App $\wedge$ App has character C.”*

Proof: Since $(p \wedge q) \models p$, $\Sigma \models (p \wedge q)$ would give $\Sigma \models p$; contraposing, if $\Sigma \not\models p$, then $\Sigma \not\models (p \wedge q)$ for any q . The antecedent holds for every such Σ : any set of exclusively structural facts satisfies $\Sigma \subseteq \text{StructFacts}$ (the set of all structural facts, I2), and entailment is monotonic— $\Sigma \models \varphi$ and $\Sigma \subseteq \Sigma'$ give $\Sigma' \models \varphi$ —so $\text{StructFacts} \not\models \text{App}$ (I2) gives $\Sigma \not\models \text{App}$. It follows that $\Sigma \not\models (\text{App} \wedge \text{App has character } C)$ for any specific character C . $\square$

This establishes that structure cannot *logically* determine which experience. But what about *nomological* determination?

Ground–account link. A complete ground underwrites a complete account: to completely ground a fact is to supply that in virtue of which it obtains, which a complete account of it must cite. Declared here at point of use; with I2’s Note on 3P Closure it yields the grounds-to-account crossing—a wholly structural complete ground would underwrite a wholly structural complete account, which I2 forbids. Anticipated at the Dialectical note above; consumed at the Trilemma’s Horn 1, the defense of Axiom 13, the Supervenience, Psychophysical Laws, and No Possibility Space responses, the anti-bruteness defense (§5.2.3), the Status of BA7, the Monist response, and Lemma 3.4. Rejecting it costs every listed consumption—the crossing has no other license; a rejecting reader exits here, per the replacement rule.

The Determination Trilemma. Can structural facts determine which non-structural experience occurs?

(A) **Logical determination:** Structure S logically entails experience E .

- Already ruled out by I2 and Lemma 3.1.

(B) **Nomological determination:** A law of nature connects S to E .

- Such a law would have the form: “When S , then E .”
- What grounds this law? Three options:

Horn 1: Grounded in structural facts. Then there is some structural property of S that explains *why* S yields E rather than E' . But this requires a complete structural specification of why E rather than E' —a structural account sufficient on its own for experiential character (the grounds-to-account crossing per the Ground–account link with the Note on 3P Closure, I2). This violates I2.

Horn 2: Brute law (holds for no reason). The law $S \rightarrow E$ is a primitive fact with no further ground. But this brute correlation *is* a principle, not purely structural, that determines which experience. The law itself is not purely structural: it essentially involves E , which is not purely structural, and a complete account of the law must specify E (Note on 3P Closure, I2). This concedes I3. Offered as the answer to what determines, the law is functioning as a ground—a real, primitive ground has been posited; kept as a mere named regularity, it answers nothing, which is the covariance position that fails (see the Supervenience response).

Horn 3: Grounded in non-structural facts. Something non-structural makes it the case that S yields E . This *is* the selection principle. This concedes I3.

(C) **No determination:** Which experience occurs is random/brute.

- This violates BA7 (defended below).

Conclusion. Any coherent account of how structure relates to determinate experience takes one of the three positions above or holds that structure metaphysically necessitates experience without law or logical entailment—and each closes. (A) Logical determination is closed by I2 with Lemma 3.1. (B) Nomological determination closes on every reading of what grounds the law: grounded structurally, it violates I2 (Horn 1); taken as a brute law functioning as a ground, it posits a primitive ground that is not purely structural, conceding I3 (Horn 2); kept as brute mere regularity, it answers nothing—the covariance position that fails (Horn 2); grounded non-structurally, it is the selection principle itself, conceding I3 (Horn 3). The metaphysical-necessitation reading closes by I2’s own

crossing: the necessitating relation is itself not purely structural, hence a ground that concedes I3 (I2, From logical to metaphysical). (C) No determination violates BA7; its closure completes at the defense below. Once each closure is in hand, there is no middle path.

Lemma (3.1b — Extension of I2, first-personality). *For every token instance of appearing, the fact that it is an instance of appearing is constitutively first-personal: $\forall e (E(e) \rightarrow 1P(E(e)))$.*

Proof: By Axiom 8 [I2], $1P(\text{App})$, and by I2’s defense of that axiom (I2, §4.2.1), perspective is constitutive of what appearing *is*—a claim about appearing as a kind. Any token e satisfying $E(e)$ is, by E ’s own definition, an instance of that kind. By the Note on 3P Closure (I2), a complete account of the fact $E(e)$ states what that fact essentially involves: an instance of appearing, whose specification requires the perspective it is constituted by. Hence $1P(E(e))$ by 1P’s definition. $\square$ Axiom 11 below needs no such extension: BA6 is already occurrence-general (“when it occurs, occurs with determinate character”), so its token form is direct. The distribution move above is required only for first-personality, which I2 states at the type level.

5.2.2 Defense of Axiom 13: Why Structure Alone Cannot Select

A sophisticated critic might press: “Even granting I2, why can’t structural facts *select among* non-structural options? Selection isn’t constitution.”

Consider what selection requires. If structural fact S selects experience E (rather than E')— E not purely structural, per I2—there must be some relation R such that $R(S, E)$ holds. What makes R hold for *this* E rather than E' ?

The answer must cite either:

(a) Properties of S

- But S ’s properties are entirely structural (by definition of S).
- E ’s character is not purely structural (by I2, carried to tokens via Lemma 3.1b).
- For S ’s properties to explain why E rather than E' , there must be some structural feature of S that connects to E ’s not-purely-structural character.
- But E ’s character has no complete structural specification (I2), and an account of why- E must specify what is selected, not merely denote it (Note on 3P Closure, I2).
- Therefore: no structural property of S can by itself be *why* it selects E (Ground-account link: a wholly structural complete ground would underwrite a wholly structural complete account).
- If E and E' differ in some structural respect, S may select between them on that respect; but the token’s character is not exhausted by its structural aspects (I2, via Lemma 3.1b), and what selects the not-purely-structural remainder is exactly the question left standing—the horn re-arises there.

(b) Properties of E

- Then E ’s own properties determine the selection.
- E is not purely structural (I2, via Lemma 3.1b); and the determining principle here essentially involves E —a complete account of it must specify E (Note on 3P Closure, I2)—so it is not purely structural.
- Therefore: this *is* determination by what is not purely structural—concedes I3.

(c) Something else (neither S nor E)

- This third factor is what determines the selection.
- It cannot be purely structural (or we return to option a).
- Therefore: this *is* the selection principle, and it is not purely structural—concedes I3.

Conclusion. Structural facts cannot determine which experience occurs—experience being not purely structural—without invoking a principle that is not purely structural. Axiom 13 is justified.

5.2.3 The Anti-Brute Commitment (Defense of BA7)

This is the central metaphysical commitment of I3. BA7 asserts that experiential determinacy has a ground—it is not brute.

BA7 is not a logical consequence of prior derivations. However, neither is it one metaphysical stance among many. Within its domain—experiential facts beyond the bare occurrence of experience—it is the commitment that explanatory inquiry is possible: that ‘why *this* rather than *that*?’ is a legitimate question admitting an answer. A critic may reject BA7, but in doing so they exit the explanatory project rather than offer a competing explanation. Brute experiential facts are not an alternative theory; they are the refusal to theorize. The costs of this refusal are severe:

(1) **Explanatory cost:** Brute determinacy means experience is *this* rather than *that* for no reason at all. This is not explanation but abdication of explanation. The structuralist program was motivated by the desire to *explain* mental phenomena—accepting brute experiential facts abandons that ambition.

(2) **Ontological cost:** Consider two worlds identical in all structural facts and all laws, differing only in which determinate experience occurs. This is the paradigm of a “further fact” that structuralists find objectionable. Brute determinacy commits you to exactly this metaphysical extravagance—worlds differing only in brute experiential specifics with no ground for the difference.

(3) **Theoretical cost:** Brute determinacy is selective skepticism. The physicalist who accepts brute psychophysical correlations has abandoned the core motivation for physicalism: that mental facts are not fundamental dangles but grounded in the physical. And the bruteness cannot be assimilated to the tolerable kind: BA7 exempts bare occurrence (footnote category 1), where explanation legitimately bottoms out; brute *character*—*This* rather than *that*, with the contrast granted—is category-2 bruteness, the refusal of a well-posed question. That selectivity is the instability.

Engagement with Humean Supervenience. A sophisticated objector might invoke David Lewis’s Humean supervenience: the view that all facts supervene on the mosaic of local, particular matters of fact, with fundamental laws being merely the best systematization of regularities.¹⁵ On this view, brute regularities are acceptable at the fundamental level. Why can’t experiential determinacy be another such regularity?

The Humean move fails for experiential determinacy because of a crucial disanalogy. Humean regularities concern *patterns among existents*—this billiard ball moving thus when struck so. The regularities are relations among things whose existence and character are independently specifiable. But experiential determinacy concerns *which character obtains* for a given experiential token. This is not a pattern among independently specifiable existents; it is the specification of a particular existent’s nature.

Consider: a Humean can accept that it is brute that electrons have charge -1 rather than $+1$ (a regularity in the mosaic). But even for the Humean, it is not brute that *this particular electron* is negatively charged—that follows from its being an electron. The determinacy of tokens

¹⁵Lewis, D. (1986). *Philosophical Papers, Volume II*. Oxford University Press. See Introduction, pp. ix–xi, for the canonical statement of Humean supervenience.

follows from type-membership plus type-character. Brute experiential determinacy would require that a token's character is fixed neither by type-membership nor by any other ground. This is not Humean regularity but radical particularity—each experiential token being *this* rather than *that* for no reason whatsoever.

The asymmetry with physical brute facts. A critic might respond: “Physical brute facts exist too—fundamental constants, initial conditions. I accept I2; I accept that structure can't ground experience. And I'm simply accepting that experiential determinacy is brute, just as physical constants are brute. Why is experiential bruteness worse?”

This “brute and proud” Humean position deserves direct engagement. The asymmetry is fundamental:

Physical brute facts concern *what exists*—these constants, these initial conditions, this mosaic of local matters. They are specifiable in third-person structural terms. The Humean can describe the mosaic of local matters of fact without phenomenal vocabulary. The bruteness is about which structure obtains.

Experiential brute facts would concern something categorically different: *how existence appears to someone*. They involve the *for*-relation that I2 established as constitutively first-personal and not purely structural. Physical brute facts are brute facts about structure. Experiential brute facts would be brute facts about a relation (the *for*-relation) that cannot be exhaustively characterized structurally.

This is not parallel to accepting brute physical constants. It is accepting brute facts about a domain that resists the very vocabulary in which we state what the facts are about. The Humean who says “it's just brute that this neural pattern appears as red to this subject” is not extending Humean humility to a new domain; they are claiming brute facts involving a relation (appearing-to-a-subject) that they cannot characterize in their preferred structural terms.

The post-I2 brutalist about experience is in an especially awkward position. They've accepted that structure alone cannot ground appearing (per I2 with the Ground-account link). Now they're claiming that nothing *else* explains appearing either—experiential determinacy just is, for no reason. This isn't merely unexplained regularity (the Humean mosaic); it's unexplained facts about something (the *for*-relation) that we can't even characterize structurally. The bruteness is compounded: we can't describe *what* the brute facts are about except by invoking the very phenomenal vocabulary that resists structural analysis.

Brute existence versus brute selection. A further distinction strengthens the case for BA7. Many metaphysicians accept brute *existence*—that it is brute that anything exists at all, or that these fundamental entities exist rather than others. But brute existence concerns *whether* something exists. Brute experiential determinacy concerns *what character* an existent has among incompatible alternatives.

These are different explanatory demands. “Why does anything exist?” may have no answer (brute existence). But “Why does this experience have *this* character rather than *that*?” presupposes something exists and asks what determines its specification. Brute specification among determinates is stranger than brute existence. Even those who accept brute existence typically accept that existents have their characters for reasons—essences, laws, or constitutive grounds. BA7 requires only that experiential determinacy not be exempt from this near-universal pattern.

The quantum analogy. One might object: quantum mechanics involves brute selection—which outcome occurs upon measurement is fundamentally indeterministic. Why can't experiential de-

terminacy be similarly brute?

Two responses. First, quantum indeterminacy concerns which outcome from a *probability distribution* obtains. The distribution itself is determined by the wave function; only the specific actualization is “brute.” Experiential determinacy has no analogous probability distribution over phenomenal characters—there is no “wave function of qualia” assigning weights to possible experiences prior to actualization.

Second, even granting quantum brute selection, it occurs within a framework of structural constraints (the Schrödinger equation, conservation laws). The brute element is which outcome, not whether the outcome has determinate character. If experiential determinacy were brute in the quantum sense, there would still need to be *some* principle constraining the space of possible experiences and their relative “weights.” That constraining principle would be the selection principle by another name.

Positive entitlement for BA7. Beyond the costs of rejection, there is a positive reason to accept BA7. If determinacy were brute, then the *obtaining* of a specific experiential token would be ungrounded. But obtaining is maximally specific—it is the most determinate way the world is at that moment. Ungrounded maximal specificity is metaphysically unprecedented: even fundamental particles have identity conditions (mass, charge, spin). Hence every such fact *prima facie* requires a ground; BA7 is the minimal commitment answering that requirement—that such a ground exists—for experiential facts other than the bare occurrence of experience.¹⁶

The dilemma for the critic. Either accept brute determinacy (committing to unexplained further facts and abandoning explanatory ambitions), or accept a selection principle (conceding I3).

I3 does not *prove* brute determinacy impossible. It shows that rejecting BA7 commits one to a metaphysics that is both more extravagant than Humean regularity and more radical than quantum indeterminacy. The cost of denial exceeds the cost of acceptance.

5.3 Natural-Language Derivation

Goal: Show that experience’s determinacy requires a principle of selection that is not purely structural.

5.3.1 Step 1: Experience occurs with determinate character

From BA6: When experience occurs, it is *this* experience—with this specific character, this particular quality. Not indeterminate, not a superposition, but definite.

You do not experience a blur of all possible experiences simultaneously. You experience *this*—these colors, these sounds, these thoughts, this pain. Even if edges are fuzzy, the fuzziness is determinate (it is fuzzy in *this* way, not all possible ways).

¹⁶This reasoning extends the principle of sufficient reason (PSR) in its restricted form: not that every fact whatsoever requires explanation, but that experiential facts other than bare occurrence require grounding. For defense of requiring explanations for contingent facts, see Della Rocca, M. (2010). PSR. *Philosophers’ Imprint*, 10(7), 1–13; Dasgupta, S. (2016). Metaphysical Rationalism. *Noûs*, 50(2), 379–418. DOI: 10.1111/nous.12082; and for recent defense against Humean objections, Amijee, F. (2021). Explaining Contingent Facts. *Philosophical Studies*, 178(4), 1163–1181. DOI: 10.1007/s11098-020-01487-y

5.3.2 Step 2: Determinacy requires a ground

From BA7: Experiential determinacy is not brute. There is something in virtue of which *this* experience occurs rather than an incompatible alternative. This ground exists—the only question is what it is.

5.3.3 Step 3: Structure alone cannot provide the ground

Per the Determination Trilemma:

- Logical determination is ruled out by I2 + Lemma 3.1
- Nomological determination either fails (Horn 1; Horn 2 on its mere-regularity reading, which answers nothing) or concedes a principle that is not purely structural (Horn 2 when the law functions as a ground; Horn 3)

Per the defense of Axiom 13: If structural fact S selects non-structural experience E , what makes $R(S, E)$ hold? The answer must cite properties of S (but S 's properties are structural, and E 's character is not exhausted by structural aspects—no bridge), properties of E (then E 's properties determine selection—determination by what is not purely structural), or something else (this *is* the selection principle). Structure cannot select—where *selecting* is being the complete ground, per the Complete-versus-partial-grounding note in the Definitions of the Symbolic Formalization below.

5.3.4 Step 4: A principle that is not purely structural is required

Combining Steps 2 and 3:

- Determinacy requires a ground (BA7)
- Structure alone cannot provide this ground (Step 3)
- Something must provide this ground (experience *is* determinate)
- Therefore, the ground includes something non-structural

The ground—not purely structural, possibly a blend—is what we call the *principle of selection*.

5.3.5 Step 5: Conclusion

Experience is determinate (BA6). Determinacy requires ground (BA7). Structure alone cannot provide it (I2 extended via Lemma 3.1 and Determination Trilemma). Therefore, a principle of selection that is not purely structural must exist.

5.4 Symbolic Formalization

5.4.1 Definitions

$\text{App} \triangleq$ “Appearing occurs”	[from I2; the proposition FP writes
$E(x) \triangleq$ “ x is an instance of appearing”	[from FP]
$\text{Struct}(x) \triangleq$ “ x is, in its entirety, structural (see I2 for full definition)”	[from I2]
$\text{StructFacts} \triangleq \{x : \text{Struct}(x)\}$	[from I2]
$\text{LogEntails}(\Sigma, \varphi) \triangleq$ “The set Σ logically entails φ ”	[from I2]
$1P(x) \triangleq$ “ x is constitutively first-personal”	[from I2]
$3P(x) \triangleq$ “ x is exhaustively third-person describable”	[from I2]
$\text{Det}(x) \triangleq$ “ x is determinate (is <i>this</i> rather than another)”	
$\mathcal{P} \triangleq$ Possibility space for experience	[possible appearings]
$\text{Actual}(\varphi) \triangleq$ “Fact φ actually obtains; for $\varphi = E(e)$, this is guaranteed by E ’s own definition—see note below”	
$\text{Selects}(X, \varphi) \triangleq$ “ X is the ground in virtue of which φ obtains”	
$\text{StructSelects}(\varphi) \triangleq \exists S (\text{Struct}(S) \wedge \text{Selects}(S, \varphi))$	
$\text{SelPrin} \triangleq \forall e (E(e) \rightarrow \exists X (\neg \text{Struct}(X) \wedge \text{Selects}(X, E(e))))$	

Note on SelPrin’s antecedent. $E(e)$ alone suffices. $\text{Det}(E(e))$, $\text{Actual}(E(e))$, and $\neg \text{Struct}(E(e))$ are not additional conditions: Axiom 11 guarantees the first for every token, E ’s own definition guarantees the second (see the Note on Actual and E below), and Lemma 3.1b with I2’s axioms delivers the third (derivation steps 8–10). They appear in Axioms 12 and 13 because those axioms state their own conditions explicitly; SelPrin reports what the derivation establishes, which is the stronger claim with the weaker antecedent.

Note on Actual and E. For facts of the form $E(e)$, $\text{Actual}(E(e))$ is not an independent condition. $E(x) \triangleq$ “ x is an instance of appearing” [from FP] is already assertoric—FP, I1, and I2 never admit a merely possible, not-yet-actualized instance of E . The possibility-space device $\mathcal{P}$ above is conceptual scaffolding for this chapter’s motivating discussion; it is defined once and used in no axiom or derivation step. Consequently $E(e) \rightarrow \text{Actual}(E(e))$ holds directly from E ’s own definition, and the derivation below states this as a derived line, not an assumed one. This note is scoped to facts of the form $E(e)$ only; Actual may carry independent content elsewhere in the manuscript where its argument is not of this form.

Note on grounding. The relation $\text{Selects}(X, \varphi)$ invokes the notion of metaphysical grounding—a contested topic in contemporary metaphysics. We do not commit to a particular theory of grounding. We take grounding to be: (i) irreflexive—nothing grounds itself; (ii) asymmetric—if X grounds Y , then Y does not ground X ; and (iii) non-brute where BA7 applies—grounding relations whose relata include experiential facts have explanations (BA7); no stand is taken on grounding relations generally. These are what the chapter commits to *about* grounding; the numbered derivation steps below invoke none of the three, using only that a ground exists and that no structural fact suffices as one.

Complete versus partial grounding. $\text{Selects}(X, \varphi)$ denotes *complete* grounding: X is that in virtue of which φ obtains, not merely one contributing factor among others. The complete reading is Selects’ own definitional role—what “a principle by which one possibility becomes actual” demands—not BA7’s bare text, which asserts only that a ground exists. This reading is what the derivation requires, and it fixes the force of Axiom 13. To deny $\text{StructSelects}(\varphi)$ is to deny that any structural fact completely grounds φ —and since a conjunction of structural facts is itself a structural fact (BA5a’s gloss, I2: a conjunction of exhaustively third-person-describable facts is itself so describable), the singular quantifier covers structural pluralities through their conjunction: the denial is that structural facts, singly or jointly, suffice. It is not to deny that structural facts figure in the grounding at all. I2 forbids structure *alone*, and the formalism should be read accordingly. A ground that combines structural and non-structural elements is permitted throughout, and is explicitly allowed at Lemma 3.4; what is excluded is a ground that is exhaustively structural.

5.4.2 Axioms

Axiom 11 (Determinacy of appearing (from BA6)).

$$\forall e (E(e) \rightarrow \text{Det}(E(e)))$$

Whenever an instance of appearing occurs, it is determinate—it is this rather than another.

Axiom 12 (Determinacy requires ground (from BA7)).

$$\forall e (E(e) \wedge \text{Det}(E(e)) \wedge \text{Actual}(E(e)) \rightarrow \exists X \text{Selects}(X, E(e)))$$

If a token instance of appearing is determinate and actual, something grounds its occurrence. [This applies BA7 at token instances; BA7 itself ranges over experiential facts generally—see the Sel-Prin/BA7 division note under the Conclusion.]

Axiom 13 (Not-purely-structural token facts have no wholly structural ground).

$$\forall e ((E(e) \wedge \neg \text{Struct}(E(e)) \wedge \text{Actual}(E(e))) \rightarrow \neg \text{StructSelects}(E(e)))$$

A token instance of appearing that is not purely structural cannot be wholly structurally grounded. The non-structurality condition is stated because the defense reasons from it. [Justified by the Determination Trilemma and §5.2.2, both consuming the Ground-account link with I2’s Note on 3P Closure.]

5.4.3 Derivation

1. App [from FP — establishes non-vacuousness for the Corollary below; not used in the argument for steps 4–16]
2. $\forall e (E(e) \rightarrow \text{Det}(E(e)))$ [Axiom 11]
3. $\forall e (E(e) \rightarrow 1P(E(e)))$ [Lemma 3.1b]
4. Let e^* be arbitrary; *assume* $E(e^*)$ [hypothesis, discharged at 16]
5. $\varphi^* \triangleq E(e^*)$
6. $\text{Det}(\varphi^*)$ [from 2, 4]
7. $\text{Actual}(\varphi^*)$ [from 4, E ’s own definition — see the Note on Actual and E above]
8. $1P(\varphi^*)$ [from 3, 4]
9. $\neg 3P(\varphi^*)$ [from 8, Axiom 9 [I2]]
10. $\neg \text{Struct}(\varphi^*)$ [from 9, Axiom 7 [I2], contrapositive]

11. $\neg \text{Struct}(\varphi^*) \wedge \text{Actual}(\varphi^*)$ [from 10, 7]
12. $\exists X \text{ Selects}(X, \varphi^*)$ [from 4, 6, 7, Axiom 12]
13. $\neg \text{StructSelects}(\varphi^*)$ [from 4, 11, Axiom 13]
14. $\exists X \text{ Selects}(X, \varphi^*) \wedge \neg \exists S (\text{Struct}(S) \wedge \text{Selects}(S, \varphi^*))$ [from 12, 13]
15. $\exists X (\neg \text{Struct}(X) \wedge \text{Selects}(X, \varphi^*))$ [from 14, logic: since some X grounds φ^* and no structural fact suffices, the ground must include a non-structural element]
16. Discharge (4–15): $E(e^*) \rightarrow \exists X (\neg \text{Struct}(X) \wedge \text{Selects}(X, \varphi^*))$ [conditional proof]
17. Since e^* was arbitrary: $\forall e (E(e) \rightarrow \exists X (\neg \text{Struct}(X) \wedge \text{Selects}(X, E(e))))$ [universal generalization, 16]

Step 17 is SelPrin, stated at the strength the derivation proves: $E(e)$ alone in the antecedent. Det and Actual were derived along the way (steps 6, 7) rather than assumed, so neither needs to be carried as a condition; the Note on SelPrin’s antecedent above records why.

5.4.4 Conclusion

SelPrin, i.e. $\forall e (E(e) \rightarrow \exists X (\neg \text{Struct}(X) \wedge \text{Selects}(X, E(e))))$

For any token instance of appearing, a ground exists for it that is not purely structural (SelPrin). Determinacy and actuality are not extra conditions on this—every token of appearing is determinate (Axiom 11) and actual (E ’s own definition), so the antecedent is $E(e)$ alone.

Corollary (given FP):

$$\exists e (E(e) \wedge \exists X (\neg \text{Struct}(X) \wedge \text{Selects}(X, E(e))))$$

FP guarantees $\exists e E(e)$, which is SelPrin’s whole antecedent. SelPrin therefore instantiates at FP’s own witness, not merely at a hypothetical one: a ground that is not purely structural actually exists, not only would exist if a token occurred.

Corollary (token non-structurality):

$$\forall e (E(e) \rightarrow \neg \text{Struct}(E(e)))$$

By discharging the step-4 hypothesis at step 10 and generalizing: I2’s $\neg \text{Struct}(\text{App})$ extended to every token, via Lemma 3.1b and I2’s axioms. Stated because it is proved; step 13 consumes it inside the main derivation.

Note on SelPrin. The formulation allows that different experiential facts may have different grounds. Whether these grounds unify into a single principle or remain plural is a further question—raised and constrained, not settled, in Unified or plural (Scope and Limits below). Nothing in SelPrin’s antecedent or consequent requires X to be a single, primitive, or fundamental entity; see the Scope and Limits section below.

What SelPrin covers, and what BA7 covers. SelPrin ranges over *token instances of appearing*, $E(e)$. That is what this chapter’s derivation establishes: Lemma 3.1b delivers first-personality for token occurrences, and the route to Axiom 13’s antecedent—and so to the ground’s non-structural remainder—runs through it (steps 8–10, consumed at step 13). SelPrin does not range over experiential facts in general—identity across time, boundedness, or the distribution of experience are experiential facts but are not token occurrences of appearing, and I3 proves nothing unconditional about them (the Bridge’s boundary results are conditional).

The general commitment is BA7, which ranges over any experiential fact other than the bare occurrence of experience. Later chapters that need a ground for a non-token experiential fact—I6

for experiential identity, for instance—draw on BA7—in I6’s case via I5’s anti-brute axiom—not on SelPrin. **The division is deliberate: SelPrin is what I3 proves; BA7 is what I3 assumes.** A restatement of SelPrin as covering “each actual experiential fact” overstates it.

Discharges Inevitability 3. *Experience is determinate—it is this experience rather than another:* Axiom 11 (from BA6), with Det defined as *this* rather than another. *Determinacy requires a principle:* SelPrin—the requirement’s categorical force is BA7’s (Axiom 12), and what survives BA7’s rejection is the disjunction stated in The Status of BA7. *By which one possibility becomes actual:* Selects—the ground in virtue of which the token fact obtains—together with Det; no possibility-space device is used (see the No Possibility Space response), and $\mathcal{P}$ is scaffolding only. SelPrin is stronger than the statement on the principle conjunct: the ground is additionally derived to be not purely structural ($\neg\text{Struct}(X)$). That surplus is deliberate and consumed—by the evaluation criterion and the Bridge to I4—and the statement’s requirement clause follows from SelPrin a fortiori.

Scope note on ontological parsimony. SelPrin does not multiply entities beyond necessity. It claims only that whatever grounds experiential determinacy is not purely structural; whether those grounds unify into one principle, several, or many is a further question (see Unified or plural, Scope and Limits below). The number of primitives is constrained by whatever theory of grounds turns out to be most parsimonious after the boundedness question is resolved.

5.5 Objections Addressed

Objection (Brute Determination). Maybe which experience occurs is just a brute fact. Experience E occurs at time t in brain B —full stop. No principle is needed; it’s just how things are.

Response. This objection rejects BA7. The costs of this rejection are articulated in §5.2.3:

1. **Explanatory cost:** Brute determinacy abandons explanation for experiential specifics
2. **Ontological cost:** Commits to worlds differing only in brute experiential facts
3. **Theoretical cost:** Undermines the motivation for structuralism itself

The brute-fact theorist has not *refuted* I3; they have *rejected* BA7 and accepted its costs. This is a coherent position, but it is precisely the kind of further-fact metaphysics that structuralists sought to avoid.

Objection (Supervenience). Experience supervenes on physical structure. Given the complete physical state, the experiential state is fixed. This *is* determination—structure determines experience via supervenience.

Response. Supervenience is a covariance relation: no change in experience without change in structure. But covariance is not determination. For determination, we need to know *why* physical state P yields experience E rather than E' .

The supervenience theorist faces a trilemma:

Horn 1: Supervenience is grounded in structural facts—there’s a structural reason P yields E . But this requires a complete structural specification of why E rather than E' (the crossing per the Ground-account link with the Note on 3P Closure, I2), which violates I2.

Horn 2: Supervenience is brute— P correlates with E for no reason. Then the “determination” is unexplained. We’ve named a regularity, not grounded it. Moreover, the brute supervenience law itself is not purely structural: it essentially involves E , which is not purely structural, and a complete account of the law must specify E (Note on 3P Closure, I2). So the brute law is itself a *fact* that is not purely structural—but a fact is not a ground. Naming the regularity concedes no principle of selection; that is why pure covariance fails rather than passes (see the evaluation

block). Positing the law *as* a real, primitive ground is a different move entirely: it affirms a ground, which is what this chapter demands.

Horn 3: Supervenience is grounded in non-structural facts. This *is* the selection principle.

Either supervenience fails to explain, or it *is* the selection principle under another name.

Objection (Psychophysical Laws). There are psychophysical laws: “Whenever P , then E .” These laws determine which experience occurs. No further principle is needed.

Response. This is addressed by the Determination Trilemma. What *grounds* these laws?

- If grounded in structural facts $\rightarrow$ requires structural specification of E (Ground-account link with the Note on 3P Closure) $\rightarrow$ violates I2
- If brute $\rightarrow$ the law, offered as the determiner, *is* a ground that is not purely structural $\rightarrow$ concedes I3 (a law kept as a mere label is covariance, which fails)
- If grounded in non-structural facts $\rightarrow$ concedes I3

Moreover—a further demand, beyond this chapter’s criterion—the law “ $P \rightarrow E$ ” is itself a fact. What makes *this* law hold rather than “ $P \rightarrow E'$ ”? The specificity of the law requires a ground.

Psychophysical laws may describe the regularity of experience. They do not explain it without further ontological resources.

Objection (Epiphenomenalism). Experience is determined by physical processes but has no causal power. The actualization is entirely physical; experience is just along for the ride.

Response. I3 is compatible with epiphenomenalism. The selection principle need not give experience causal power.

However, epiphenomenalism does not escape I3’s conclusion. Even on the epiphenomenalist picture, experience occurs and is determinate (*this* experience rather than another). How do physical processes determine *which* experience? Per I2, physical/structural description does not entail experiential facts. The Determination Trilemma applies.

Epiphenomenalism relocates the selection principle; it does not eliminate it.

Objection (No Possibility Space). The “possibility space” is a fiction. There is only what actually occurs. To speak of “other possible experiences” is metaphysical extravagance.

Response. I3 doesn’t require robust modal realism. The argument works even for actualists:

Actualist reformulation: Experience E occurs with specific character C . What makes E have character C ?

Possible answers:

- (a) Brute fact (no ground) $\rightarrow$ Rejects BA7, accepts costs
- (b) Structural ground $\rightarrow$ Violates I2 (via the Ground-account link)
- (c) Ground that is not purely structural $\rightarrow$ Selection principle (I3)

No appeal to “possible experiences” is needed. The explanatory demand concerns actual specificity.

Leibnizian formulation: Experience E occurs. We can coherently describe different experience E' . E is not logically necessary. What sufficient reason grounds E rather than E' ?

This is about explanation, not modal metaphysics.

Objection (Russellian Monism Satisfies I3). Russellian monism says experience is the intrinsic nature of physical structure. The intrinsic nature determines which experience—so the selection principle just *is* the intrinsic nature.

Response. Russellian monism is *compatible* with I3. Indeed, it provides a candidate for the selection principle: intrinsic natures.

I3 does not rule out Russellian monism; it establishes a constraint that Russellian monism happens to satisfy. The Russellian agrees that structural description is insufficient and that something non-structural (intrinsic nature) grounds experiential determinacy.

Whether Russellian monism faces other problems (the combination problem, the palette problem) is addressed in subsequent inevitabilities. I3 establishes the need for a principle that is not purely structural; the Russellian accepts this need.

Objection (Panpsychism’s Challenge). If experience is fundamental and ubiquitous (panpsychism), then determinacy is just a feature of fundamental experience. No selection principle is needed—experiences are just determinate by nature.

Response. Panpsychism also faces I3’s question. Even if experience is fundamental:

- Fundamental experiences are determinate (this micro-experience rather than that)
- What grounds this determinacy?

The panpsychist might say: “Fundamental experiential properties are just determinately what they are.” But this is an *answer* to I3’s question, not an escape from it. The panpsychist is positing that fundamental experiential nature itself serves as the selection principle.

This is compatible with I3. The panpsychist accepts that determinacy has a ground (the nature of fundamental experience) and that this ground is not purely structural. I3’s constraint is satisfied.

Objection (Quantum Indeterminacy). Quantum theories suggest experience might involve superposition at the neural level, making determinacy derivative rather than fundamental. No selection principle is needed beyond quantum mechanics.

Response. Even quantum theories don’t claim experience is *experienced* as superposition. Collapse, branching, or decoherence yields determinate experience for each observer.

The question remains: What grounds the determinacy that appears (whether fundamental or derived)? Even if determinacy emerges from quantum processes, I3 asks: What makes *that* determinacy actual rather than alternatives?

Quantum mechanics might *be* part of the selection principle—it might specify its nature. But this doesn’t eliminate the need for one; it identifies a candidate.

Born-rule clarification: Even if the ground is probabilistic (e.g., objective collapse), the Born rule gives *weights* for outcomes—it does not give a *sufficient reason* for why *this* token actualizes rather than another. Either the actual token is brute (declines BA7), or the collapse *event*—the token actualization itself, as distinct from the collapse *dynamics*, which are structural (the Schrödinger equation and Born rule, as I2’s Orch-*or* entry classifies them)—is or involves a ground that is not purely structural (meets I3). Probabilistic laws are *compatible with* I3; they do not eliminate it.

Objection (Meditative Non-Determinate States). Certain contemplative traditions describe “formless” awareness without specific character—contradicting BA6.

Response. “Formless awareness” is still determinate as *that* experience (formless-awareness) rather than others (formed-awareness, no-awareness). Even the absence of specific content is a determinate experiential mode.

Objection (Vagueness). Experience is vague—no sharp determinacy exists. Where does “red” end and “orange” begin? The determinacy you claim is an artifact of linguistic categorization.

Response. Vagueness is determinate vagueness. The spectrum experience between red and orange is determinately vague-in-that-region, not indeterminate between being sharp-red and sharp-orange.

“Determinate” in BA6 means: sufficient specificity to be *this* experience rather than a completely different one. It doesn’t require infinite precision or sharp boundaries.

Objection (Determinacy as Brute Primitive). Some facts are explanatory bedrock (existence itself, logical laws, mathematical truths). Maybe experiential determinacy is similarly primitive—it needs no further ground.

Response. Distinguish two types of primitives:

Type 1: Categorical primitives (existence, being, identity)

- Maximally general, apply to everything
- Can't be explained because nothing is more fundamental

Type 2: Specific primitives (*this* experience rather than *that*)

- Contentful and specific
- Involve selectivity among alternatives
- Demand: What makes *this* selected?

Experiential determinacy is Type 2. It's not just "experience exists" (that might be primitive per BA7's bare-occurrence exemption), but "experience is *this way*."

Analogy:

- "Something exists" might be primitive
- "This specific thing exists rather than that" requires ground

Similarly:

- "Experience exists" might be primitive (BA7's bare-occurrence exemption)
- "Experience has *this* character" requires ground (I3)

The specificity is what demands explanation.

5.6 Scope and Limits

5.6.1 What This Derivation Establishes

- Experience's determinacy requires a ground
- That ground cannot be purely structural (per I2 extended)
- Therefore, a principle of selection exists that is not purely structural
- This principle grounds which experience actualizes

Formal statement: Given that experience occurs (FP), is not purely structural (I2), and is determinate (BA6), there must exist a principle, not purely structural, in virtue of which one experience rather than another actualizes (BA7 + Axioms 11–13). This principle may be fundamental, emergent, composite, or something else—but it cannot be absent.

5.6.2 What This Derivation Does Not Establish

- **What the selection principle is.** Whether it is an intrinsic nature, a fundamental law, a sui generis property, or something else entirely. I3 is neutral on the nature of the principle.
- **That there is a single principle.** SelPrin allows that different experiential facts may have different grounds, each not purely structural. Whether these unify is constrained, not settled (see Unified or plural below).
- **That the principle is knowable.** Epistemic access to the principle is not guaranteed. I3 is an ontological claim, not an epistemic one.
- **That experience has causal power.** I3 is compatible with epiphenomenalism. The selection principle grounds determinacy; this does not entail that experience causes anything.

- **How the principle relates to structure.** The principle is not purely structural; it may involve or interact with structure in various ways. I3 does not specify the relationship.
- **Whether the principle is unified or fragmented.** Raised and constrained, not settled (see Unified or plural below).

5.6.3 The Status of BA7

BA7 (the anti-brute commitment) is a substantive metaphysical assumption, not a logical consequence of prior derivations. It is the central new commitment of I3.

Critics who accept I2 but reject BA7 must embrace brute determinacy: worlds identical in all structural facts and laws, differing only in which experience occurs, with no ground for this difference.

This is a coherent position. But it is precisely the kind of further-fact metaphysics that structuralists find objectionable. I3 forces a choice: accept a selection principle, or accept brute experiential further facts.

What survives the rejection of BA7. BA7 does four jobs in this chapter's argument: it sources Axiom 12—the ground-existence commitment the selection principle's first conjunct consumes—it closes option (C) of the Determination Trilemma—that nothing determines which experience occurs—it delivers the demarcation's existence in Lemma 3.3 (the twoness of simultaneous tokens is an experiential fact beyond bare occurrence; by BA7 it holds in virtue of something, and that something—prior to the plurality in the order of grounding—is the boundary), and it licenses Lemma 3.5's boundary non-bruteness in the Bridge. Every other route is closed without it. Logical determination (A) is ruled out by I2 and Lemma 3.1. All three horns of nomological determination (B) are closed by I2's results together with its Note on 3P Closure and the Ground-account link: a structurally grounded law requires a complete structural specification of experiential character, which I2 forbids; a brute law is itself not purely structural, since it essentially involves *E* and a complete account of it must specify *E* (the Note); and a non-structurally grounded law concedes the point outright. The defense of Axiom 13 in §5.2.2 likewise appeals to I2's categorical distinction together with the Note on 3P Closure and the Ground-account link.

The chapter therefore establishes two claims of different status:

1. **If experiential determinacy has a ground at all, that ground is not purely structural.** This draws on I2's results together with its Note on 3P Closure and the Ground-account link declared above; the link is the one commitment this chapter adds to the crossing.
2. **Experiential determinacy has a ground.** This is BA7 applied at its determinacy instance; BA7 itself ranges over experiential facts generally.

A reader who rejects BA7 does not thereby acquire a structural account of experiential character. They acquire brute experiential facts. What survives the rejection is a disjunction:

Either experiential determinacy is brute, or its ground is not purely structural. Structure alone is not available on either branch.

This is why the costs catalogued in §5.2.3 are costs rather than a competing account. The structural exit was closed by I2, before BA7 entered the argument at all; rejecting BA7 reopens bruteness, not structuralism.

Unified or plural. SelPrin permits different experiential facts to have different grounds; whether those grounds unify into a single principle is a question this monograph raises and constrains but does not settle—settling it is a theory’s work, not a diagnostic’s. The constraint cuts both ways. A single principle must ground every experiential fact beyond bare occurrence—BA7’s full range, whatever kinds of experiential fact there prove to be—one ground answerable for all of them. Plural grounds must instead account for their own coordination: why *these* grounds attach to *these* facts is a distribution question at the meta-level, and leaving it unanswered reintroduces the bruteness BA7 forbids. Either answer is open; neither is free.

5.7 Implications for Existing Frameworks

5.7.1 Evaluation Criterion

The Actualization Criterion: Any adequate theory of consciousness must affirm, for each token instance of appearing, a ground of its determinacy that is not purely structural.

What this criterion requires:

- Affirm that experiential determinacy has a ground (BA7’s demand)
- Do not hold that structure alone supplies it (excluded by this chapter’s derivation)

What this criterion does *not* require:

- That the ground be single, primitive, or fundamental—the Scope section disclaims this reading
- Specifying the ground’s nature or parameters—I3 is neutral on what the principle *is*
- That the ground exclude structural elements—blended grounds are permitted throughout (Complete-versus-partial-grounding note)

Evaluation categories. The category names are fixed across all chapters; each chapter specialises their content to its own constraint.

- **FAILS:** No ground is affirmed—experiential determinacy is taken as brute—or the affirmed ground is held to be wholly structural. Measured against the criterion, no ground is no ground: the verdict is FAILS. A framework that reaches this posture by declining BA7 has *also* taken that premise’s reject path—verdict and reject path are separate ledgers, both recorded; the cost is stated in §5.2.3.
- **FACES PRESSURE:** A candidate ground is affirmed whose not-purely-structural status is unresolved—the mechanism is present, its category is not settled.
- **PASSES:** A ground that is not purely structural is affirmed, whether or not further specified.

Exit semantics. FAILS and FACES PRESSURE are exits, not grades short of a pass: the chain does not proceed for a framework until a chapter’s criterion is met. Re-entry from FAILS requires affirming a ground that is not wholly structural; re-entry from FACES PRESSURE requires settling the affirmed ground’s category. A framework may instead dispute a premise—BA6, BA7, the Ground-account link (this chapter’s own point-of-use commitment, its consumption sites listed at its declaration), or the complete reading of Selects (the Complete-versus-partial-grounding note), with BA7 the central declared commitment, its rejection-cost stated in §5.2.3—a reject path, assessed separately: reject and stop, or reject and supply a replacement per the Introduction’s replacement rule. A reject path does not lift the verdict: frameworks are measured against the criterion as stated, and premise-rejection is recorded alongside, not instead.

Each chapter's survey covers only its own verdicts; where every framework left the chain is collected in the Conclusion's constraint table.

Frameworks that FAIL at I3:

- **Brute supervenience theories (covariance with no ground):** No ground for the supervenience relation is affirmed, so the verdict is FAILS; a theorist who reaches this by declining BA7 has also taken that reject path, cost recorded in §5.2.3. A theorist who instead posits the supervenience *law* as a real, primitive ground has thereby affirmed a ground that is not purely structural—meeting this chapter's criterion rather than failing it. That is the line between a ground and a label; and it is not barred by BA7's pseudo-explanation category, which covers the bare phrase “it's a fundamental law” offered as a refusal of the in-virtue-of question, not a law cited as the ground that answers it.
- **Biological Naturalism (Searle):** Meets I2's criterion in its irreducibility-affirming form (consciousness as an ontologically first-personal feature). Fails here: the position's grounds are exhaustively neurobiological—which experience occurs, and with what character, is grounded in lower-level brain processes alone, and those are structural. The irreducible first-person ontology is the position's account of what experience *is*, never of what *grounds* it; the grounding story cites structure alone, against this chapter's conclusion that token appearing facts have no wholly structural ground. A version positing a non-structural element in the *ground*—not merely in the effect—would meet the demand; Searle locates the ground in neurobiology.
- **Quietist non-reductionism:** Embraces brute experiential further facts—the same BA7-declining route, same measurement, same recorded cost.

Frameworks that FACE PRESSURE at I3:

- **Emergentism (without ontological addition):** A mechanism is affirmed; whether emergence is epistemic (wholly structural—fails) or ontological (not purely structural—passes) is unsettled. This is the middle tier's defining shape.
- **Non-reductive physicalism:** May meet the criterion, but only by affirming a ground standard physicalism disallows—the affirmation's category is what remains unsettled.

Frameworks that PASS I3:

- **Russellian monism:** Intrinsic natures serve as selection principle
- **Panpsychism:** Fundamental experiential properties ground determinacy
- **Property dualism:** Non-physical properties ground determinacy
- **Substance dualism:** The non-physical substance and its states ground determinacy
- **Neutral monism:** Neutral substance provides the ground
- **Idealism:** Fundamental experience grounds determinacy

5.8 Bridge to Inevitability 4: From Determinacy to Token-Distinctness

Inevitability 3 establishes: **For each token instance of appearing, a ground exists that is not purely structural.**

This immediately raises a question that will prove pivotal: what does determinacy *require* in order to be meaningful?

5.8.1 Lemma 3.2: Determinacy Entails Distinguishability

Claim: For experience to be determinate (*this* rather than *that*), there must be distinguishable experiential items.

Derivation. BA6 asserts that experience has determinate character: it is *this* experience rather than another. But consider what “*this* rather than *that*” means:

1. “*this*” picks out a specific experiential token
2. “rather than” implies contrast with alternatives
3. “*that*” refers to distinguishable alternatives

For the contrast to be meaningful, there must be items between which the contrast holds. If there were only ever one experiential token with no possible alternatives, “determinacy” would be vacuous—there would be nothing for the experience to be determinate *as opposed to*.

This is not merely epistemic (we need alternatives to *recognize* determinacy). It is constitutive: determinacy *is* the property of being *this* rather than *that*. Without distinguishable items, there is no “rather than” and hence no determinacy.

Conclusion. Determinacy requires distinguishability among experiential items. *Qualifier:* this lemma establishes that there must be distinguishable alternatives; whether those alternatives must be actual rather than merely possible is not settled here—I4’s Lemma 4.1 takes that up. $\square$

5.8.2 Lemma 3.3: Simultaneous Token-Distinctness Requires Boundaries

Claim: If there exist simultaneously occurring experiential tokens that are distinguishable (*this* token is not *that* token), then there exist boundaries demarcating them.

Critical distinction: Sequential vs. Simultaneous. Consider two modes of experiential distinctness:

(A) **Sequential distinctness:** I experience red, then I experience blue. These are distinguishable experiences, but they occur within a single experiential trajectory. The “boundary” between them is merely temporal succession within one perspective. No deep metaphysical demarcation is required—it is simply one experiencer having different experiences at different times.

(B) **Simultaneous distinctness:** Your pain *right now* is not my joy *right now*. Both are occurring. Both are determinate. They are distinguishable. But they are not sequential phases of one trajectory—they are happening *at the same time* in distinct experiential tokens.

The key insight. For sequential distinctness, temporal order does the demarcating—what makes *this* experience not-*that* experience is that one comes before (or after) the other in the experiential sequence. For simultaneous distinctness, temporal order cannot do it (they occupy the same position in the sequence), so something else must demarcate *this* token from *that*. That there is such a demarcation is not assumed below; it is delivered by BA7.

Derivation. Suppose two experiential tokens e_1 and e_2 exist simultaneously:

- e_1 is determinate (has specific character C_1)
- e_2 is determinate (has specific character C_2)
- $e_1 \neq e_2$ (they are distinguishable tokens)
- e_1 and e_2 occur at the same time t

What makes e_1 and e_2 distinct simultaneous tokens rather than one token?

If there were nothing demarcating them, they would not be two tokens but one. This is not an assumed individuation principle; BA7 licenses it. The tokens' twoness—that these are two instances of appearing rather than one—is an experiential fact, and not the bare occurrence of experience: bare occurrence is that appearing occurs at all, while twoness is a fact about which tokens there are and how many. By BA7, it holds in virtue of something. That in virtue of which the tokens are two is precisely what demarcates *this* token from *that*—a boundary—and, being what the twoness holds in virtue of, it is prior to the plurality in the order of grounding, not of time: boundary and tokens obtain together, and the priority is only the asymmetry of the in-virtue-of relation. The only alternative is twoness with no demarcating ground: brute twoness, which BA7 excludes.

Character does not individuate. It may be tempting to answer instead: their characters differ— $C_1 \neq C_2$ is what makes them two. This mistakes a symptom for the ground. Qualitative difference presupposes the twoness it is invoked to explain: for C_1 and C_2 to be the characters of two tokens, there must already be two tokens to bear them. The identity case exposes the presupposition—two simultaneous tokens of identical character (your pain and a qualitatively indistinguishable pain elsewhere) would still be two, not one. Character difference, where present, is *borne by* distinct tokens; it is not what makes them distinct. The demarcation is prior: the boundary is what allows the two tokens to be two tokens, not one.

What boundaries do. Experiential boundaries demarcate token from token: they are that in virtue of which *this* token is not *that* token. They thereby determine facts about appearing—which instances of appearing there are, and that these are two rather than one. Whether demarcating tokens is also demarcating *perspectives*—what appears *for* whom—is taken up where perspectives are the subject (I4); this lemma needs and claims only token-demarcation.

Conclusion. Simultaneous token-distinctness requires boundaries demarcating token from token.
□

5.8.3 Lemma 3.4: Experiential Boundaries Cannot Be Grounded in Structure Alone

Claim: Experiential boundaries—whatever demarcates simultaneous experiential tokens—cannot be grounded in structural facts alone.

Derivation. *Ground-account link.* A complete ground underwrites a complete account: to completely ground a fact is to supply that in virtue of which it obtains, which a complete account of it must cite (the account-level crossing licensed by the Note on 3P Closure; grounding read as complete throughout, per the Complete-versus-partial-grounding note above; the Ground-account link is declared before the Determination Trilemma and restated here for Lemma 3.4's local use). Hence if no wholly structural account of a fact is complete, no wholly structural ground of it is complete. Step 3 consumes this link.

1. Experiential boundaries determine facts about appearing—which tokens of appearing there are, and that *this* token is not *that* token (Lemma 3.3)
2. Boundary facts are themselves facts about appearing: a complete account of token-individuation must specify the tokens it individuates, which are instances of appearing (Note on 3P Closure, I2)

3. Any fact whose complete account must specify appearing is first-personal by the Note’s transmission (specifying those instances requires reference to a perspective—Lemma 3.1b, extending Axiom 8 to tokens), hence not exhaustively third-person describable (Axiom 9), hence not purely structural (Axiom 7’s contrapositive)—so no wholly structural account is complete for it, and hence (Ground–account link) no wholly structural ground is
4. Therefore, facts about experiential boundaries cannot be grounded in structure alone [from 2, 3]

Elaboration. The critical move is recognizing that boundaries are not merely *adjacent to* appearing but *determinative of* facts about appearing. A boundary is what makes it the case that *this* is one instance of appearing and *that* is another. Token-individuation is itself a fact about appearing: its complete account must specify the tokens it individuates, which are instances of appearing (Note on 3P Closure, I2). Whether boundaries additionally carve the *for*-relation—perspective from perspective—is I4’s subject; nothing in this lemma depends on that further content.

Since boundary facts are themselves facts about appearing (step 2), the Note on 3P Closure applies to them directly: their complete account must specify the instances of appearing they individuate, so no wholly structural account—hence no wholly structural ground—is complete for them. Structure might *correlate with* where boundaries fall (e.g., different brains, different organisms), but correlation is not grounding. The question “What makes it the case that the experiential boundary falls *here* rather than *there*?” cannot be answered by citing structural facts alone.

Note on surviving frameworks. This argument applies to all frameworks that survive I2. For all of these, appearing cannot be grounded in structure alone. Since boundary facts are themselves facts about appearing (step 2), boundaries likewise cannot be grounded in structure alone—they require a ground that is not purely structural—whether that ground is wholly non-structural or a blend of structural and non-structural elements.

Conclusion. Experiential boundaries cannot be grounded in structure alone. □

5.8.4 Lemma 3.5: Experiential Boundaries Are Not Brute

Claim: Experiential boundaries have a ground; they are not brute.

Derivation. This follows directly from BA7 (the anti-brute commitment). BA7 asserts that experiential determinacy is not brute—there is something in virtue of which *this* experience occurs rather than *that*.

Boundaries are what make simultaneous tokens distinct—the demarcation is prior to the plurality (Lemma 3.3). The fact that e_1 is bounded from e_2 is itself a fact about appearing: it is the fact that these instances of appearing are two, not one. It is not a token of appearing, and it does not need to be—the boundary determines token-facts without being a token-fact, and BA7 ranges over experiential facts generally, beyond bare occurrence, not over tokens only (Axiom 12 applies BA7 at token instances; BA7 itself is wider—see its tag and the SelPrin/BA7 division note). Per BA7, such facts have grounds.

Conclusion. Experiential boundaries are grounded, not brute. □

5.8.5 The Derivation of Boundedness from Determinacy

We can now derive that experiential boundaries require a ground that is not purely structural:

1. Experience is determinate (BA6) [antecedent support]
2. Determinacy requires distinguishability (Lemma 3.2) [antecedent support]
3. If distinguishable experiential tokens exist simultaneously, boundaries demarcate them (Lemma 3.3)
4. Such boundaries cannot be grounded in structure alone (Lemma 3.4, from I2 with the Ground–account link)
5. Such boundaries are not brute (Lemma 3.5, from BA7)
6. Therefore: *If* simultaneous distinct experiential tokens exist, *then* boundaries exist between them that require a ground that is not purely structural [from 3–5; steps 1–2 secure that existing tokens are determinate and distinguishable, giving the antecedent its content]

The conditional structure. Note that this derivation is *conditional*: *If* simultaneous distinct experiential tokens exist, *then* boundaries exist between them that require a ground that is not purely structural. The derivation does not *assume* that multiple perspectives exist. Rather, it establishes what follows if they do.

Conditional conclusion: Determinacy is meaningful only if distinguishability obtains. If distinguishability includes simultaneous token-distinctness, then experiential boundaries are real, require a ground that is not purely structural, and are non-brute.

5.8.6 The Monist Objection to Simultaneous Distinctness

A monist might object: “I accept that experience is determinate. But all experience is *one* experience—mind-at-large experiencing itself. There is no simultaneous distinctness, hence no need for boundaries.”

This objection fails for three reasons. Note the scope of what follows: these responses answer the *monist*, who grants that others are experiencing and denies only that their experiences are distinct tokens. They do not answer someone who denies that any experience but their own occurs at all. That position—solipsism—is addressed in I4, where it is acknowledged as an exit rather than refuted.

(1) Determinacy becomes vacuous—for the monist who denies even possible alternatives. If there is only ever one experiential token (cosmic mind’s singular experience) with no possible alternatives, “determinate” means nothing: determinate as opposed to what? That monist cannot cash out what BA6 claims and must either reject BA6 (denying that experience has determinate character—phenomenologically absurd) or admit contrast with alternatives. A monist who instead grants merely *possible* alternatives cashes out determinacy that far—Lemma 3.2’s conclusion expressly leaves open whether the alternatives must be actual; I4’s Lemma 4.1 takes that up. This response therefore narrows the objection rather than closing it; responses (2) and (3) address the monist who survives it.

(2) Internal differentiation reinstates the problem. Suppose the monist says: “The cosmic experience is internally differentiated—it has this aspect and that aspect, this region and that region.” But internal differentiation *is* multiplicity. If the cosmic experience has distinguishable aspects occurring simultaneously (the “your pain” aspect and the “my joy” aspect), then those aspects are simultaneous distinct tokens, and boundaries demarcate them. The monist has merely relocated the boundaries inside one cosmic experience rather than eliminated them.

(3) Phenomenological evidence. Whatever one’s metaphysical theory, the phenomenological datum is undeniable: there is experience occurring that is inaccessible from within this experience. I do not have access to your phenomenal field from within mine. This mutual inaccessibility is either:

- (a) Real, in which case boundaries exist, or
- (b) Illusory, in which case the illusion of boundaries is itself a real fact about appearing, so no wholly structural ground is complete for it (I2, Note on 3P Closure with the Ground–account link)

Either way the monist owes a ground that is not purely structural: on (a), boundaries exist and I3’s conditional applies; on (b), what demarcates the *apparent* domains within the one experience re-arises as I4’s internal-differentiation objection.

5.8.7 What I4 Will Establish

I3 has established: *If* simultaneous distinct experiential tokens exist, *then* real boundaries exist between them that require a ground that is not purely structural and are non-brute.

I4 will establish: Such simultaneous distinct tokens *do* exist, and therefore boundaries *are* real.

5.8.8 The Combination Problem Reframed

This derivation also reframes the combination problem that plagues panpsychism.

The traditional framing asks: “How do many micro-experiences combine into one macro-experience?” This presupposes that we start with multiple experiences and must explain their unity.

The I3-based framing inverts this: “What grounds the boundaries between simultaneous experiential tokens?” We start with determinacy (which requires distinguishability) and ask what demarcates the distinguishable tokens.

This reframing does not solve the puzzles; it relocates them. On the picture the bridge lemmas motivate—not derived here, and taken up at I4:

- There need be no experiences “waiting to be combined”—on this framing, boundaries belong to what actualization produces
- A perspective would be individuated by what actualization produces, with boundaries as its shape—a picture noted here and not developed further in this monograph
- The question is not “how do separate things become one?” but “what grounds the demarcations that make tokens distinct?”

5.9 Summary

Aspect	Status
Logical form	Valid deduction from I2 + BA6 + BA7 + Axioms 11–13; Corollary given FP
Assumption load	BA6 phenomenologically evident; BA7 explicitly flagged; the Ground–account link licen
I2→I3 bridge	NL track: Lemma 3.1 + Determination Trilemma; symbolic track: Lemma 3.1b with I
Axiom 13 defense	Explicit argument via what-grounds- $R(S, E)$
Anti-brute commitment	Elevated to BA7; defended on own merits
SelPrin formulation	Allows multiple grounds; unified-or-plural constrained, not settled (Scope and Limits)
BA6 gappiness	Scope note: applies when token exists
Supervenience	Trilemma: brute (as mere regularity, fails—a named regularity grounds nothing; as pos
Psychophysical laws	Subsumed under Determination Trilemma
Epiphenomenalism	Compatible—I3 concerns ground, not causal power
Quantum objection	QM may specify principle; Born-rule clarification added
Vagueness objection	Determinate vagueness is still determinate
Primitive objection	Type 1 vs Type 2 primitives distinguished
Russellian monism	Compatible—intrinsic natures can serve as principle
Panpsychism	Compatible—fundamental experience can ground determinacy
Framework tracking	Where each framework failed or survives, reject paths recorded alongside
Lemma 3.2	Determinacy entails distinguishability
Lemma 3.3	Simultaneous distinctness requires boundaries
Lemma 3.4	Boundaries cannot be grounded in structure alone (from I2 + its Note on 3P Closure -
Lemma 3.5	Boundaries are not brute (from BA7)
Bridge to I4	Conditional; antecedent discharged in I4

6 Inevitability 4: Experiential Boundaries Are Real

Inevitability 4 (Experiential Boundaries Are Real). *There exist real experiential boundaries—distinct perspectives that are not mutually accessible as one experience.*

What this chapter must establish. The statement above is this chapter’s obligation. Its load-bearing elements: that experiential boundaries *exist*—discharged against the Observation of co-presence, the chapter’s one stated observational input, so the existential binds everyone who grants the Observation—its deniers, from either direction, are recorded at the solipsist paragraph; that they are *real*—demarcated by something (Lemma 3.3; non-brutely per Lemma 3.5, from BA7) that is not purely structural (Lemma 3.4), hence not merely apparent, not brute, and not grounded in structure alone; that the bounded items are *distinct perspectives*—Perspective as defined in the Symbolic Formalization, a token named as a center of appearing; and that they are *not mutually accessible as one experience*—the $\neg$ Accessible conjunct of SimDistinct, carried by the Observation’s own content: tokens other than one’s own are tokens not accessible as one’s own—the Observation’s phrase and the symbol state the same phenomenal fact (Axiom 14’s gloss).

Note: This inevitability completes the derivation begun in I3’s bridge section. I3 established the *conditional*: *If* simultaneous distinct experiential tokens exist, *then* boundaries exist between them that require a ground that is not purely structural and are non-brute. I4 establishes the *antecedent*: simultaneous distinct tokens *do* exist. The conclusion follows: experiential boundaries are real.

Clarification of scope: I4 does not specify *what* creates boundaries (whether it’s biological organization, some intrinsic feature of selection principles, or something else). It establishes only that boundaries are *real*—not merely apparent, not brute, and not grounded in structure alone—nor eliminable by appeal to cosmic unity (the Cosmopsychism response).

Terminological note: Throughout, “perspective” means a center of appearing (a phenomenological field), not a metaphysical subject or substance. “Token” means a particular instance of experience occurring at a time. I4 concerns boundaries between experiential tokens, not the existence or nature of selves.

6.1 Assumptions

This inevitability builds from the Foundational Premise, I2, and I3. **No new background assumption is introduced**; three point-of-use commitments are declared where used: the token bridge (Symbolic Formalization; cited at derivation step 1 for the general case—the witness route bypasses it), the named principle (Symbolic Formalization; consumed by no derivation step), and the synchronic premise (declared at Lemma 4.2’s negative part; consumed there and in the Objection 2 response).

6.1.1 From Prior Derivations

ExpOcc: There is at least one instance of appearing. [FP]

I1: Experience makes an ontological difference—reality-with-experience $\neq$ reality-without-experience. (*Carried transitively; this chapter’s derivation cites I3 and I2, not I1 directly.*)

I2: Appearing cannot be exhaustively accounted for by structure alone. Formally: $\exists x (E(x) \wedge \text{Diff}(x)) \wedge \neg \text{Struct}(\text{App}) \wedge \neg \text{LogEntails}(\text{StructFacts}, \text{App})$. I2’s central defended premise, Axiom 8: appearing is constitutively first-personal—the *for*-relation (appearing-*for*-a-perspective) is part of

what appearing *is*. That is a premise I2 defends at length, not a derived result, and I4 inherits it as such.

I3: Experience is determinate, and determinacy requires a selection principle that is not purely structural. For each token occurrence of appearing, a ground exists that is not purely structural (SelPrin, ranging over $E(e)$; SelPrin does not range over experiential facts in general—see I3’s SelPrin/BA7 division note). BA7 (anti-brute commitment): experiential facts beyond the bare occurrence of experience are not brute but have an ontological ground.

I3’s Bridge (Lemmas 3.2–3.5):

- **Lemma 3.2:** Determinacy entails distinguishability—for “*this* rather than *that*” to be meaningful, there must be distinguishable items.
- **Lemma 3.3:** Simultaneous token-distinctness requires boundaries—temporal order demarcates sequential distinctness; something else must demarcate simultaneous tokens.
- **Lemma 3.4:** Boundaries cannot be grounded in structure alone—boundary facts are themselves facts about appearing (a complete account of token-individuation must specify the tokens it individuates), and no wholly structural ground is complete for such facts (I2, Note on 3P Closure, with I3’s Ground-account link).
- **Lemma 3.5:** Boundaries are not brute—from BA7.

I3’s Conditional Conclusion: *if* simultaneous distinct experiential tokens exist, *then* boundaries exist between them that require a ground that is not purely structural and are non-brute.

6.2 The Core Derivation: Simultaneous Distinct Tokens Exist

I3 established the conditional. I4 must establish the antecedent: simultaneous distinct experiential tokens *do* exist.

The derivation draws on one stated observation together with Lemma 4.3; Lemmas 4.1 and 4.2 serve the independent dialectical route. All three lemmas are defended below; the observation is declared first.

6.2.1 Stated Input: The Observation of Co-Presence

Observation 2 (Co-presence). Experiential tokens other than one’s own occur now. Other people are having their experiences while you are having yours.

Status of this observation. Co-presence is a stated input to I4’s derivation. It is neither a derived result nor a background assumption, and the distinction matters in three ways.

- **It is observed, not proven.** That others are experiencing now is among the most manifest data available to us. No deductive argument establishes it, and I4 does not offer one. Presenting it as a theorem would claim more than the chain can deliver.
- **It is local, not global.** Background assumptions enter as stage inputs and govern from their introduction onward, and are contestable on philosophical grounds. Co-presence does its work within this chapter alone—anchoring the witness token and discharging Lemma 4.2’s positive part, each use stated where it occurs—and is consumed nowhere else in the chain. Elevating a chapter-local datum to a global commitment would overstate its role and misdescribe the architecture.
- **It is not a brute posit.** BA7 forbids treating experiential determinacy as groundless, and Lemmas 3.2 and 4.1 derive—given BA6 and BA7—that substantive determinacy *requires* actual alternatives. What the Observation supplies is the co-present witness: that such tokens

occur now. The requirement is derived; the existence is observed (see What is not claimed here, under Lemma 4.2).

The solipsist. Denying co-presence is possible. The solipsist holds that no experiential token but their own occurs, and I4’s conclusion does not bind them. We attempt no refutation. Solipsism is cheap to state and not reachable by deduction, precisely because it denies the datum rather than contesting an inference. The price of this direction of the exit is denying that anyone else is experiencing anything right now. Denial of the Observation is the sole acknowledged exit from I4—the solipsist takes it from one direction (no other experience occurs), the undifferentiated cosmopsychist from the other (only one experience occurs, so no token other than one’s own; see the Cosmopsychism response); premise-rejection routes are recorded at their home chapters.

6.2.2 Lemma 4.1: Determinacy Requires Actual Alternatives

Claim: The alternatives that make determinacy substantive cannot all be merely *possible*—some must be *actual*.

Derivation. From BA6 (determinacy of appearing): Experience is *this* rather than *that*. From Lemma 3.2: This requires distinguishable alternatives.

Consider what “alternatives” could mean:

(A) Merely possible alternatives: The experience is *this* rather than experiences that *could have occurred but didn’t*. The alternatives are counterfactual—logically possible but not actual.

(B) Actual alternatives: The experience is *this* rather than experiences that *are actually occurring* (but not within this token). The alternatives are real—they exist, just not here.

If all alternatives were merely possible (Option A), then determinacy would reduce to trivial self-identity:

- “This experience is *this* rather than *that*” would mean only “this experience is this experience rather than some non-actual possibility”
- But every actual thing trivially satisfies this—it is itself rather than something that doesn’t exist
- The contrast with non-actual possibilities provides no substantive determinacy
- “Determinacy” would be indistinguishable from mere existence

For determinacy to be substantive—for “*this* rather than *that*” to have non-trivial content—some alternatives must be actual. The experience is determinate not merely because it exists (trivial) but because it is *this* one rather than *that* one, where *that* one also exists. “*this* rather than *that*” concerns character, not numerical identity: every token is trivially itself; the substantive question is what makes its character this character rather than another (BA6’s determinacy; Lemma 3.2’s distinguishability).

Analogy. Consider: “This apple is red rather than green.” If no green apples existed anywhere, the claim would reduce to “this apple is red rather than... nothing actual.” The contrast with merely possible green apples provides weak determinacy at best. But if green apples actually exist (elsewhere), then “this apple is red rather than green” has substantive content—it locates this apple within a space of actual alternatives.

Against counterfactual grounding. One might object: “Why can’t merely possible alternatives ground substantive determinacy? The experience is *this* rather than what it *could have been*.”

This objection fails because a merely possible alternative is not an actual ground: to ground determinacy in counterfactual alternatives is to ground it in nothing actual.

This reduces to brute determinacy by another name. The counterfactual “grounding” story amounts to: “The experience is determinately *this* rather than *that*, and nothing actual makes it so.” But a token’s determinacy is an experiential fact, which BA7’s full range covers, and BA7 (anti-brute commitment) rules out brute experiential facts. Therefore, counterfactual alternatives cannot do the grounding work.

The objector faces a dilemma:

- (i) Accept brute determinacy (and pay BA7’s price), or
- (ii) Produce *actual* contrasting tokens—thereby conceding Lemma 4.1’s conclusion.

The grounded path without alternatives. A third path escapes the dilemma as stated: experiential determinacy is grounded by an actual ground that is not a contrast token—I3’s selecting ground. This is not brute (the ground is actual), and it posits no actual alternatives. What it cannot do is make the determinacy *substantive* in BA6’s contrastive sense. The ground fixes *this* character; the “rather than *that*” remains a contrast with possibilities only, and the triviality argument above applies to it unchanged—everything actual is “this rather than merely possible others.” Grounding answers bruteness; it does not upgrade counterfactual contrast into genuine contrast. The path therefore concedes the lemma’s point: grounded character with trivial contrast is determinacy in the thin sense only (the solipsism response describes exactly this position), and substantive contrast-determinacy still requires actual alternatives.

Conclusion. For experiential determinacy to be substantive—determinacy with actual contrast, beyond the thin reading BA6 alone secures—some alternatives must be actual. □

6.2.3 Lemma 4.2: The Actual Alternatives Are Co-Present, Not Sequential

Claim: The actual alternatives required by Lemma 4.1 cannot be supplied by sequential succession within a single trajectory. Given the Observation of co-presence, they are supplied by co-present tokens.

Derivation. The lemma has two parts: a negative result, which is an analysis of what BA6’s contrast requires, and a positive identification, which discharges against the stated Observation.

Negative part (analysis): succession does not supply alternatives. Consider a trajectory experiencing different things at different times: at t_1 , experience e_1 ; at t_2 , experience e_2 ; and so on.

- “*this* rather than *that*” at time t can only contrast with experiences at other times
- But experiences at other times are not alternatives to *this token*—they are simply different tokens in the same trajectory

Sequential distinctness provides *succession*, not *alternatives*. When I experience red at t_1 and blue at t_2 , the blue experience is not an alternative to the red experience—it is what comes next. They are not competing for the same “slot”; they occupy different slots (successive positions). This slot–succession identification—alternatives compete for the same experiential slot; a slot admits one state, so successive tokens fill different slots, and contrast comes from what is co-present, not from what precedes or follows—is the *synchronic premise*: a point-of-use commitment, stated rather

than derived, consumed here and in the Objection 2 response. Rejecting it costs the determinacy route this analysis serves; the formal derivation never draws on it.

The lottery analogy. In a lottery, the winning number is determinate: it is *this* number rather than the others. The alternatives are the other numbers that *could have been drawn* (at the same drawing). If we said “the winning number is 7 rather than... the numbers drawn in past lotteries,” we would miss what makes *this* lottery determinate. Past drawings are not alternatives to this drawing; they are different events entirely.

Similarly: past experiences are not alternatives to this experience; they are different experiential events. Whatever supplies the actual alternatives Lemma 4.1 requires, it is not the subject’s own temporal succession.

Positive part (discharged against the Observation): the alternatives are co-present. Lemma 4.1 establishes that the alternatives must be actual; the negative part establishes that succession cannot furnish them. The Observation supplies what remains: distinct tokens occur now, alongside this one. Those co-present tokens are the actual alternatives.

What is not claimed here. This lemma does not derive the existence of co-present tokens from determinacy. Determinacy plus BA7 shows that the alternatives must be *actual* rather than merely possible; it does not by itself yield their temporal co-incidence with the token in question. That co-incidence is observed and declared, not proven. The Observation is doing visible work at exactly this juncture, which is why it was stated above rather than smuggled into an inference.

Conclusion. The actual alternatives required by Lemma 4.1 are not supplied by succession; given the Observation, they are co-present with the determinate token. $\square$

6.2.4 Lemma 4.3: Co-Present Alternatives Entail Simultaneous Distinct Tokens

Claim: Co-present actual alternatives just *are* simultaneous distinct experiential tokens.

Derivation. This is definitional. A “simultaneous actual alternative” to experience e_1 is:

- An experience (not merely a possibility)
- Occurring at the same time as e_1
- Distinct from e_1 (not the same token)
- Not mutually accessible with e_1 as one experience—an aspect within the same experience is not an alternative *to* it (see Objection 3)

These are SimDistinct’s conjuncts—Token(e_2, t), the shared t , $\neg$ Accessible(e_1, e_2)—so the identification is conjunct-for-conjunct. This just *is* what we mean by “simultaneous distinct experiential token.”

Conclusion. Simultaneous actual alternatives = simultaneous distinct tokens. $\square$

6.2.5 The Main Derivation

1. Distinct tokens occur co-presently with this one (Observation 2)
2. Co-present distinct tokens just *are* simultaneous distinct tokens (Lemma 4.3)
3. $\therefore$ Simultaneous distinct experiential tokens exist
4. *If* simultaneous distinct tokens exist, *then* boundaries exist between them (I3, Lemma 3.3)
5. $\therefore$ Experiential boundaries exist

6. These boundaries require a ground that is not purely structural (I3, Lemma 3.4) and are non-brute (I3, Lemma 3.5)
7. $\therefore$ Experiential boundaries are real—demarcated by what is not purely structural, non-brutely BA6, Lemma 3.2, Lemma 4.1, and Lemma 4.2 appear in no step above. Their role is dialectical and independent—the determinacy route: experience is determinate (BA6), determinacy requires distinguishable alternatives (Lemma 3.2), merely possible alternatives could not ground it substantively (Lemma 4.1), and succession does not supply the actual ones (Lemma 4.2)—foreclosing the escape routes a critic might take in place of the co-present tokens (see the Note on the named principle in the Symbolic Formalization). The two routes are mutually reinforcing.

Formal statement: Distinct tokens occur co-presently with one’s own (Observation 2), and co-present distinct tokens are simultaneous distinct tokens (Lemma 4.3); hence simultaneous distinct tokens exist. Independently, the determinacy route—BA6 with Lemmas 3.2, 4.1, and 4.2—forecloses grounding substantive determinacy in merely possible or merely sequential alternatives. Given I3’s conditional (Lemmas 3.3–3.5), experiential boundaries exist as real features of reality, demarcated by what is not purely structural and not brute.

Modal status: Numerical distinctness is derived; co-presence—and with it the witness’s actuality—is observed. I4’s conclusion therefore binds anyone who grants that others are experiencing now—everyone who does not deny the Observation. It is not advanced as a result forced against all comers.

6.3 Addressing the Monist Objection

A monist might resist at Lemma 4.1, at Lemma 4.2, or at the distinctness-requires-demarcation move (Lemma 3.3, from I3—resistance there is now resistance to BA7’s application, whose reject path is recorded at I3); resistance at the Observation itself is the solipsist exit, handled separately below. Three versions of the objection:

6.3.1 Objection 1: “Merely Possible Alternatives Suffice”

“Determinacy doesn’t require actual alternatives. My experience is determinate because it is this rather than the many experiences I might have had but didn’t. Counterfactual contrast is enough.”

Response. Counterfactual contrast provides only trivial determinacy. Consider: What makes your current experience determinate? The monist answer: “It is this experience rather than the infinitely many possible experiences I’m not having.”

But this applies to *anything actual*. This rock is this rock rather than the infinitely many possible rocks. This number is this number rather than the infinitely many possible numbers. If “determinacy” meant only “being actual rather than merely possible,” everything actual would be equally “determinate”—the concept would do no work.

Substantive determinacy claims something stronger: experience has *specific character*—it is *this* rather than *that* in a way that involves genuine contrast. BA6 alone secures the thin reading—specific character whose “rather than” contrasts only with merely possible alternatives, the contrast everything actual trivially has (Lemma 4.1). Counterfactual contrast is too weak to ground this. What makes the contrast genuine is that the alternatives are real—they exist, providing a space within which *this* experience is located.

6.3.2 Objection 2: “Sequential Alternatives Suffice”

“My actual alternatives are my past and future experiences. I don’t need simultaneous others; my own experiential history provides the contrast class.”

Response. Sequential alternatives provide the wrong kind of contrast. Your past experiences are not alternatives to your current experience—they are what came before. Your future experiences are not alternatives—they are what will come next.

Consider: What makes your current pain determinate? The monist answer: “It is this pain rather than the pleasure I felt yesterday.” But yesterday’s pleasure is not an alternative to today’s pain; it is a different event entirely. They don’t compete for the same experiential “slot.”

For genuine alternatives, we need tokens that could (in some sense) “trade places”—tokens that stand in contrast *at the same time*. This synchronic requirement is the premise declared at Lemma 4.2’s negative part—a point-of-use commitment, stated rather than derived, consumed there and here. An objector who rejects it rejects that stated analysis, not a derived step. Your pain *right now* is determinate because it is *this* rather than the joy someone else is experiencing *right now*: they are alternatives because they are both occurring, and this one is *this* one rather than that one.

That co-present others are experiencing is the stated Observation, not a further derivation. This response shows only that sequential contrast cannot do the work the objector assigns it. What fills the gap is the datum, and the objector who wishes to press further must deny the datum—which is solipsism, not monism.

6.3.3 Objection 3: “Internal Differentiation Without Real Boundaries”

“Perhaps there is one cosmic experience with internal differentiation—different aspects or regions, but no real boundaries. The ‘your pain’ aspect and the ‘my joy’ aspect are distinguishable within one unified experience.”

Response. This objection splits on accessibility. Either the “your pain” aspect and the “my joy” aspect are mutually accessible as one experience, or they are not.

If they are—“just aspects of one experience”—the claim is that your experience and mine are one experience, and each reader’s own datum denies it: others’ tokens are precisely what is *not* accessible as one experience with one’s own. That route is denial of the Observation—the exit recorded at the solipsist response, at the mirrored price: the solipsist denies that other experience occurs; this route denies that any experience is other.

If they are not, they are simultaneous experiential items failing accessibility—distinct bounded perspectives in exactly I4’s sense—and “aspect” relabels “token.” The point is conceded, and the question becomes: what demarcates them? Per Lemma 3.3 (from I3): simultaneous distinctness requires boundaries. Temporal order demarcates sequential distinctness; something must demarcate simultaneous distinctness. Call it “internal structure” or “aspectual differentiation” or whatever you like—it is functioning as a boundary. A third status—differentiated, yet neither one experience nor distinct—is the objector’s to specify; none is on offer.

Per Lemma 3.4 (from I3): This boundary cannot be grounded in structure alone.

Per Lemma 3.5 (from I3): This boundary is not brute.

The monist has not eliminated boundaries; they have relocated them inside the cosmic experience. And these internal boundaries face the same constraints as external ones: their demarcation is not purely structural, and it is not brute.

6.4 The Criterion for Frameworks

I4 establishes that experiential boundaries are real. This generates a diagnostic criterion for evaluating frameworks:

The Boundedness Criterion: Any adequate theory of consciousness must provide a principled account of what grounds the boundaries between simultaneous experiential tokens—a ground that is not purely structural and is not brute.

What this criterion requires:

- The framework must *affirm* that boundaries are real—not illusory, not merely apparent, not reducible to a single undifferentiated experience
- The framework must provide *some account* of what makes boundaries real—what grounds the fact that *this* token is not *that* token
- The account cannot appeal to structure alone (per Lemma 3.4)
- The account cannot be brute (per Lemma 3.5 / BA7)
- The account must *ground* the boundary, not merely *represent* it. A formalism can satisfy a boundedness predicate by construction—by assigning distinct experiential domains at the outset—while leaving untouched the question of what makes those domains distinct rather than one.

The subtraction test. Lemma 3.4 prohibits grounding boundaries in structure *alone*. It does not prohibit structure from figuring in an account, and a framework is not convicted merely by the appearance of structural facts in its story about individuation. The operative question is whether the framework’s non-structural resource contributes anything at this particular juncture:

Subtract the structural facts. Does any individuating difference remain?

If nothing remains—if every difference between *your* perspective and *mine* traces to substrates, proximities, functional associations, or other third-personally specifiable facts—then the boundary is grounded in structure alone, however rich the framework’s non-structural ontology may be elsewhere. A non-structural element can be present in the ontology and *idle* at exactly the point I4 examines. Several frameworks below fail in precisely this way, and the test is what distinguishes them from frameworks whose non-structural resource does contribute but underspecifies where boundaries fall.

What this criterion does *not* require:

- That the framework specify the *complete* mechanism of boundary formation
- That the account answer every further question it raises
- That boundaries be sharp, permanent, or absolute

Evaluation categories:

- **FAILS:** No account of boundaries; or the account appeals to structure alone; or the account treats boundaries as brute—including formalisms that represent or stipulate distinct experiential domains without grounding the distinctness, since assigning a boundary by fiat is a brute posit expressed in notation
- **FACES PRESSURE:** Has an account, but the account is incomplete or raises unanswered questions

- **PASSES:** Provides a coherent account of boundaries whose ground is not purely structural and not brute

The category names are fixed across all chapters; each chapter specialises their content to its own constraint.

Exit semantics. FAILS and FACES PRESSURE are exits, not grades short of a pass: the chain does not proceed for a framework until a chapter’s criterion is met. Re-entry requires supplying what the criterion demands—a grounded account of demarcation. A framework may deny the Observation of co-presence—the solipsist exit, acknowledged rather than refuted—or dispute an inherited premise, a reject path assessed per the Introduction’s replacement rule.

6.5 The Combination Problem Reframed

The combination problem for panpsychism is traditionally framed as: “How do many micro-experiences combine into one macro-experience?”

I4 reframes this question. The traditional framing presupposes:

- We start with multiple separate experiences
- We must explain how they become unified
- The problem is about unity/binding

The I4 framing inverts this:

- We start with determinacy, which requires distinguishability
- Distinguishability among simultaneous tokens requires boundaries
- The problem is about what grounds those boundaries

Key insight. Nothing in the chain supplies experiences “waiting to be combined”: the demarcation is prior in the order of grounding to the tokens’ twoness (Priority of demarcation, below), so pre-bounded ingredients are a presupposition the chain nowhere grants, not a starting point it shares. The question is not “how do separate things become one?” but “what grounds the demarcations that make tokens distinct?”

Priority of demarcation. A boundary is not one more experiential token alongside those it demarcates. It is that in virtue of which the tokens are two rather than one: the boundary is what allows the two tokens to be two tokens, not one. Demarcation is therefore prior to token-plurality—a criterion of counting cannot be one of the things counted—and a boundary-fact is an experiential fact about tokens (that these instances of appearing are two) without being a token occurrence of appearing. This is why SelPrin, which ranges over token occurrences, proves nothing unconditional about boundaries, while BA7, which ranges over experiential facts generally (beyond bare occurrence), reaches them (I3, SelPrin/BA7 division note; Lemma 3.5).

This dissolves certain puzzles:

- The “combination” metaphor suggests experiences are like objects that can be aggregated. But experiences are not objects; they are actualizations, and nothing in the chain supplies pre-bounded actualizations available for aggregation—the demarcation is prior to the plurality (Priority of demarcation, above).
- The question “why don’t micro-experiences combine into one cosmic experience?” assumes combination is the default. But there is no default—boundaries must be grounded either way.
- The question “what prevents combination?” is replaced by “what grounds the boundaries that exist?”

6.6 Symbolic Formalization

6.6.1 Definitions

$\text{Perspective}(e) \triangleq \exists t \text{Token}(e, t)$

[A token is a center of appearing; “perspective” names it as such,
with no commitment to a subject or substance—see the Terminological note]

$\text{Token}(e, t) \triangleq$ “ e is an experiential token occurring at time t ”

$\text{Within}(x, e) \triangleq$ “Appearing-instance x is within token e ”

$\text{Accessible}(e_1, e_2) \triangleq$ “ e_1 and e_2 are mutually accessible as one experience”

[Primitive phenomenal relation—the statement’s own phrase, taken as basic.

Phenomenal vocabulary is ineliminable (I2); this relation is where I4 pays that bill rather than reducing it. Reflexive by its meaning: any token is one experience with itself, so $\neg \text{Accessible}$ entails $e_1 \neq e_2$; nothing here uses the converse.]

[Illustration, not definition: tokens accessible as one experience share their appearing-instances. Instance-membership does not define the relation—that would reduce phenomenal unity to quasi-structural co-membership, the kind of complete account I2 forbids—and instance-disjointness alone does not entail inaccessibility.]

[Character identity is irrelevant: two tokens with identical character are two experiences, not one; accessibility concerns being one experience, not resembling one.]

$\text{SimDistinct}(e_1, e_2, t) \triangleq \text{Token}(e_1, t) \wedge \text{Token}(e_2, t) \wedge \neg \text{Accessible}(e_1, e_2)$

[Simultaneous distinct tokens]

$\text{Bounded}(e) \triangleq \exists e' \exists t \text{SimDistinct}(e, e', t)$

[e has boundaries = some simultaneous token is not accessible to it as one experience]

$\text{Demarcates}(D, e_1, e_2) \triangleq$ “ D is that in virtue of which e_1 and e_2 are two tokens rather than one”

$\text{SubstDeterminate}(e) \triangleq$ “ e ’s token fact is determinate with genuine contrast—*this* experience rather than *that* (I

$\text{Actual}(e) \triangleq \text{Actual}(E(e))$ [I3’s actuality predicate; see I3’s Note on Actual and E]

$\text{Struct}(x)$ [as defined at I2: x is purely structural—specifiable without phenomenal vocabulary]

6.6.2 Axioms

Named principle (Substantive determinacy requires actual alternatives, from Lemma 4.1): $\text{SubstDeterminate}(e) \rightarrow \exists e' (E(e') \wedge \text{Actual}(e') \wedge e' \neq e)$ [The principle records Lemma 4.1’s result: such contrast requires the alternatives to be actual, not merely possible]. Substantive determinacy requires actual (not merely possible) experiential alternatives. This is deliberately a named principle rather than an axiom: no step of the derivation below consumes it (see the Note following the derivation). Its use is dialectical—it is what Objection 1’s response deploys against the counterfactual escape route.

Axiom 14 (Co-presence (the Observation in symbolic form)).

$$\exists e \exists t \exists e' (\text{Token}(e, t) \wedge \text{Actual}(e) \wedge \text{Token}(e', t) \wedge \neg \text{Accessible}(e, e'))$$

Some actual experiential token is co-present with a token not accessible to it. This is Observation 2 in symbolic form and no more: the Observation’s own indexical anchoring—one’s own token, now—supplies the witness, as step 1 of the derivation records. “Tokens other than one’s own” is declared to carry the non-accessibility content—tokens not accessible with one’s own as one experience; the symbol writes that declared content, with no membership analysis intervening. Its Actual conjunct restricts e to actual tokens; it does not derive co-presence from determinacy or from anything else. It is the sole premise of I4 that the solipsist denies—and denying even the instance is the solipsist exit.

Axiom 15 (Demarcation exists (from I3, Lemma 3.3; existence non-brute per Lemma 3.5/BA7)).

$$\text{SimDistinct}(e_1, e_2, t) \rightarrow \exists D \text{Demarcates}(D, e_1, e_2)$$

Simultaneous distinct tokens require a demarcation—something in virtue of which they are two rather than one (Lemma 3.3)—and the demarcation exists rather than being brute (Lemma 3.5, from BA7).

Axiom 16 (Demarcation is not purely structural (from I3, Lemma 3.4)).

$$\text{Demarcates}(D, e_1, e_2) \rightarrow \neg \text{Struct}(D)$$

No wholly structural item completely grounds the twoness of simultaneous tokens (Lemma 3.4). A demarcation may blend structural and non-structural elements; it cannot be purely structural.

6.6.3 Derivation

Token bridge (stated minimal commitment): $E(x) \rightarrow \exists e \exists t (\text{Token}(e, t) \wedge \text{Within}(x, e))$ —every appearing-instance is within some token dated at some time. Two disclosures. Occurrence-at-a-time is a stated minimal temporal-location commitment, not derived from P0, and carries no theory of time. Every token is itself an appearing-instance—the dated one the formalism’s $E(e)$ engages—but not every instance is a token: instances are *within* tokens, with Within admitting the improper case, and no *properly* contained instance is identical to its containing token, so internal complexity multiplies instances, never tokens. The witness route below needs neither disclosure’s general form, since the Observation’s “now” dates the witness directly. Rejecting the bridge costs only the general (non-indexical) route from ExpOcc; the witness route stands.

1. Let e^* be the reader’s own present, actual experiential token at time t^* [witness: the Observation’s own anchoring—“other than one’s own” presupposes one’s own token now; in general, ExpOcc supplies an appearing-instance and the Token bridge locates it within a dated token]
2. $\exists e' (\text{Token}(e', t^*) \wedge \neg \text{Accessible}(e^*, e'))$ [from 1, Axiom 14: its existential is witnessed at the Observation’s anchoring, e^* at t^*]
3. $\neg \text{Accessible}(e^*, e')$ [from 2, instantiation; $e' \neq e^*$ follows: Accessible is reflexive by its meaning—any token is one experience with itself—so non-accessibility entails non-identity; no appeal to extensionality]
4. $\text{SimDistinct}(e^*, e', t^*)$ [from 1, 2, 3, definition of SimDistinct]
5. $\text{Bounded}(e^*)$ [from 4, definition of Bounded]
6. $\exists D \text{Demarcates}(D, e^*, e')$ [from 4, Axiom 15]
7. $\exists D (\text{Demarcates}(D, e^*, e') \wedge \neg \text{Struct}(D))$ [from 6, Axiom 16]
8. $\therefore$ Real experiential boundaries exist: simultaneous distinct tokens, demarcated by what is not purely structural, non-brutely

Note on the named principle. Axiom 14 alone discharges I3’s antecedent; the named principle above is consumed by no derivation step, which is why it is not an axiom. Its work lies elsewhere. Lemma 4.1 establishes that merely possible alternatives could never have grounded substantive determinacy, foreclosing the counterfactual escape route a critic might otherwise take in place of accepting co-present actual tokens. The two routes are mutually reinforcing: determinacy shows the alternatives must be actual, observation shows they are co-present.

6.6.4 Conclusion

$\exists e_1 \exists e_2 \exists t (\text{SimDistinct}(e_1, e_2, t) \wedge \text{Perspective}(e_1) \wedge \text{Perspective}(e_2)) \wedge \forall e_1 \forall e_2 \forall t (\text{SimDistinct}(e_1, e_2, t) \rightarrow \exists D (\text{Demar}$

Discharges Inevitability 4. *There exist real experiential boundaries:* the first conjunct delivers existence—simultaneous distinct tokens, hence bounded tokens, since SimDistinct entails Bounded by definition—and the second delivers reality’s content: every such pair is demarcated by something (Axiom 15) that is not purely structural (Axiom 16). The demarcation’s existence is earned by Lemma 3.3, non-brutely per Lemma 3.5 (from BA7), and its $\neg$ Struct status by Lemma 3.4—axioms, not definitions: nothing here stipulates boundaries as non-structural, which would assume what the chain argues. *Distinct perspectives:* e_1 and e_2 are perspectives by the stated definition, so the statement’s noun appears in the formula carrying the Terminological note’s stipulation and nothing more. *Not mutually accessible as one experience:* the $\neg$ Accessible conjunct within SimDistinct, carried by the Observation’s content through Axiom 14—“other than one’s own” states the primitive relation’s negation directly—the statement’s phrase carries the declared content the symbol writes—and non-identity follows by reflexivity, with no appeal to extensionality. *Modal status:* the existential conjunct is discharged against the Observation of co-presence and binds everyone but the solipsist; the universal conjunct is conditional on BA7, through Lemmas 3.3 and 3.5—given the chain’s declared assumptions, it holds for every pair.

6.7 Objections Addressed

Objection (Solipsism). Perhaps only one experiential token exists. If so, there are no simultaneous alternatives, and I4’s derivation fails.

Response. This is correct, and it is acknowledged rather than resisted. The solipsist denies Observation 2, which is I4’s one stated observational input. Since the Observation is declared as observed rather than derived, denying it is not a logical error, and I4 offers no proof against it.

The denial does carry costs. The solipsist can retain determinacy only in the thin sense—being actual rather than merely possible—and Lemma 4.1 shows why that is thin: if “*that*” refers only to non-actual possibilities, the contrast has no actual ground. The solipsist must therefore accept that their experience’s determinacy is thin—actual and grounded in character (BA6, with I3’s ground supplying it), but lacking the substantive, contrast-involving determinacy Lemma 4.1 concerns. BA6 itself the solipsist keeps. Beyond the chain, solipsism carries its familiar independent burdens.

But the decisive point is not argumentative. The price of its solipsist direction is denying that anyone else is experiencing anything right now. I4 does not refute solipsism; it establishes that anyone who grants the datum is committed to real boundaries. Denial of the Observation is the sole acknowledged exit; solipsism is its first direction (see the Cosmopsychism response for the second).

Objection (Cosmopsychism). All experience is one cosmic experience. Individual perspectives are aspects of the one mind. There are no “simultaneous distinct tokens”—just one token with internal structure.

Response. This objection was addressed in the monist objection section (Objection 3); the split given there governs here.

Horn 1 (internal differentiation) splits on accessibility. If the aspects are mutually accessible as one experience, the claim is that your experience and mine are one experience—and each reader’s own datum denies it: others’ tokens are precisely what is not accessible as one experience with one’s own. That is denial of the Observation, the exit recorded at the solipsist response, at the mirrored price: the solipsist denies that other experience occurs; this route denies that any experience is other. If the aspects are not mutually accessible as one experience, they are distinct bounded perspectives in exactly I4’s sense—“aspect” relabels “token”—and the cosmopsychist has relocated boundaries inside the cosmic experience, not eliminated them; the demarcation question (Lemma 3.3) arrives unchanged.

Horn 2 (no internal differentiation). Determinacy is retained only in the thin sense—actual rather than contrasted—the position the solipsist response records, at the same cost; substantive contrast-determinacy (Lemma 3.2’s distinguishability requirement; Lemma 4.1) is unavailable.

Either way: concede I4’s boundaries, exit at the datum, or hold thin determinacy—each at its recorded cost, and the surveyed variant FAILS (see the framework survey):

- *Horn 1a:* Aspects accessible as one experience → Observation denied → exit at the datum, at recorded cost
- *Horn 1b:* Aspects not accessible as one experience → distinct bounded perspectives → I4 satisfied; the demarcation bill arrives (Lemma 3.3)
- *Horn 2:* No internal differentiation → thin determinacy only (Lemmas 3.2, 4.1) → FAILS (see the survey entry)

Objection (Dream Scenarios). In dreams, multiple perspectives seem to exist but are all generated by one mind. This shows: appearance of distinctness $\neq$ real distinctness.

Response. The dream case does not threaten I4.

If dream-characters have genuine interiority (genuine appearing within them), then real boundaries exist within the dream—the dream generates multiple simultaneous tokens.

If dream-characters lack genuine interiority, then only the dreamer’s perspective is real. But the *appearance* of multiple perspectives is itself a real experiential fact—a fact about appearing, so no wholly structural ground is complete for it (I2, Note on 3P Closure, with I3’s Ground-account link). The question I4 poses re-arises about the appearance itself: whatever demarcates the apparent perspectives within the dream is doing individuating work, and per Lemma 3.4 that work cannot be done by structure alone.

“Merely apparent” separation still requires a ground that is not purely structural for the appearance itself. The dream scenario doesn’t escape I4’s demand; it relocates it.

Objection (Unity Experiences). Meditative traditions report experiences where boundaries dissolve. This suggests boundaries are constructed, not fundamental.

Response. Unity experiences are compatible with I4:

- They are rare—most experience exhibits boundaries
- They are recognized *as* altered states—phenomenologically distinct from ordinary bounded experience
- They show boundaries can be *transcended*, not that they are *illusory*

Analogy: Walls are real even though they can be torn down. Boundaries being transcendable under special conditions does not show they are unreal in ordinary conditions.

I4 claims: In ordinary experience, boundaries are real and require a ground that is not purely structural. Unity experiences may reveal that boundaries are not *metaphysically ultimate*, but this is compatible with their being *real features* of ordinary experiences.

Objection (Vagueness). Boundaries are vague—where does my experience end? Split-brain cases, dissociative disorders, and unusual states suggest boundaries aren’t sharp. Maybe they’re not “real” in any robust sense.

Response. Vagueness is compatible with reality. Mountains are real even though there’s no precise point where they begin.

I4 claims boundaries are *real*, not that they are *sharp*. What I4 requires:

- Boundaries are not mere linguistic conventions
- Boundaries are not reducible to structural facts
- Boundaries are not eliminable by appeal to vagueness

Your pain determinately does not appear within my experience, even if edge cases have unclear boundary-status. Core cases suffice for I4.

6.8 Implications for Existing Frameworks

Each chapter’s survey covers only its own verdicts; where every framework left the chain is collected in the Conclusion’s constraint table.

Frameworks that FAIL at I4:

- **Idealism (generic):** Reality is fundamentally experiential (passes I2, I3). At I4 it owes a ground for perspectival boundaries within the fundamentally experiential, and as a bare family thesis it supplies no account of them—no account of boundaries is FAILS under this chapter’s criterion. Variants that articulate a boundary story are assessed on their own entries (Kastrup; undifferentiated cosmopsychism).
- **Undifferentiated cosmopsychism:**¹⁷ Claims one undifferentiated universal consciousness—a single cosmic experience, or a non-dual ground beyond subject and object—without internal experiential differentiation. At framework level the position takes the acknowledged exit: it denies the Observation—all experience is one token, so no token other than one’s own occurs (the far-side denial recorded at the solipsist paragraph). Measured against the criterion for what it still owes, it FAILS: it cannot ground even the appearance of perspectival separation, an experiential fact requiring a ground (BA7) that one undifferentiated experience lacks the resources to supply. Determinacy survives only in the thin sense; substantive contrast-determinacy (Lemma 3.2’s distinguishability requirement; Lemma 4.1) is unavailable. The most developed articulation supplies differentia dispositionally, but the differentiating profiles live within the manifested content rather than the undifferentiated ground, and the position’s own concluding concession is that the ultimate grounding of the multi-perspectival content admits only its most general statement—inheritance from manifested structure, or bruteness at the register where the demand lives.
- **Reflexive Monism (Velmans):** Holds consciousness is reflexive representation with first-

¹⁷The shape is anciently and widely held: the Advaita Vedanta / Perennial Philosophy tradition of an undifferentiated universal consciousness grounding all manifestation, given contemporary articulation in Albahari, M. (2019). Beyond Cosmopsychism and the Great I Am: How the World Might be Grounded in Universal ‘Advaitic’ Consciousness. In W. Seager (Ed.), *The Routledge Handbook of Panpsychism* (pp. 119–130). Routledge—who situates the position beyond cosmopsychism proper; the label here names the shape, not her placement. Developed further in Albahari, M. (2019). Perennial Idealism: A Mystical Solution to the Mind-Body Problem. *Philosophers’ Imprint*, 19(44), 1–37. Within cosmopsychism proper, priority cosmopsychism without the cosmic-subject assumption: Nagasawa, Y., & Wager, K. (2016). Panpsychism and Priority Cosmopsychism. In G. Brüntrup & L. Jaskolla (Eds.), *Panpsychism: Contemporary Perspectives* (pp. 113–129). Oxford University Press.

person and third-person as complementary perspectives.¹⁸ Survives I2 and I3 (posits “psychophysical” nature that is neither purely physical nor purely experiential; first-person and third-person are “complementary and mutually irreducible”). Fails at I4: What bounds one reflexive perspective from another? Velmans writes of “relatively differentiated parts... each with a unique, conscious view of the larger universe”—acknowledging perspectival differentiation. But when asked what *grounds* this differentiation, he appeals to “the location in space and time of a given observer, and the exact mix of perceptual, cognitive, affective, social, cultural and historical influences” (p. 156). These factors explain why perspectives have *different content*, but the *boundedness* itself—what makes *your* perspective inaccessible to *mine*—is grounded in structural differences: different brains in different locations processing different inputs. The non-structural “psychophysical” nature is posited for each mind, but the *individuation* of minds is structural—the subtraction test leaves nothing behind.

- **Hoffman’s Conscious Realism:**¹⁹ Posits consciousness as fundamental, with reality as a network of interacting conscious agents; physical objects are icons in a species-specific interface. Survives I2 (consciousness is fundamental, not reduced to structure) and I3 (conscious agents ground experiential determinacy).

This framework deserves more credit at I4 than it is usually given, and fails nonetheless. Hoffman does not ground boundedness in structure, and the entry should not be read as charging him with that. His agents are individuated by their qualia: a 1-agent’s experience space is a distinct set, and its qualia kernel maps that set to itself, so one agent’s experiences are formally inaccessible to another. Distinct experiential domains are *represented* in the formalism, and represented non-structurally.

The failure is that the distinctness is written into the setup rather than derived from it. Hoffman, Prakash and Prentner (2023) posit “a large, perhaps countably infinite, set of 1-agents, each with a unique quale.” Nothing in the theory makes the experience spaces disjoint rather than identical; the modeller assigns them. Under the Boundedness Criterion, this is a brute posit expressed in notation.

Two further considerations confirm the diagnosis, and the second is decisive. First, the combination and fusion machinery runs the wrong direction for I4: it addresses James’s question—how many subjects become one—and not its converse, what keeps one subject from another. Second, the formalism cannot distinguish two agents from one: the product of two agents itself satisfies the definition of a single conscious agent, so nothing in the theory fixes whether a given experiential domain is two bounded perspectives or one. That point stands on the formalism alone and would hold whatever Hoffman said about it. That he says the same is corroboration: he names Schrödinger’s “arithmetic paradox”—the world is one, but the subject seems to be many—among the problems that *might* be resolved if the connection between the many and the One could be grasped, and observes that the smaller units may be nothing but projections of the One. Allan’s (2022) challenge, that agents be carved up in a way that is neither parasitic on ordinary realist individuation nor unprincipled, remains unanswered by the framework’s own account.

- **Panpsychism (standard versions):**²⁰ Accepts fundamental experiential properties (micro-

¹⁸Velmans, M. (2012). Reflexive monism: Psychophysical relations among mind, matter and consciousness. *Journal of Consciousness Studies*, 19(9-10), 143–165.

¹⁹Hoffman, D. D. (2019). *The Case Against Reality: Why Evolution Hid the Truth from Our Eyes*. W. W. Norton. See also Hoffman, D. D. & Prakash, C. (2014). Objects of consciousness. *Frontiers in Psychology*, 5, 577, and Hoffman, D. D., Prakash, C., & Prentner, R. (2023). Fusions of consciousness. *Entropy*, 25(1), 129. For critical analysis of the individuation problem, see Allan, L. (2022). Hoffman’s Conscious Realism: A Critical Review. *Rational Realm*. <https://www.rationalrealm.com/philosophy/metaphysics/hoffman-conscious-realism.html>

²⁰For the combination problem, see Chalmers, D. J. (2016). The combination problem for panpsychism. In

subjects with micro-phenomenal qualities). Survives I2 (experience not reduced to structure) and I3 (fundamental experiential properties ground determinacy). Fails at I4: the “subject-summing problem.”²¹ As James (1890) put it: “Take a hundred of them, shuffle them and pack them as close together as you can... still each remains the same feeling it always was, shut in its own skin, windowless.” Even granting that micro-subjects exist and can combine, what determines *where* the boundaries of macro-subjects fall? Why do *these* micro-subjects constitute *your* perspective while *those* constitute *mine*? Proposed solutions face a trilemma: (a) “phenomenal bonding” relations—but what determines which micro-subjects are bonded? If physical proximity, the bonding relation fails the subtraction test: remove the facts about which micro-subjects are near which, and no individuating difference between *your* macro-subject and *mine* remains. If instead the bonding is primitive, it is brute. (b) Emergentist panpsychism—explicitly accepts brute emergence, violating BA7. (c) Appeal to hidden individuating properties—then either those properties individuate via structural facts (locations, relations: fails the subtraction test), or they are posited as primitively individuating (the brute posit again, BA7). A panpsychism that instead supplied genuinely non-structural, non-brute individuating properties would thereby meet I4’s demand—and would no longer be the standard version under review, having conceded that micro-experience alone was never the answer. “Experience everywhere” without account of differentiation = no account of boundaries.

- **Russellian monism:**²² Holds that physics describes only extrinsic/relational/structural properties; underlying these are intrinsic natures that are (or ground) phenomenal properties. Survives I2 (intrinsic natures are non-structural by definition) and I3 (intrinsic natures can ground experiential determinacy). Fails at I4: the framework provides no account of how intrinsic natures bound into distinct experiential centers. Physics specifies which fundamental entities bear intrinsic natures and how they relate structurally—but structure alone cannot ground experiential boundaries (per Lemma 3.4). The intrinsic natures themselves are posited as qualitative, not as inherently individuating (I3, Lemma 3.3, Character does not individuate). The question “What bounds *your* intrinsic natures from *mine*?” receives no answer. As with panpsychism, “experience everywhere” (now: “intrinsic natures everywhere”) without account of differentiation = no account of boundaries.
- **Property dualism (standard versions):**²³ Posits phenomenal properties as irreducible to physical properties, while holding that these properties supervene on physical substrates. Survives I2 (phenomenal properties are non-structural; the “what-it’s-likeness” is not capturable in functional/relational terms) and I3 (phenomenal properties are real additions to ontology). Fails at I4: the framework provides no account of what makes phenomenal properties *inherently bounded*. Different brains instantiate different phenomenal properties, but this grounds boundedness in structural distinctness of substrates. The question “What bounds *your* phenomenal properties from *mine*, apart from the fact that they supervene on different physical

G. Brüntrup & L. Jaskolla (Eds.), *Panpsychism: Contemporary Perspectives* (pp. 179–214). Oxford University Press. For the subject-summing problem specifically, see Goff, P. (2009). Why panpsychism doesn’t help us explain consciousness. *Dialectica*, 63(3), 289–311. For overview, see Goff, P., Seager, W., & Allen-Hermanson, S. (2022). Panpsychism. *Stanford Encyclopedia of Philosophy*.

²¹James, W. (1890). *The Principles of Psychology*. New York: Henry Holt.

²²For overview, see Alter, T. & Nagasawa, Y. (Eds.). (2015). *Consciousness in the Physical World: Perspectives on Russellian Monism*. Oxford University Press. See also Chalmers, D. J. (2016). Panpsychism and panprotopsyism. In G. Brüntrup & L. Jaskolla (Eds.), *Panpsychism: Contemporary Perspectives*. Oxford University Press.

²³Classic defenses include Jackson, F. (1982). Epiphenomenal qualia. *Philosophical Quarterly*, 32(127), 127–136; Chalmers, D. J. (1996). *The Conscious Mind: In Search of a Fundamental Theory*. Oxford University Press; Kim, J. (2005). *Physicalism, or Something Near Enough*. Princeton University Press.

systems?” receives no answer. Phenomenal properties are posited as qualitative, not as inherently individuating (I3, Lemma 3.3, Character does not individuate)—their boundedness is inherited from the structural boundaries of their substrates.

Epiphenomenalism — property dualism with the additional commitment that phenomenal properties are causally inert — fails here with its parent: the inertness adds nothing to the boundedness question, since ground and causal power are separate matters (I3), and the substrate-inherited boundedness that fails property dualism is untouched by the inertness commitment.

- **Substance dualism:**²⁴ Posits minds as non-physical substances, distinct from bodies and from one another. Survives I2 (the substance is not structural) and I3 (the substance and its states ground determinacy). Fails at I4: the multiplicity of substances is presupposed, not grounded. Boundaries between simultaneous perspectives are referred to the numerical distinctness of the substances themselves—but what individuates the substances? If their distinctness is primitive—the substances differ *solo numero*—the difference on offer is a bare index: either structural vocabulary, which cannot ground experiential demarcation (Lemma 3.4), or no difference-maker at all—a brute posit expressed in notation (BA7). If they are individuated by their association with distinct bodies or brains, the individuation is structural and fails the subtraction test: remove the facts about which substance pairs with which body, and no individuating difference remains. If by their mental contents, two substances could share qualitatively identical contents while remaining two—the contents presuppose rather than supply the count. A substance dualism that supplied a non-structural, non-brute principle of substance-individuation would thereby meet I4’s demand; no extant formulation does.
- **Neutral monism:**²⁵ Holds that reality is fundamentally neither mental nor physical; both mind and matter are derivative constructs from neutral entities (“sensations,” “events,” “pure experience”). Survives I2 (the neutral base is not purely structural; it underlies both physical structure and experiential quality) and I3 (neutral entities can ground experiential determinacy). Fails at I4: the framework provides no account of how neutral substance divides into bounded experiential centers. James holds that the same neutral element can belong to both “the perceiver” and “the perceived” depending on context—but what determines which groupings of neutral elements constitute bounded perspectives? The division into distinct “minds” is explained functionally—by which elements are associated with which—and functional association is specifiable in third-personal terms without phenomenal vocabulary, so the account fails the subtraction test. The neutral base supplies what the groupings are made of, not what makes one grouping a bounded perspective distinct from another. The question “What bounds *your* grouping of neutral elements from *mine*?” receives no answer citing a ground that is not purely structural.
- **Quantum Mind Theories (Stapp, etc.):**²⁶ Propose that consciousness plays a funda-

²⁴Classic statement: Descartes, R. (1641). *Meditationes de prima philosophia*. Contemporary defenses include Swinburne, R. (1997). *The Evolution of the Soul* (rev. ed.). Oxford: Clarendon Press; Foster, J. (1991). *The Immaterial Self: A Defence of the Cartesian Dualist Conception of the Mind*. London: Routledge.

²⁵Classic sources include Mach, E. (1886). *Die Analyse der Empfindungen und das Verhältnis des Physischen zum Psychischen*; James, W. (1904). Does ‘consciousness’ exist? *Journal of Philosophy, Psychology and Scientific Methods*, 1(18), 477–491; Russell, B. (1921). *The Analysis of Mind*. For overview, see Stubenberg, L. (2018). Neutral Monism. *Stanford Encyclopedia of Philosophy*.

²⁶Cf. Stapp, H. (2011). *Mindful Universe: Quantum Mechanics and the Participating Observer* (2nd ed.). Springer. <https://doi.org/10.1007/978-3-642-18076-7>. For philosophical analysis, see Chalmers, D. & McQueen, K. (2022). Consciousness and the Collapse of the Wave Function. In S. Gao (Ed.), *Consciousness and Quantum Mechanics*. Oxford University Press.

mental role in quantum collapse/actualization. Survives I2 (consciousness is non-physical and fundamental; Stapp’s “asking a question of nature” is a primitive conscious process, not purely structural) and I3 (consciousness as selection principle). Fails at I4: the framework posits multiple conscious agents—each interfacing with a brain to cause collapse—but provides no account of what individuates these agents. Brains serve as interfaces through which distinct consciousnesses operate, but this presupposes rather than explains the multiplicity. If asked “What makes conscious agent A distinct from conscious agent B, prior to their association with different brains?”, no answer is given. The multiplicity of conscious agents is primitive—brute numerical distinctness without ground, violating BA7.

- **Process Philosophy (Whitehead):**²⁷ Actual occasions are individuated by their unique *subjective aim* and bounded by their *satisfaction*. Unlike most frameworks examined here, this is explicitly designed to address boundedness, and the machinery of concrescence is a genuine mechanism rather than a label. Survives I2 and I3. Fails at I4 nonetheless, because the mechanism’s grounding input is supplied by an unexplained explainer: each occasion receives its initial aim from God’s *primordial nature*, and that primordial nature is itself an unexplained ordering of eternal objects. Without God, occasions have no basis for their specific subjective character; with God, the question “why *this* aim to *this* occasion rather than another?” is answered by a posit whose own content is unspecified.

Theism does not rescue the framework. The standard defense—that God’s primordial nature is metaphysically necessary within Whitehead’s system, and that necessary truths are not brute—conflates modal status with explanatory grounding. That something could not have been otherwise does not say what grounds it, and necessity of existence does not fix content: the specific ordering of eternal objects, and the specific aim assigned to a given occasion, remain unaccounted for. This is precisely what BA7 forbids; delegation to God relocates the brute posit rather than eliminating it.

Secularized reconstructions fare no better, facing a trilemma: (a) leave initial aims unexplained—brute, violates BA7; (b) replace God with another unexplained principle—relocates the problem again; (c) ground initial aims in prior occasions—infinite regress or structural grounding. The framework’s sustained attention to boundedness confirms I4’s importance; that its best available answer is a delegated brute posit illustrates the difficulty.

- **Dual-Aspect Monism (Pauli/Jung):** Posits mind and matter as two complementary aspects of a single underlying psychophysically neutral reality (the *unus mundus*). The mind-matter distinction arises through “epistemic splits” of this undivided ground.²⁸ Survives I2 (the underlying reality is not purely structural) and I3 (can ground determinacy).

Two things are owed to this framework before the verdict. First, Pauli identified the problem I4 poses, in a form that maps onto it directly. Criticizing Mach’s demand that nature be described only in terms of what is detectable here and now, he objects that on such terms “one does not understand anything: neither that a psyche must be assigned to others as well (detectable is always only one’s own) nor that different people talk about the same (physical) object,” and concludes that “one must therefore introduce structural elements of a cosmic order which are not detectable as such.” The parenthetical is a statement of mutual inaccessibility: the boundedness datum, correctly seen. Second, the resource Pauli reaches for is of the right ontological type. The “structural elements” are not structural in

²⁷Cf. Whitehead, A. N. (1929). *Process and Reality*. New York: Macmillan.

²⁸Cf. Atmanspacher, H. (2012). Dual-aspect monism à la Pauli and Jung. *Journal of Consciousness Studies*, 19(9–10), 96–120. The Pauli passage quoted below is from a letter to Jung of 31 March 1953, in von Meyenn, K. (ed.) (1999). *Wolfgang Pauli. Wissenschaftlicher Briefwechsel, Band IV, Teil II: 1953–1954*. Berlin: Springer, p. 96; translation by Atmanspacher.

this monograph’s sense (BA5a); they become the psychophysically neutral archetypes, which Pauli insists must be placed beyond the distinction of physical and psychic, and which Jung declines to designate as psychic at all—coining “psychoid” for that reason. An ordering principle that is not purely structural and non-mental is exactly the category an adequate answer would occupy, and few frameworks in this survey have one available.

Fails at I4 nonetheless, and not because the account is undeveloped. It is developed; it is developed toward a different question. Trace what the archetypes are given to do. In Atmanspacher’s reconstruction, their yield is mind-matter *correlation*: structural synchronicity, in which archetypes act as ordering factors with unidirectional influence on the mental and the material, establishing a baseline of robust psychophysical correlation; and induced synchronicity, in which changes in consciousness react back on the unconscious and thereby on the physical. Both concern how the two aspects covary within a perspective. Neither individuates perspectives. Ordering is not individuating, and no step in the apparatus converts one into the other.

Nor can the epistemic split supply what the archetypes do not, because the split is always indexed to a subject already present. Jung’s formulation has the *individual* discriminating the one world in order to be capable of conceiving it; the products of the split are distinct mental representations or categories—distinctions drawn *within* a mind, not boundaries drawn *between* minds. The framework explains how the mind/matter distinction emerges for a given subject. The existence of distinct subjects is presupposed by that very explanation.

A defender might answer that archetypal ordering operates on differing substrates, and that this yields distinct psyches. But archetypal ordering is uniform—it is precisely what is common across the split—so the answer fails the subtraction test: remove the facts about substrates and nothing individuating is left for the archetypes to have supplied. The framework’s position is therefore the one Russellian monism occupies: the non-structural element is posited as qualitative and as ordering, not as inherently individuating (I3, Lemma 3.3, Character does not individuate). Pauli asked the question and named the category of answer; the answer has not been given.

Frameworks that FACE PRESSURE at I4:

- **Kastrup’s Analytic Idealism:**²⁹ Posits reality as universal consciousness (mind-at-large) with individual minds as dissociated alters; physical reality is what universal consciousness looks like from outside. Survives I2 (experience not reduced to structure) and I3 (mind-at-large grounds experience).

Kastrup’s dissociation model proposes that individual perspectives arise through a self-reflective process whereby mind-at-large localizes attention, creating experiential boundaries analogous to dissociative identity disorder. This is a genuine attempt at a mechanism, not merely naming the problem.

The model *faces pressure* on its own structure: it specifies *that* boundaries arise—dissociative localization within an experiential medium—while leaving unanswered what determines *where* dissociation occurs. Three possibilities:

- (a) If dissociation correlates with physical bodies, boundedness is inherited from structural correlates—raising I4 concerns.
- (b) If dissociation is grounded in mind-at-large’s intrinsic nature alone, why *this* distribution of boundaries rather than another?
- (c) If dissociation is entirely non-structural but primitive, it risks being brute (BA7 con-

²⁹Cf. Kastrup, B. (2018). The universe in consciousness. *Journal of Consciousness Studies*, 25(5–6), 125–155.

cerns).

That is the middle tier’s definition exactly: a mechanism present, operating in the right ontological register, with its grounding question open. Kastrup says the same of his own model: “one would like to have a more formal, conceptual, explicit account of the process of dissociation”³⁰—corroboration of a diagnosis the trilemma already delivers, not its basis.

The framework has resources that might be developed further. Hence: **FACES PRESSURE**, not **FAILS**.

Frameworks that PASS at I4: None of the frameworks surveyed. The criterion is satisfiable—it demands no completed mechanism—but no framework surveyed here supplies a grounded account of demarcation that is not purely structural and not brute.

Summary of what survival requires:

- **No account at all** → **FAILS**
- **Brute primitive distinctness** (without ground) → **FAILS** via BA7
- **Structural account only** → **FAILS** via I4/Lemma 3.4
- **Account raises questions** (mechanism specified but incomplete) → **FACES PRESSURE**
- **Account whose ground is not purely structural and not brute** → **PASSES**

6.9 Scope and Limits

What I4 establishes: simultaneous distinct experiential tokens exist (given the Observation of co-presence), and every such pair is demarcated by something not purely structural and not brute. What I4 does not establish: what the demarcation *is*—no mechanism is proposed, since this is a diagnostic constraint, not a theory; where boundaries fall or why *this* distribution rather than another (I5’s question); that bounded perspectives are subjects, selves, or substances (see the Terminological note); whether the demarcating grounds unify with the actualization grounds into a single principle (see Unified or plural, I3’s Scope and Limits); or that boundaries are metaphysically ultimate—the Unity-experience response leaves reduction at some deeper level open while boundaries remain real features of ordinary experience.

6.10 Bridge to Inevitability 5

Inevitability 4 establishes: **Experiential boundaries are real—their demarcation is not purely structural and not brute.**

This raises: **What determines *where* boundaries form?**

Five options:

(A) Fully Determined by Structural Facts. Problem: Boundaries require a ground that is not purely structural (Lemma 3.4). A wholly structural determination of where boundaries fall would be a wholly structural ground for boundary-facts, which Lemma 3.4 rules out. Moreover, if boundaries were fully structurally determined, then given complete structural description, boundary-distribution would be fixed. But I2 showed structure doesn’t entail appearing; a fortiori, structure doesn’t entail how appearing is bounded.

³⁰Kastrup, B. (2024, January 1). Analytic idealism, UAPs, the Daimon, and a model of dissociation: challenges for 2024 [Blog post]. <https://www.bernardokastrup.com/2024/01/analytic-idealism-uaps-daimon-and-model.html>. Kastrup states in the same passage that no such account is available in the literature today, and identifies its development as the focus of his subsequent work.

(B) Fully Determined by Selection Principle’s Intrinsic Nature. Example: “The principle always bounds at biological organisms.” Problem: This makes boundary-distribution necessary given the principle’s nature. But boundaries vary (different organisms, split-brain cases, pathologies, altered states). If variation exists, the principle’s nature alone doesn’t fully determine boundaries.

(B’) Jointly fixed by structure and the selection principle together. This evades (B)’s variation objection—structure may supply the variation while the principle supplies the crossing. But the joint claim’s fixing power beyond structural entailment—which I2 excludes—resides in the non-structural component’s necessitating role, and that role faces (B)’s deeper demand where I5 treats the joint case directly as its Option C.

(C) Random/Arbitrary. Problem: Violates BA7 (anti-brute commitment). The specific distribution of boundaries would be brute—holding for no reason.

(D) Constrained but Not Fully Determined. The selection principle(s) operate within constraints (regularities, patterns) but don’t rigidly determine every boundary’s location.

Options (A), (B), (C) fail; (B’) is not closed here but handed to I5’s Option C. (D) is what remains—and it is I5’s to establish, not this bridge’s to assert.

I5 establishes: Actualization is neither arbitrary (every outcome grounded, BA7) nor fully fixed in advance (no purely structural fact-set entails the outcomes), and it does not collapse to a single inevitable outcome, with BA8’s attested coherence across outcomes.

“Coherence” refers to phenomenological regularity—the experienced orderliness of appearing—not to structure in the sense defined by I2/BA5a.

6.11 Summary

Aspect	Status
Logical form	Valid deduction from Observation 2 + Lemma 4.3 + I3's Lemmas 3.3–3.5 + Axioms 14–16; BA6 with Lemmas 3.2, 4.1, 4.2 carries the independent dialectical route
New assumption	None —no background assumption is added; one local observation (co-presence) and three point-of-use commitments (token bridge; named principle; synchronic premise) are declared as stated inputs
Observation	Co-presence: tokens other than one's own occur now. Observed, not derived; local to I4; denying it is the recorded exit
Lemma 4.1	Substantive determinacy requires actual alternatives (not merely possible)
Lemma 4.2	Succession does not supply the alternatives; given the Observation, they are co-present
Lemma 4.3	Co-present alternatives = simultaneous distinct tokens
Key innovation	Requirement of actual alternatives argued from determinacy (Lemma 4.1, dialectical); existence and co-presence of distinct tokens observed, not derived
Modal status	Binds anyone who grants co-presence; not forced against all comers
Monist objections	Three versions addressed; differentiation splits on accessibility—concede I4 or exit at the datum
Combination problem	Reframed: not “how combine?” but “what grounds boundaries?”
Criterion	What grounds boundaries between simultaneous experiential tokens?
Frameworks	Most FAIL; Kastrup alone FACES PRESSURE; none surveyed PASS
Bridge to I5	(A), (B), (C) fail; (B') and (D) handed to I5

7 Inevitability 5: Actualization Is Neither Fully Fixed Nor Arbitrary

Inevitability 5 (Actualization Is Neither Fully Fixed Nor Arbitrary). *Actualization is neither fully fixed in advance nor arbitrary: it operates under real, non-trivial constraints without collapsing to a single inevitable outcome.*

What this chapter must establish. The statement above is this chapter’s obligation. Its load-bearing elements: that actualization is not *fully fixed in advance*—no accumulation of structural facts logically entails the experiential outcomes; that it is not *arbitrary*—every outcome beyond the bare occurrence of experience has a ground (BA7); and that it is *constrained*, non-trivially—the actual outcomes collectively exhibit a grounded pattern (BA8’s coherence, which admits anomalies), with no collapse to exactly one.

Note: This inevitability addresses the distribution question raised at the end of I4. Given that experiential boundaries are real and every simultaneous distinct pair is demarcated by something not purely structural (I4), we now ask: What is the *character* of actualization itself? Is it fully fixed by prior conditions, purely arbitrary, or something else?

Clarification of scope: I5 does not specify *what* constrains actualization, nor does it commit to any particular theory of causation or modality. It establishes only that actualization operates in a “middle mode”—neither the complete fixedness of structural determination nor the complete arbitrariness of brute occurrence. This constrained-but-open character is an inevitable feature of actualization, whose grounds are not purely structural (I3).

Terminological note: “Fixed in advance” means: every experiential outcome is logically entailed by structural facts—the formal definition of Fixed below governs this term throughout. The analysis is in terms of entailment, not temporal priority; I5 is therefore neutral across temporal metaphysics, eternalism included. “Arbitrary” means brute—some outcome obtains with nothing in virtue of which it obtains. “Coherence” refers to phenomenological regularity—the experienced orderliness of appearing—not to structure in the sense defined by I2/BA5a.

7.1 Assumptions

This inevitability builds from the Foundational Premise, I2, I3, and I4, and adds one background assumption.

7.1.1 From Prior Derivations

ExpOcc: There is at least one instance of appearing. [FP; consumed in *D*’s definition, Symbolic Formalization]

I1: Experience makes an ontological difference—reality-with-experience $\neq$ reality-without-experience. (*Carried transitively; this chapter’s derivation cites I2, I3, and I4, not I1 directly.*)

I2: Appearing cannot be exhaustively accounted for by structure alone. I2’s conclusion has three conjuncts: the difference experience makes (I1) is carried forward; appearing is not purely structural ($\neg \text{Struct}(\text{App})$); and structural facts do not logically entail appearing ($\neg \text{LogEntails}(\text{StructFacts}, \text{App})$). I2’s defended premise (its Axiom 8, not its result): appearing is constitutively first-personal—the *for*-relation (appearing-*for*-a-perspective) is part of what appearing *is*.

I3: Experience is determinate, and determinacy requires a principle of selection. For each token instance of appearing, a ground exists that is not purely structural (SelPrin). BA7 (anti-brute commitment): any experiential fact other than the bare occurrence of experience has an ontological ground—see the SelPrin/BA7 division note under I3’s Conclusion.

I4: Simultaneous distinct experiential tokens exist (given the Observation of co-presence), and every such pair is demarcated by something not purely structural and not brute. Distinct perspectives are not mutually accessible as one experience. Where boundaries fall—the distribution question—is routed to this chapter by I4’s Scope and Limits and its Bridge.

7.1.2 Background Assumption

Background Assumption 8 (Experiential coherence). Experience exhibits coherence across its instances. Experiential content is patterned, regular, and constrained—not chaotic, random, or arbitrary.

Clarification: BA8 is phenomenologically evident. Your visual field right now exhibits stable spatial relations, color constancy, and coherent object boundaries. Your thoughts connect to prior thoughts; your memories are organized. Even in dreams, experience exhibits narrative coherence, causal structure, and recognizable patterns. Experience is not a random jumble of disconnected qualia.

What BA8 does *not* claim:

- That experience is perfectly orderly (anomalies, surprises, and irregularities occur)
- That we can fully articulate the constraints governing experience
- That coherence is the same as predictability
- That coherence implies determinism

What BA8 *does* claim:

- Experience is ordered, not chaotic
- Regularities obtain—similar conditions tend to yield similar experiential patterns
- Whatever actualization does, it does not produce arbitrary noise

Defense. Consider the alternative: experience that is genuinely random—no patterns, no regularities, no coherence. Each moment would be utterly disconnected from the last. This is not what we find. Even unusual experiences (hallucinatory states, altered consciousness) exhibit internal coherence—they are strange *in specific ways*, not random in all ways. BA8 captures this minimal but undeniable feature.

7.1.3 Definition of Key Terms

- **Structural determination:** The complete specification of an outcome by prior structural states via laws/regularities that are themselves structural. If X is structurally determined, then the complete structural description of prior conditions, plus structural laws, logically entails X .
- **Fixed in advance:** Every experiential outcome is logically entailed by structural facts (the formal Fixed below). This is the governing sense throughout; the worry that something *non-structural* might necessitate all outcomes is addressed separately, in Lemma 5.1’s extension, under BA7.

- **Arbitrary:** Brute, ungrounded, occurring for no reason. If X is arbitrary, there is nothing in virtue of which X occurs rather than some alternative.
- **Constrained:** The actual outcomes are plural and patterned without being structurally entailed: coherence across the actual outcomes together with their plurality (formally, $\text{Coherent} \wedge \neg \text{Singleton}$, with $\neg \text{Fixed}$ standing as its own conjunct). The constraint is real in BA7's sense: the pattern across instances is itself an experiential fact beyond bare occurrence, hence grounded (membership in D holds by inspection: the pattern-fact's statement essentially involves appearing occurring, it obtains by BA8, and it is not the bare occurrence), and that ground is what constrains—actual, and of whatever category (a feature, law, or aspect of reality as much as a thing; I3's BA7 clarification). Exclusion talk is cashed actualistically: the actual outcomes collectively exhibit the pattern—BA8's coherence, order and regularity admitting anomalies, not per-outcome rule-conformity—and this coherence is grounded rather than accidental (BA7), not measured against unactualized possibilia.
- **Coherent:** Exhibiting pattern and regularity across instances.

7.2 Defense of Key Principles

Before the derivation, three lemmas require explicit defense.

7.2.1 Lemma 5.1: Actualization Cannot Be “Fixed” in the Structural Sense

Claim: Since structural facts do not logically entail experiential outcomes (I2, generalized at Lemma 5.5), actualization cannot be fully fixed by prior structural states.

Derivation. “Fixed in advance” means: given complete structural description of prior states + structural laws $\rightarrow$ outcome is entailed.

But per I2: Structural facts do not entail appearing.

Per I3's Lemma 3.1: If StructFacts do not entail App, they do not entail “App $\wedge$ App has character C ” for any specific C .

Therefore: Structural facts + structural laws cannot fully determine *which* experience occurs or *what specific character* it has; the generalization to every experiential fact—boundedness included—is Lemma 5.5's work in the Symbolic Formalization, which the main derivation consumes.

If actualization were “fixed” by structure, then:

- Given complete structural description, experiential outcome would be entailed
- But I2 shows this is impossible—structure $\not\vdash$ appearing
- Therefore actualization is not fixed by structure

Extension to non-structural “fixedness.” Could actualization be fixed by non-structural facts?

Consider: The selecting grounds are not purely structural (SelPrin). Could they themselves necessitate specific outcomes, so that actualization is “fixed” in a non-structural sense?

Two sub-cases:

(a) **The selecting grounds have an invariant nature that necessitates a single outcome.** Problem: Per I4, simultaneous distinct bounded perspectives exist (formalized as Lemma 5.4)—at least two outcomes obtain. A nature that necessitated exactly one outcome is refuted by the plurality itself; a nature said to necessitate the whole plural distribution is the hyper-necessitarian move, addressed below.

(b) **The selecting grounds + structural conditions together necessitate outcomes.** The structural component can figure: nothing in the chain forbids its playing a partial constraining role—I2’s result is non-entailment, not non-involvement. What it cannot do is the selecting alone: no structural fact-set entails the outcomes (Lemma 5.5), and selection is not structure’s work alone (I3). The selective work in the joint necessitation therefore belongs to the non-structural element—and if that element is itself said to fix everything, we return to (a).

Critical clarification (dependence on BA7, and the claim’s honest scope). The move from “not structurally fixed” to “not fixed in any sense” depends essentially on BA7 (anti-brute commitment), and it reaches only the brute version. A hyper-necessitarian might claim: the selecting grounds’ natures, together with the total actual world state, necessitate all experiential outcomes—the plurality established by I4 is exactly what those natures prescribe for those differing conditions. If that necessitation is primitive and unexplained—“it’s just in the natures”—it posits brute further facts about the total experiential distribution, exactly what BA7 excludes. But if the necessitation is grounded, BA7 has no complaint, and I5 does not manufacture one: grounded necessitation of the plural distribution is compatible with this chapter’s conclusion. It is not structural fixedness—no purely structural fact-set entails the outcomes (Lemma 5.5)—and it is not what “fixed in advance” means here (the Terminological note’s entailment sense). The outcomes would remain plural ($\neg$ Singleton), patterned (Coherent), grounded ($\neg$ Arbitrary), and structurally unentailed ($\neg$ Fixed): Constrained, in this chapter’s sense. What the extension rules out is therefore exactly the brute version and no more.

Conclusion. Actualization is not “fixed in advance” structurally, and not brutally fixed non-structurally. Grounded necessitation of the distribution, if any, is not fixedness in this chapter’s sense (see the Critical clarification).

7.2.2 Lemma 5.2: Actualization Cannot Be Arbitrary

Claim: Actualization is not brute/arbitrary.

Derivation. Arbitrary means: some experiential outcome beyond bare occurrence has no ground—nothing in virtue of which it obtains. From BA7 (anti-brute commitment): every such outcome has a ground; brute experiential facts are ruled out. An arbitrary outcome would be exactly such a brute fact. Therefore actualization is not arbitrary.

Two clarifications. BA8’s coherence is congruent with this result—patterned outcomes are what grounded actualization looks like—but the elimination runs on BA7 alone. And bruteness is not absence: what BA7 excludes is the demarcation’s bruteness, not its being a demarcation. Existence is not thereby independent of BA7—demarcation-existence is BA7’s own deliverable (I3, Lemma 3.3), and rejecting BA7 leaves brute twoness, the recorded alternative, not a standing existence claim.

7.2.3 Lemma 5.3: The Constrained Middle

Claim: Actualization is constrained but not fully fixed.

Derivation. From Lemma 5.1: Not fixed. From Lemma 5.2: Not arbitrary.

These exhaust the extreme positions. What remains? A grounded-but-unconstrained remainder—every outcome grounded, no pattern across them—is closed by BA8 with I4’s plurality: the outcomes are plural and exhibit coherence across instances, so the distribution is not patternless.

Constrained actualization: The actual outcomes are plural, patterned, and grounded. The constraints are real: BA8’s coherence is itself an experiential fact beyond bare occurrence, so by BA7 it has a ground, and that ground is the constraint—what the pattern holds in virtue of. The constraints do not collapse the outcomes to one—I4’s plurality stands—and they are not idle: the actual outcomes collectively exhibit the grounded pattern (BA8’s sense, admitting anomalies), and the patterned plurality is neither everything-goes nor a single inevitable outcome.

Analogy. Consider a kayaker navigating a river. The banks constrain the kayaker absolutely—she cannot paddle through solid rock or travel upstream against the current. The river’s structure is fully deterministic: the banks are where they are, the current flows as physics dictates. Yet within those constraints, the kayaker makes genuine selections among available paths. She chooses to avoid that rock, to ride this eddy, to take the left channel rather than the right.

This selection is:

- **Grounded, not arbitrary:** She chooses for reasons (safety, efficiency, preference)
- **Not fixed by the constraints:** The banks don’t determine which line she takes
- **Real, not illusory:** Her choices make actual differences to her trajectory

The kayaker analogy illuminates how determinism and openness coexist without contradiction. The structural level (river topology, physics of water flow) is fully deterministic. The actualization level (which path is taken) is genuinely open within those structural constraints. Neither level reduces to the other; both are real.

Similarly: Structural conditions may figure among the constraints within which actualization operates—certain structures correlating with certain broad types of experience (BA8’s regularities; a partial role the chain permits without establishing, Lemma 5.1’s extension). But structure cannot be the complete ground of the selection (I3), cannot be the whole ground of boundaries (I4), and does not entail which experience occurs (I2). Selection operates within structural constraints without being exhausted by them—like the kayaker within her banks.

7.3 Natural-Language Derivation

Goal: Show that actualization is neither fully fixed in advance nor arbitrary—it exhibits coherent pattern without any purely structural fact-set entailing the outcomes.

7.3.1 Step 1: Recap of the selection principle’s status

From I2: Appearing is not purely structural. From I3: Determinacy requires a principle of selection—for each token, a ground that is not purely structural (SelPrin). From I4: Real experiential boundaries exist, each pair of simultaneous distinct tokens demarcated by something not purely structural; whether the selecting and demarcating grounds unify is deferred (Unified or plural, I3).

The question now: What is the *character* of this actualization?

7.3.2 Step 2: “Fixed in advance” requires structural or brute necessity

What would it mean for actualization to be “fixed in advance”?

Option A: Structurally fixed. Given complete structural description of the world, the experiential outcome is entailed. But per I2, structure does not entail appearing. This option is ruled out.

Option B: Non-structurally fixed by the selecting grounds' intrinsic nature. The grounds' nature alone determines a single inevitable outcome. But per I4, simultaneous distinct bounded perspectives exist—at least two outcomes obtain (Lemma 5.4), so no nature necessitates exactly one. And treating “the nature necessitates this entire distribution” as primitive and unexplained would violate BA7's anti-brute commitment (Lemma 5.1's extension).

Option C: Fixed by structure + the selecting grounds together. Any fixing power the conjunction has beyond structural entailment—which Lemma 5.5 excludes—belongs to the non-structural component, so the joint case reduces to Option B and is assessed there and in Lemma 5.1's extension.

Therefore: Actualization is not fixed in advance.

7.3.3 Step 3: Arbitrary actualization violates prior commitments

What would it mean for actualization to be arbitrary?

If arbitrary: experiential outcomes would be brute facts—no ground, no reason for this outcome rather than another.

But per BA7: Experiential determinacy has a ground. Brute experiential facts are ruled out. This covers demarcation facts as much as any others: a boundary falling where it does with no demarcating ground would be a brute experiential fact—what BA7 excludes is that bruteness, not demarcation as such.

BA8's coherence is congruent: patterned outcomes are what grounded actualization looks like. But the elimination needs only BA7.

Therefore: Actualization is not arbitrary.

7.3.4 Step 4: The constrained middle follows

If actualization is neither fixed nor arbitrary, what remains?

The answer: *Constrained actualization*.

- Constraints are real: Coherence (BA8) is not accidental but grounded (BA7)—the banks of the river are where they are. Structural conditions may figure among the conditions within which actualization operates (a permitted role, not an established one—Lemma 5.1's extension); what BA8 attests is correlation, not entailment.
- Constraints are not complete determination: The constraints do not collapse the outcomes to one. Genuine openness remains—the kayaker selects her path.
- Constraints are non-trivial: the actual outcomes collectively exhibit a grounded pattern (experience is coherent, not patternless), while the outcomes remain plural and structurally unentailed.

This is not a mere label for ignorance (“we don't know what determines it”). It is a positive characterization: actualization operates in a mode that is neither mechanical fixedness nor chaotic randomness. The kayaker on the river is neither a passive leaf carried by current (fully determined) nor randomly teleporting about (arbitrary). She navigates—constrained by the river's structure, yet genuinely selecting within those constraints.

This picture dissolves the apparent dichotomy between determinism and openness. The structural level can be fully deterministic (the river's physics) while the actualization level exhibits genuine selection (the kayaker's choices). These are not competing descriptions of the same thing; they operate at different ontological levels. I2 established that appearing is not purely structural; I5 establishes that actualization has this constrained-but-open character.

7.3.5 Step 5: Coherence reflects constraints; openness reflects the character of the grounds

The coherence of experience (BA8) is grounded (BA7), and the pattern's ground is the constraint. BA8 attests that similar conditions tend to correlate with similar experiential patterns—correlation, not entailment; whether and how structural conditions figure in that ground is left where Scope and Limits leaves it.

The openness of actualization is explained by the character of its grounds (I2, I3): what is not purely structural cannot be fully fixed by structure alone. What is not brute is not arbitrary. The middle ground—constrained but open—is what remains.

7.3.6 Step 6: Conclusion

Actualization is neither fully fixed in advance (no purely structural fact-set entails the outcomes) nor arbitrary (every outcome beyond bare occurrence is grounded). It operates under real, non-trivial constraints—the actual outcomes collectively exhibit a grounded pattern, and they do not collapse to one—without a single inevitable outcome.

7.4 Symbolic Formalization

7.4.1 Definitions

$\text{Grounds}(X, Y) \triangleq$ “ X is the ontological basis in virtue of which Y obtains”

[the chain’s definition of the predicate, matching BA7’s own phrasing; completeness is not built in—where an argument needs the complete ground, it says so locally. I3’s Selects is the complete-grounding special case:
 $\text{Selects}(X, \varphi) \rightarrow \text{Grounds}(X, \varphi)$]

$\text{ExpFact}(X) \triangleq$ “ X is a fact of experiential appearing—one whose statement essentially involves appearing occurring”

[includes facts of form “experience with character C occurs in perspective p ”, and demarcation facts—where a boundary between simultaneous distinct tokens falls (I4): specifying where appearing is bounded requires phenomenal vocabulary, and the demarcating grounds are not purely structural (I4);
“essentially involves” is read factively— X obtains only if appearing occurs—so facts that merely mention appearing (a law’s conditional content, a meta-fact about appearing) are not members, nor are facts of appearing’s *absence*]

$\text{Obtains}(X) \triangleq$ “the fact X holds”

$D \triangleq \{X : \text{ExpFact}(X) \wedge \text{Obtains}(X) \wedge X \neq \text{ExpOcc}\}$

[the obtaining condition makes explicit what the glosses already assume:
 D collects the actual experiential outcomes, not candidate contents]

[the outcome domain: the experiential facts beyond the bare occurrence of experience—BA7’s range, restricted further by ExpFact’s absence exclusion (this formalism’s domain convention, not BA7’s content)]

$\text{Fixed} \triangleq \forall Y \in D : \exists \Sigma (\text{Struct}(\Sigma) \wedge \text{LogEntails}(\Sigma, Y))$

[actualization is fixed iff every outcome is logically entailed by some structural fact-set; Struct(Σ) for a fact-set: every member is structural—I2’s fact-level predicate, distributed]

$\text{Arbitrary} \triangleq \exists Y \in D : \neg \exists Z (\text{Grounds}(Z, Y))$

[actualization is arbitrary iff some outcome lacks any ground]

$\text{Coherent} \triangleq$ the experiential facts exhibit pattern and regularity across instances

$\text{Singleton} \triangleq |D| = 1$

[exactly one such fact obtains—a count of the actual outcomes, not a modal claim]

$\text{Constrained} \triangleq \text{Coherent} \wedge \neg \text{Singleton}$

[the actual outcomes are patterned and plural; the constraint’s reality is BA7’s grounding of the coherence fact—see Key Terms]

$\text{OpenActualization} \triangleq \neg \text{Fixed} \wedge \neg \text{Arbitrary} \wedge \text{Constrained}$

Note on the domain. D is a class of facts, not a principle treated as a term. I3’s SelPrin is a statement—for every token of appearing, a not-purely-structural ground exists—and whether the

grounds it quantifies over unify into one principle or remain plural is deferred (Unified or plural, I3's Scope and Limits). The definitions above therefore attach to the outcome class directly and are neutral on that question.

7.4.2 Axioms

Axiom 17 (Anti-brute commitment (from BA7)).

$$\forall X(X \in D \rightarrow \exists Y(\text{Grounds}(Y, X)))$$

Every experiential fact beyond the bare occurrence of experience has a ground. The bare-occurrence exemption is BA7's own, built into D 's definition; D 's further exclusion of absence-facts narrows the axiom's domain below BA7's full range—the safe direction, consuming less than BA7 supplies.

Axiom 18 (Experiential coherence (from BA8)).

Coherent

The experiential facts exhibit pattern and regularity across instances.

Lemma (5.4 — Plurality of Outcomes from Bounded Multiplicity). *From I4's conclusion, simultaneous distinct experiential tokens e_1, e_2 exist. Their occurrence-facts are distinct experiential facts even under identical character, since the tokens are numerically distinct (I4; distinct tokens yield distinct occurrence-facts by fact individuation). Both belong to D , and neither is the bare occurrence of experience. Therefore:*

$$|D| \geq 2, \text{ hence } \neg \text{Singleton}$$

Derivation of Lemma 5.4.

1. From I4: $\exists e_1 \exists e_2 \exists t (\text{SimDistinct}(e_1, e_2, t))$ [I4 conclusion]
2. $e_1 \neq e_2$, so the facts $E(e_1)$ and $E(e_2)$ are distinct experiential facts—distinct even if the tokens are character-identical, since I4's route to token-distinctness is non-accessibility with reflexivity (no appeal to character), and distinct tokens yield distinct occurrence-facts by fact individuation [I4 for token distinctness; fact individuation under I2's facts-as-true-propositions convention]
3. Each is a determinate token-occurrence fact, not the bare occurrence of experience, so each belongs to D [definition of D]
4. Therefore $|D| \geq 2$: $\neg \text{Singleton}$ [definition of Singleton]

Illustrative support. The formal derivation is self-sufficient, but the plurality it establishes is also observable: many organisms have their experiences at once—co-present bounded tokens in abundance. Boundary phenomena (split-brain alteration, dissociative plasticity, altered states) further illustrate that where boundaries fall is a substantive matter; the lemma itself needs none of this, and in particular does not claim that the same structural conditions yield different outcomes (see the Note below).

Note on what the lemma does not need. The lemma requires only that at least two outcomes obtain. It does not require that the tokens differ in content, and it does not require the stronger claim that the *same* structural conditions could yield different experiential outcomes—that claim is phenomenologically supported but does no work here. Plurality of numerically distinct token-facts suffices.

Lemma (5.5 — Generalized Non-Entailment). *Every experiential fact logically entails App: by ExpFact’s definition its statement essentially involves appearing occurring, and facts are true propositions (I2’s convention), so any ExpFact’s obtaining requires that appearing occurs—LogEntails(X , App) for every ExpFact X (writing a single fact for its singleton set in LogEntails’ first argument, here and wherever a fact takes that position), from the definition and the convention alone. LogEntails is transitive. So if LogEntails(StructFacts, X) for any ExpFact X , then LogEntails(StructFacts, App)—contradicting I2’s conclusion. Therefore:*

$$\forall X (\text{ExpFact}(X) \rightarrow \neg \text{LogEntails}(\text{StructFacts}, X))$$

7.4.3 Derivation

1. $\forall X (\text{ExpFact}(X) \rightarrow \neg \text{LogEntails}(\text{StructFacts}, X))$ [Lemma 5.5, from I2]
2. $|D| \geq 2$, hence $\neg \text{Singleton}$ and D is non-empty [Lemma 5.4, from I4]
3. $\forall Y \in D : \neg \text{LogEntails}(\text{StructFacts}, Y)$ [from 1, since $D \subseteq \text{ExpFacts}$ by definition]
4. $\forall Y \in D : \neg \exists \Sigma (\text{Struct}(\Sigma) \wedge \text{LogEntails}(\Sigma, Y))$ [from 3, by monotonicity: any structural Σ is included in StructFacts, so entailment by Σ would give entailment by StructFacts]
5. $\neg \text{Fixed}$ [from 2 (non-emptiness), 4, definition of Fixed]
6. $\forall X (X \in D \rightarrow \exists Y (\text{Grounds}(Y, X)))$ [Axiom 17, from BA7]
7. $\neg \text{Arbitrary}$ [from 6, definition of Arbitrary: no member of D lacks a ground]
8. Coherent [Axiom 18, from BA8]
9. Constrained [from 8, 2, definition of Constrained]
10. $\neg \text{Fixed} \wedge \neg \text{Arbitrary} \wedge \text{Constrained}$ [from 5, 7, 9]
11. OpenActualization [from 10, definition]

7.4.4 Conclusion

$$\neg \text{Fixed} \wedge \neg \text{Arbitrary} \wedge \text{Constrained}$$

Discharges Inevitability 5. *Neither fully fixed in advance:* $\neg \text{Fixed}$, derived from I2’s non-entailment generalized to all experiential facts (Lemma 5.5) with the monotonicity bridge at step 4—no purely structural fact-set logically entails any outcome. *Nor arbitrary:* $\neg \text{Arbitrary}$, from BA7 over D —the bare occurrence of experience is exempted by D ’s own definition per BA7’s stated range (D is further narrowed by the absence exclusion, consuming less than BA7 supplies). *Real, non-trivial constraints without collapsing to a single inevitable outcome:* Constrained—the actual outcomes exhibit coherence (BA8) and are plural (I4 via Lemma 5.4), and the constraint is real in BA7’s sense: the coherence fact is itself an experiential fact beyond bare occurrence, hence grounded, and that ground is the constraint. The statement’s exclusion reading is carried actualistically: the actual outcomes collectively exhibit the pattern—BA8’s coherence, which admits anomalies without ceasing to be coherence—and that coherence is grounded, not accidental. Collapse to one is excluded by $\neg \text{Singleton}$, and fixedness in advance by $\neg \text{Fixed}$. The actualization so characterized is the selection I3 established: for each token of appearing, a ground that is not purely structural (SelPrin); this chapter fixes that selection’s modal character and adds nothing to its ontology. Modal status: conditional on BA7 and BA8 as declared assumptions and on I4’s Observation of co-presence, which the Constrained conjunct inherits through Lemma 5.4’s plurality and $\neg \text{Fixed}$ inherits through D ’s non-emptiness (step 5, from Lemma 5.4; any single token-occurrence fact—the reader’s own—already secures non-emptiness, so $\neg \text{Fixed}$ does not depend on the Observation); given these, unconditional.

Corollary (Distribution of demarcations). Demarcation facts fall within D (see the definition of ExpFact). The conclusion’s per-fact components therefore apply to each: no demarcation fact is logically entailed by structural facts (step 3), and each has a ground (step 6); collectively they participate in the constrained pattern (Constrained is a global conjunct of the outcomes, not a per-fact predicate). Where boundaries fall is thus neither structurally entailed nor arbitrary. This receives the question routed here by I4’s Scope and Limits and its Bridge; whether the demarcating and selecting grounds unify remains where I3’s Unified or plural left it, together with the coordination obligation stated there.

7.5 Objections Addressed

Objection (Hard Determinism / Laplacean Demon). Everything is fixed by prior causes. A Laplacean demon with complete knowledge of physical states could predict all future states, including experiences. The appearance of openness is just ignorance.

Response. Hard determinism concerns *structural* determination—physical states evolving according to physical laws. Per I2, this structural determination does not extend to appearing.

The Laplacean demon knows all structural facts. Per Lemma 5.5, the demon’s knowledge does not entail any experiential fact. The demon knows physical states of brains but cannot derive *what it is like* to be those brains—because appearing is not purely structural, and the remainder is exactly what structural knowledge does not deliver.

Even if physical evolution is deterministic, this doesn’t make experiential actualization “fixed.” The physical constraints are real, but they don’t collapse the outcomes to one.

The hard determinist who claims “experiences are just physical states” has failed at I2. If they grant I2 (experience is not purely structural), then determinism about structure doesn’t entail determinism about actualization.

Hard determinism about structure is compatible with genuine openness in actualization. I5 does not deny structural determinism; it establishes that structural determinism does not extend to the non-structural level of appearing.

Objection (Block Universe / Eternalism). All times are equally real. There is no “becoming” or genuine actualization—just the eternal block of spacetime. Past, present, and future equally exist. Nothing is “selected”; everything just *is*.

Response. The objection assumes “fixed in advance” means temporal or modal settledness. I5’s analysis is in terms of entailment: Fixed, by its definition, requires a purely structural fact-set to logically entail the experiential outcomes, and per I2—generalized at Lemma 5.5—none does, however complete the structural description and however many times it spans. Eternal obtaining is not structural entailment.

An eternalist can therefore grant I5 in full: the block, if that is the true metaphysics of time, contains experiential facts that its structural facts do not entail, that are not brute, and that are non-trivially constrained. I5 is neutral across temporal metaphysics; see the Terminological note.

Objection (Libertarian Free Will). I5 sounds like libertarian free will—non-determined choices. But libertarian free will is mysterious; how can something be neither determined nor random?

Response. I5 is not a theory of free will. It concerns the character of experiential actualization, not voluntary action specifically.

However, I5 does occupy similar logical space: neither determined nor arbitrary. The “mystery” dissolves when we recognize:

- “Determined” typically means *structurally* determined. But appearing is not purely structural.

- “Random” typically means *brute/arbitrary*. But experiential facts have grounds.

The apparent dilemma—“either determined or random”—assumes a dichotomy that is not established for non-structural facts, which operate in a different ontological register.

Actualization is grounded (not random) but not structurally fixed (not determined). This is not mysterious once the structural/non-structural distinction from I2 is accepted.

Objection (Quantum Indeterminacy). Quantum mechanics already shows physics isn’t deterministic. Maybe experiential openness is just quantum randomness.

Response. Quantum indeterminacy is *structural* indeterminacy—probabilistic physical laws governing physical states. This is not what I5 claims.

I5 concerns actualization, whose grounds are not purely structural. Even if physics were fully deterministic, the fixedness pole of I5’s conclusion would hold (per I2—structure doesn’t entail appearing). Even if physics is indeterministic (quantum), this doesn’t explain experiential actualization—it just shows structural processes have probabilistic elements.

Furthermore, quantum “randomness” in standard interpretations is brute—the Born rule gives probabilities but no reason for *this* outcome. This would violate BA7 if extended to experiential facts. Experiential actualization has grounds; quantum collapse (on standard interpretations) doesn’t.

Everettian response: Under Everett (Many-Worlds), a critic might claim branch weights *are* the ground—no further fact is needed. But even under Everett, the branch index is structural; per I3 (Axiom 13), the token fact of appearing-*for-that-index*, being not purely structural, has no wholly structural ground. Hence branch-index $\neq$ complete perspectival ground (Axiom 13, with BA7 requiring one). The question “why is there something it is like to be *this* branch-observer?” remains unanswered by structural branch-indexing. This does not assess Many-Worlds as physics; it shows only that branch-indexing, being structural, cannot serve as the whole perspectival ground—BA7 requires one, and I3’s Axiom 13 bars a wholly structural one.

Scope clarification: BA7’s anti-brute stance concerns experiential facts specifically. Even if physics is ontologically brute in some respects (genuine quantum randomness), extending that bruteness to appearing would be a substantial further commitment—one that the framework must acknowledge violates the anti-brute principle for experience.

Quantum mechanics may be *compatible* with I5, but it neither explains nor replaces I5. I5 operates at the level of appearing, which is not purely structural; quantum mechanics operates at the level of physical structure.

Objection (Regularity Implies Fixedness). If experience exhibits coherence and regularity (BA8), doesn’t that mean it’s governed by laws? And if governed by laws, isn’t it fixed?

Response. The objection conflates constraints with complete determination.

Regularities are real: similar conditions correlate with similar experiential patterns. This is what coherence means.

But regularities are not sufficient to fix outcomes. Consider:

- The river’s topology creates regularities (water flows faster in narrows, eddies form behind rocks)
- These regularities constrain possible paths
- But the regularities don’t determine which path is taken

More precisely: BA8 is condition-neutral—it attests that similar conditions tend to correlate with similar experiential patterns, and its central cases are as much experience-internal (thoughts connecting to prior thoughts) as structural. Nothing in BA8 makes its regularities purely structural regularities, and no purely structural regularity could entail which experience occurs (per I2). Whatever structural involvement the regularities have is the permitted partial role, not established

content (Scope and Limits). They are grounded as this chapter’s Constrained conjunct establishes—the coherence fact’s ground, whatever it proves to involve; whether that ground relates to SelPrin’s token-scoped grounds is left open (Scope and Limits). These regularities constrain without fully determining.

BA7 (anti-brute) requires *grounds*, not *complete determination*. The ground for an experiential fact may be a constraint-satisfying actualization—not a unique necessitation.

Objection (Compatibilism). Compatibilists show that determinism is compatible with meaningful agency. Maybe I5 creates a false problem—actualization can be “fixed” in a way compatible with whatever matters for experience.

Response. Compatibilism concerns whether determinism is compatible with *freedom* or *moral responsibility*. I5 concerns what actualization *is*, not whether we’re free or responsible.

The compatibilist move doesn’t address I5’s argument:

- I2 establishes structure doesn’t entail appearing
- I3 establishes determinacy requires a ground that is not purely structural
- I5 establishes the selection isn’t fixed purely by structure

Whether this has implications for freedom is a further question. But I5’s conclusion stands regardless of compatibilist analyses of agency.

The compatibilist might say: “Even if actualization is structurally fixed, what matters for experience is preserved.” But I2 already showed: structure doesn’t fix appearing. So the antecedent fails.

Objection (Phenomenological Counterexamples). Some experiences seem fully determined—reflexive pain upon touching fire, automatic perceptual processing, etc. These feel “fixed,” not “open.”

Response. These are cases where *the constraints are very strong*—the actual outcomes vary little. This is compatible with I5.

I5 claims actualization is not *fully* fixed and not *arbitrary*. It does not claim actualization is always wide open with many possibilities.

In cases with strong structural constraints:

- The constraints channel actualization into a narrow range
- But even within that range, appearing is not purely structural (I2)
- The actualization of *that* appearing (rather than none) still requires a ground that is not purely structural (I3)

The “feeling” of fixedness reflects strong constraints, not genuine structural determination of appearing itself. The experience of inevitability is itself an experience requiring actualization.

Temporal boundaries note: Temporal boundaries may be gappy (flicker-fusion, attentional blanks); this does not undermine token-boundaries when they obtain. I5 concerns the character of actualization when it occurs, not its temporal continuity.

Objection (Coherence Without Agency). I5 seems to imply some kind of “selection” or “openness,” which sounds agentive. But most experience doesn’t involve selection—things just happen to us.

Response. I5 does not imply agency, choice, or voluntary control. “Openness” means: not fully fixed by prior structural states. It does not mean: chosen by a subject.

Actualization can be non-agentive and still exhibit the constrained-but-open character I5 describes. Consider:

- Dream experiences actualize without waking control
- Perceptual experiences arise without voluntary selection
- Moods shift without being chosen

In all cases: the actualization is not structurally fixed (I2), not arbitrary (BA7), and exhibits coherence (BA8). The constrained-middle characterization applies regardless of agency.

“Selection” (used in I5’s derivation) is ontological, not psychological. Something accounts for why *this* rather than *that*—but that “something” need not be a choosing agent.

The kayaker analogy illustrates the *logic* of constrained-but-open actualization, not the presence of agency. Per BA7, experiential actualization is grounded (like the kayaker’s reasoned choices), not brute—but this grounding need not be agentive. The analogy illuminates structure, not psychology.

This chapter carries no framework survey: none of the frameworks surveyed at I4 fully passes it, so no surviving population reaches I5 for assessment. Where every framework left the chain is collected in the Conclusion’s constraint table.

7.6 Scope and Limits

7.6.1 What This Derivation Establishes

- Actualization is not fully fixed by prior structural states (from I2 via Lemma 5.5, Lemma 5.1)
- Actualization is not arbitrary or brute (from BA7, Lemma 5.2)
- The remaining option is constrained actualization—subject to non-trivial regularities with no structural entailment of the outcomes and no brute fixing (Lemma 5.3; the Critical clarification states what grounded necessitation would and would not contradict)
- Experiential coherence (BA8) reflects real constraints on actualization
- Appearing’s not-purely-structural character (I2, I3) is what makes actualization open: what structure does not entail, structure cannot fix
- Determinism at the structural level is compatible with openness at the actualization level

Formal statement: Given that structural facts do not logically entail experiential outcomes (I2, Lemma 5.5), that every experiential fact beyond bare occurrence has a ground (BA7), that experience exhibits coherence (BA8), and that the outcomes are plural (I4’s simultaneous distinct tokens via Lemma 5.4, on the Observation of co-presence), actualization operates in a constrained-but-open mode—neither the complete fixedness of structural determination, nor the complete arbitrariness of brute occurrence, nor collapse to a single inevitable outcome.

7.6.2 What This Derivation Does Not Establish

- **What the constraints are:** I5 establishes that constraints exist, not what they specifically involve. Structural conditions may figure as partial constraints (a permitted role, not an established one—Lemma 5.1’s extension); the constraint the conclusion asserts is the grounded coherence of the actual outcomes, and whether its ground is biological, fundamental, or something else is not addressed.
- **How “open” actualization is:** I5 establishes genuine openness exists but does not quantify it. The degree of openness may vary across contexts.
- **That actualization involves agency or choice:** Constrained openness is compatible with entirely non-agentive processes.
- **Any particular theory of causation:** I5 is neutral on whether causation is deterministic, probabilistic, or something else at the structural level.

- **That temporal passage is real:** I5 is compatible with eternalism. “Fixed in advance” is analyzed in terms of entailment, not temporal priority.
- **How to empirically distinguish constrained from fixed:** I5 is a metaphysical constraint, not an empirical prediction.
- **That the kayaker analogy is literal:** The analogy illuminates the logic of constrained actualization. It does not claim experience involves paddling, water, or conscious navigation.

7.7 Bridge to Inevitability 6

Inevitability 5 establishes: **Actualization is constrained but not fully fixed—experiential processes exhibit coherence, and no structural fact-set entails the outcomes.**

This raises: **What constitutes experiential identity across time?**

Given that:

- Actualization is constrained but not fully fixed, and does not collapse to a single outcome (I5)
- Experience is bounded into perspectives (I4)
- Every outcome beyond bare occurrence is grounded (I5)

What makes the experience *now* continuous with the experience *before* as “the same” perspective?

Three candidate answers:

(A) A static substance persists. An unchanging experiential entity underlies all changes. Problem: what individuates this entity? If its individuation is structural, the substance’s contribution is structural, and appearing’s token facts have no wholly structural ground (I3, Axiom 13); if its individuation is brute, BA7 is violated. I6 develops this elimination.

(B) Continuity of structure provides identity. Same brain, same organism, same physical continuity. Problem: Structural identity is structural. Per I2, structure doesn’t determine appearing. Structural continuity doesn’t entail experiential continuity. (Split-brain cases, gradual replacement thought experiments, etc., challenge this.)

(C) Continuity of pattern in the actualization trajectory. Identity is constituted by the pattern of actualizations across times—each connected to prior and subsequent actualizations. Not a substance underlying change, but the trajectory itself. This is compatible with I2 (a pattern of actualizations whose grounds are not purely structural), I5 (constrained, non-collapsed outcomes), and I4 (bounded perspective).

The kayaker analogy extends naturally: What makes it “the same kayaker” throughout the journey? Not an unchanging substance (her cells replace, her thoughts shift). Not mere structural continuity (her body’s structure changes). Rather: the continuity of her trajectory down the river—each moment connected to the last, the pattern of navigation persisting through change.

I6 will establish: **Identity is continuity, not static substance.** Experiential identity persists through continuity of pattern in the actualization trajectory, not through an unchanging entity.

7.8 Summary

Aspect	Status
Logical form	Valid deduction from I2 (via Lemma 5.5) + BA7 + BA8 + I4 (via Lemma 5.4) + Axiom 13, B
New assumption	BA8 (experiential coherence)—phenomenologically evident
Lemma 5.1	Not fixed—from I2’s structural non-entailment + BA7 dependence explicit
Lemma 5.2	Not arbitrary—from BA7; BA8 congruent, not load-bearing
Lemma 5.3	Constrained middle—from elimination of extremes; non-triviality explicit
Kayaker analogy	Placements: Lemma 5.3 analogy, NL Step 4, Regularity response, Agency response, Do
Symbolic formalization	Grounds, ExpFact, D (with obtaining condition), Constrained actualist ($\text{Coherent} \wedge \neg S$)
Lemma 5.4	Plurality of outcomes from I4’s bounded multiplicity—derived, not assumed
Lemma 5.5	Generalized non-entailment—no experiential fact structurally entailed; from I2 + ExpF
Block universe	Answered—fixed-in-advance is entailment, not temporal settledness; I5 neutral
Hard determinism	Concerns structure; I2 establishes structure $\nmid$ appearing
Quantum objection	Branch-indexing is structural, hence not the whole perspectival ground (I3 Axiom 13, B
Temporal gappiness	Noted in the Phenomenological Counterexamples response
Agency objection	Selection is ontological, not psychological
Bridge to I6	Identity as continuity of trajectory, not static substance

8 Inevitability 6: Identity Is Continuity, Not Static Substance

Inevitability 6 (Identity Is Continuity, Not Static Substance). *Experiential identity consists in continuity of pattern, not in the persistence of an unchanging entity.*

What this chapter must establish. The statement above is this chapter’s obligation, not its title. It has two clauses, and the formal conclusion below must contain both: that experiential identity *consists in continuity of pattern*, and that it does *not* consist *in the persistence of an unchanging entity*.

Note: This inevitability addresses the “identity question” raised at the end of I5. Given that actualization is constrained but not fixed (I5), and that experience is bounded into perspectives (I4), we now ask: what constitutes the persistence of a perspective? What makes the experience *now* continuous with the experience *before* as “the same” perspective?

Clarification of scope: I6 does not specify what mechanisms maintain continuity, nor does it commit to any particular theory of personal identity in the full philosophical sense (which often includes questions of moral responsibility, prudential concern, etc.). It establishes only that experiential identity—whatever makes successive experiences belong to the same experiential trajectory—does not consist in an unchanging substance and consists instead in continuity of pattern among its actualizations.

Terminological note: “Identity” here means experiential identity—what makes two tokens of appearing belong to one experiential trajectory. “Static substance” means an unchanging entity that persists identically while underlying all changes. “Continuity of pattern” means connected succession where each actualization relates to its successors through coherent transition rather than disconnected replacement.

8.1 Assumptions

This inevitability builds from the Foundational Premise, I2, I3, I4, and I5, and adds one background assumption.

8.1.1 From Prior Derivations

ExpOcc: There is at least one instance of appearing. [FP; presupposed by I5’s domain D —experiential facts require that appearing occurs]

I1: Experience makes an ontological difference—reality-with-experience $\neq$ reality-without-experience. (*Carried transitively; this chapter’s derivation cites I2, I3, I4, and I5, not I1 directly.*)

I2: Appearing cannot be exhaustively accounted for by structure alone. I2’s conclusion has three conjuncts: the difference experience makes (I1) is carried forward; appearing is not purely structural ($\neg \text{Struct}(\text{App})$); and structural facts do not logically entail appearing ($\neg \text{LogEntails}(\text{StructFacts}, \text{App})$). I2’s defended premise (its Axiom 8, not its result): appearing is constitutively first-personal—the *for*-relation (appearing-*for*-a-perspective) is part of what appearing *is*.

I3: Experience is determinate, and determinacy requires a principle of selection. For each token instance of appearing, a ground exists that is not purely structural (SelPrin). BA7 (anti-brute commitment): any experiential fact other than the bare occurrence of experience has an ontological ground—see the SelPrin/BA7 division note under I3’s Conclusion.

I4: Simultaneous distinct experiential tokens exist (given the Observation of co-presence), and every such pair is demarcated by something not purely structural and not brute. Distinct perspectives are not mutually accessible as one experience.

I5: Actualization is neither fully fixed in advance—no accumulation of structural facts logically entails the experiential outcomes—nor arbitrary: it operates under real, non-trivial constraints. BA8 (experiential coherence): experience exhibits coherence across its instances.

8.1.2 Background Assumption

Background Assumption 9 (Experiential succession). Within a bounded perspective, experience exhibits temporal succession—moments of appearing follow upon prior moments in connected sequence rather than as isolated, disconnected instants.³¹

Clarification: BA9 is phenomenologically evident. Your current experience connects to your experience a moment ago; you do not experience a series of utterly unrelated instants. Even when memory fails or attention lapses, there is experiential flow—one moment gives way to the next within your perspective. This is not a claim about metaphysical time but about the temporal texture of appearing itself.

What BA9 does *not* claim:

- That succession is metaphysically fundamental (it may be grounded in deeper features)
- That succession is always smooth or uninterrupted (gaps may occur)
- That we have perfect introspective access to the succession
- That the mechanism of succession is known

What BA9 *does* claim:

- Within perspectives, experiences typically connect temporally
- The connection is phenomenological—experienced as succession, flow, or continuity
- Perspectives are not mere collections of utterly disconnected instants

Defense. Consider the alternative: experience consisting of utterly disconnected instants with no temporal connection whatsoever. Each moment would be complete in itself with no phenomenological relation to what came before. This is not what we find. Your current thought connects to your prior thought; your current perception flows from your prior perception. Even in disjointed experiences (dreams, altered states), there is temporal texture—one thing after another within a perspective. BA9 captures this minimal but undeniable feature.³²

8.1.3 Definition of Key Terms

- **Experiential identity:** What makes two tokens of appearing belong to one experiential trajectory. Not necessarily personal identity in the full moral/legal/psychological sense.

³¹The philosophical analysis of temporal succession has a rich history in tense logic; see Prior, A.N. (1967). *Past, Present and Future*. Oxford: Clarendon Press. Our claim here is phenomenological rather than formal, but Prior's work establishes that temporal notions resist reduction to timeless logical forms.

³²Husserl's phenomenology of internal time-consciousness provides the canonical analysis of how succession is experienced. His "living present" comprises primal impression (the now), retention (the just-past held within the present), and protention (anticipation of what's coming)—not as three separate acts but as inseparable moments of a single temporal awareness. Crucially, Husserl distinguished *consciousness of succession* from mere *succession of consciousness*: we experience temporal flow, not disconnected snapshots. See Husserl, E. (1991). *On the Phenomenology of the Consciousness of Internal Time (1893–1917)*. Trans. J.B. Brough. Dordrecht: Kluwer.

- **Static substance:** An entity that persists while remaining qualitatively identical—the “same thing” underlying all changes, unchanged by them.
- **Pattern continuity:** The fact of a perspective’s actualizations standing in connected, coherent succession—each actualization relating to its successors through coherent transition rather than disconnected replacement. The pattern is not something that persists despite change; it is constituted by the coherent character of change.
- **Trajectory:** The actualizations of a bounded perspective in their connected succession. Not a thing that has experiences but the experiences themselves.

8.2 Defense of Key Principles

Before the derivation, three lemmas require explicit defense. Two principles of grounding are declared at their points of use, on the pattern of I1’s declared principle: the complete-grounding entailment principle, stated in full generality and neutral on what kind of fact a ground is; and the Completeness principle, restricted to grounded experiential facts.

8.2.1 Lemma 6.1: Entity Persistence Does Not Completely Ground Experiential Identity

Claim: $\forall S \neg \text{Selects}(\text{Persist}(S, e_1, e_2), \text{Identity}(e_1, e_2))$.

Derivation. Principle (Complete-grounding entailment). For any facts X and φ : $\text{Selects}(X, \varphi) \rightarrow \text{LogEntails}(X, \varphi)$. If X is that in virtue of which φ obtains, taken in full, then X ’s obtaining while φ fails is contradictory. The principle is neutral on what kind of fact X is: not-purely-structural complete grounds entail what they ground in exactly the same way. Declared here at point of use; consumed again at Lemma 6.2, Lemma 6.3, NL Step 5, the symbolic derivation’s exclusion step, the Substance Dualism and Souls response, and this chapter’s Discharges. Rejecting it costs Lemma 6.2 and the exclusion step, and with them this chapter’s derivation; a rejecting reader exits at I6.

Principle (Completeness). Any grounded experiential fact has a complete ground: its grounds, taken in full. If the grounds taken in full left “in virtue of what?” still coherently pressable, the shortfall would be exactly what BA7’s pseudo-explanation test forbids (I3’s category (3)): a residue with nothing put forward to answer it. Declared here at point of use; consumed at Lemma 6.3, NL Step 2, and symbolic step 4. Rejecting it costs the move from grounds to a completing ground: identity would retain grounds (I5’s Anti-brute Axiom) whose totality might fall short, and this chapter’s first conjunct would not be earned.

Let S be any entity offered as what $\text{Identity}(e_1, e_2)$ obtains in virtue of; the candidate ground is $\text{Persist}(S, e_1, e_2)$. Suppose $\text{Selects}(\text{Persist}(S, e_1, e_2), \text{Identity}(e_1, e_2))$. By the principle, $\text{LogEntails}(\text{Persist}(S, e_1, e_2), \text{Identity}(e_1, e_2))$.

But there is no such entailment. $\text{Identity}(e_1, e_2)$ is defined as linkage by a chain of succession steps; $\text{Persist}(S, e_1, e_2)$ is defined over S ’s being the same entity at the two occurrences. LogEntails is logical consequence (I2’s definition), so the entailment holds only if Persist ’s obtaining while Identity fails is contradictory. The scenario that would have to be contradictory is instead coherent—the two definiens are independent (Persist ’s mentions no succession chain; Identity ’s mentions no entity-sameness), so no contradiction is derivable from the definitions LogEntails consults—and it is the substance dualist’s own scenario: S persists while no succession chain links e_1 to e_2 (severance with the persister surviving). Persistence true, chain-linkage false, no contradiction. So $\neg \text{LogEntails}(\text{Persist}, \text{Identity})$; discharge the supposition.

Boundary note. A “persister” whose persisting is *defined as* the tokens’ standing in chain-linkage is not a rival candidate: its persistence-fact is the succession fact under an entity-style name, and it is assessed in cell (3), not here.

Conclusion. No entity’s persisting—changing or unchanging, structural or not, appearing or not—is the complete ground of experiential identity. This covers more than the Inevitability statement claims: the statement names the unchanging entity, and the argument closes entity-persistence grounds generally. It is silent on whether such entities exist and finds no incoherence in them; it finds that their persisting cannot be what identity obtains in virtue of, because it does not even entail that identity holds.

8.2.2 Lemma 6.2: No Purely Structural Fact Completely Grounds an Experiential Fact

Claim: $\forall X \forall \varphi (\text{Struct}(X) \wedge \text{ExpFact}(\varphi) \rightarrow \neg \text{Selects}(X, \varphi))$.

Derivation. Suppose $\text{Struct}(X)$, $\text{ExpFact}(\varphi)$, and $\text{Selects}(X, \varphi)$. By the complete-grounding entailment principle (declared above), $\text{LogEntails}(X, \varphi)$. Since X is purely structural, entailment from X is entailment from structural facts (I5’s monotonicity bridge, Step 4 of its derivation), so $\text{LogEntails}(\text{StructFacts}, \varphi)$. This contradicts Lemma 5.5: $\text{ExpFact}(\varphi) \rightarrow \neg \text{LogEntails}(\text{StructFacts}, \varphi)$. Discharge the supposition.

Instance. $\text{Identity}(e_1, e_2)$ is an experiential fact (its statement essentially involves appearing occurring at both tokens). So no purely structural fact—including any fact of structural continuity between e_1 and e_2 —is its complete ground.

Point-of-use caveat. What is excluded is a *complete* ground that is *purely* structural. Structure may figure in a ground that includes not-purely-structural elements; I2 forbids structure alone, and this lemma is that prohibition applied to grounding.

Conclusion. Structural continuity may correlate with experiential identity, and structural facts may contribute to its ground. What they cannot do is exhaust it.

8.2.3 Lemma 6.3: The Partition, the Entailment Filter, and the Naming of the Residue

Claim: The complete ground of experiential identity is neither purely structural nor any entity’s persisting; it lies in the class of not-purely-structural facts that entail the tokens’ connected succession—a succession BA8 attests coherent—the completing ground this chapter names pattern continuity, by that derived character.

Derivation. $\text{Identity}(e_1, e_2)$ is an experiential fact that obtains—the case here supposed, since identity can fail for arbitrary pairs (Branching response)—and is distinct from the bare occurrence of experience, so it is in D , and I5’s Anti-brute Axiom yields grounds for it. Let G^* be its grounds taken in full; by the Completability principle, $\text{Selects}(G^*, \text{Identity}(e_1, e_2))$.

Any fact G^* satisfies exactly one of the following. The partition is exhaustive by construction: (1) or not-(1); within not-(1), (2) or not-(2).

1. $\text{Struct}(G^*)$ —the complete ground is purely structural. Excluded by Lemma 6.2.

2. $\neg\text{Struct}(G^*)$, and G^* 's obtaining consists in $\text{Persist}(S, e_1, e_2)$ for some entity S . Excluded by Lemma 6.1.
3. $\neg\text{Struct}(G^*)$, and not (2).

So G^* lies in cell (3): not purely structural, not any entity's persisting. The cell is wide: it contains any not-purely-structural, non-persistence fact whatever—a primitive unity relation between the tokens, for instance. The entailment filter narrows it: $\text{Selects}(G^*, \text{Identity})$ requires $\text{LogEntails}(G^*, \text{Identity})$ (the principle, Lemma 6.1)— G^* must logically entail the tokens' chain-linkage. Candidates that do not encode the succession structure fail exactly as Persist did: a primitive unity relation $U(e_1, e_2)$, stipulated as succession-free, entails no chain of succession steps and is excluded. What survives is the class of facts that entail the succession structure—facts that, in stating what they state, carry the tokens' chain-linkage with them.

Naming (by derived character). The derivation establishes that the complete ground of identity lies in the surviving class: facts that, in stating what they state, carry the tokens' chain-linkage with them—succession-encoding facts (BA9 attests the succession obtains to be encoded; BA8 attests its coherence). The chapter names the completing ground PatternCont : “pattern continuity” records this derived character—connected by derivation, coherent by attestation. The name asserts no choice among the class's members; which specific fact completes the ground is a question for candidate theories. The conclusion, *Scope*, *Bridge*, and *Summary* carry this reading.

Note on plural grounds. G^* may be a conjunction of facts. The partition sorts its conjuncts: a structural conjunct may contribute (I2 permits structure a partial role) but cannot exhaust G^* (Lemma 6.2); an entity-persistence conjunct cannot complete it (Lemma 6.1); what completes the ground lies in the surviving class. A conjunction with structural components is still not-*purely*-structural, and is assessed there with them.

Experiential identity consists in the pattern. Nothing further completes the ground of identity behind the pattern: the perspective across successive actualizations is the trajectory.

Kayaker analogy (from I5). The kayaker's identity through the journey is not an unchanging substance beneath her changing states; it consists in the trajectory itself—each moment of navigation connected to the last. The kayaker across the journey's successive moments is the journey, not something separate having one.

8.3 Natural-Language Derivation

Goal: Show that experiential identity consists in continuity of pattern, not in the persistence of an unchanging entity.

8.3.1 Step 1: The identity question arises from I4 and I5

From I4: Experience is bounded into distinct perspectives. From I5: Actualization is constrained but not fixed.

Together these raise: What constitutes the persistence of a perspective? What makes the experience *now* continuous with the experience *before* as “the same” perspective? This is an ontological question, not merely epistemic.

8.3.2 Step 2: The identity fact has a complete ground

$\text{Identity}(e_1, e_2)$ is an experiential fact that obtains—the case here supposed—and is distinct from the bare occurrence of experience. It is therefore a member of I5's domain D , and I5's Anti-brute

Axiom (from BA7) yields grounds for it. Taken in full, these constitute its complete ground G^* (Completeness principle; Lemma 6.3).

8.3.3 Step 3: The partition

G^* is purely structural, or its obtaining consists in some entity's persisting, or neither. The partition is exhaustive by construction (Lemma 6.3).

8.3.4 Step 4: The structural cell closes

Per Lemma 6.2, no purely structural fact is the complete ground of an experiential fact. G^* is not purely structural.

8.3.5 Step 5: The entity-persistence cell closes

Per Lemma 6.1, no entity's persisting is the complete ground of experiential identity—an entity's persisting does not logically entail the tokens' chain-linkage, and a complete ground must entail what it grounds. This closes changing as well as unchanging entities.

8.3.6 Step 6: The residue is named

G^* lies in the third cell: not purely structural, not any entity's persisting. The entailment filter narrows the cell to succession-encoding facts; the chapter names the completing ground pattern continuity, by that derived character (Lemma 6.3).

8.3.7 Step 7: Conclusion

Experiential identity consists in continuity of pattern, not in the persistence of an unchanging entity. The perspective across successive actualizations is the trajectory; no entity's persisting completes the ground of it.

8.4 Symbolic Formalization

8.4.1 Definitions

$\text{Succ}(e, e') \triangleq$ “Token e' follows upon token e within one bounded perspective in connected succession”
[BA9’s phrase, taken as basic. This names the phenomenon BA9 attests; it is not analyzed further, and it carries BA9’s own limits: succession typically obtains, and gaps may occur.]

$\text{Identity}(e_1, e_2) \triangleq$ “ e_1 and e_2 are linked by a chain of succession steps (Succ), in one direction or the other”
[Successor-continuity. Not transitive across branches: two tokens each linked to a common predecessor need not be linked to each other. “One experiential trajectory” names a maximal chain of succession.]

$\text{Persist}(S, e_1, e_2) \triangleq$ “ S is the same entity at the occurrence of e_1 and at the occurrence of e_2 ”

$\text{PatternCont}(e_1, e_2) \triangleq$ “The succession-encoding fact in virtue of which $\text{Identity}(e_1, e_2)$ obtains, taken in full—the completing ground of the identity fact, whose content includes the tokens’ connected succession”
[Any completing ground has this character: Lemma 6.3’s filter. Coherence of the succession is attested (BA8). What the ground states beyond the succession, if anything, is a question for candidate theories.]

Note on inherited predicates. Struct and LogEntails are I2’s (LogEntails taken with I5’s singleton convention: a single fact in its first argument stands for its singleton set); ExpFact and Grounds are I5’s; Selects (complete grounding) is I3’s, related to Grounds as I5’s Symbolic Formalization records. None is redefined here.

8.4.2 Axioms

Axiom 19 (Experiential succession (from BA9)).

$$\exists e \exists e' \text{Succ}(e, e')$$

Successive tokens stand in the succession relation within bounded perspectives. This is BA9’s minimal symbolic content. It carries BA9’s own limits—succession typically obtains, and gaps may occur—and its role in the derivation is to secure that the conclusion’s antecedent is instantiated—succession obtains, so identity facts obtain (by Identity’s definition: a single Succ step already links a pair) and the concluding conditional is not vacuous.

Demoted from axiom status. That experiential identity has a ground is not assumed here: $\text{Identity}(e_1, e_2)$ is an experiential fact that obtains and is distinct from the bare occurrence of experience, so it is a member of I5’s domain D , and I5’s Axiom (Anti-brute, from BA7) yields

$\exists G \text{ Grounds}(G, \text{Identity}(e_1, e_2))$ directly. Likewise, that no purely structural fact completely grounds an experiential fact is derived, not assumed: see Lemma 6.2. Earlier drafts carried both as axioms; each is an instance or consequence of apparatus already in the chain.

8.4.3 Derivation

1. Suppose: $\text{Identity}(e_1, e_2)$ [Supposition]
2. $\text{Identity}(e_1, e_2)$ is an experiential fact, obtains, and is distinct from ExpOcc ; so $\text{Identity}(e_1, e_2) \in D$ [I5, definition of D]
3. $\exists G \text{ Grounds}(G, \text{Identity}(e_1, e_2))$ [2; I5's Axiom (Anti-brute, from BA7)]
4. Let G^* be the grounds of $\text{Identity}(e_1, e_2)$ taken in full: $\text{Selects}(G^*, \text{Identity}(e_1, e_2))$ [3; Completability principle]
5. Exactly one holds: (a) $\text{Struct}(G^*)$; (b) $\neg \text{Struct}(G^*)$ and G^* 's obtaining consists in $\text{Persist}(S, e_1, e_2)$ for some S ; (c) $\neg \text{Struct}(G^*)$ and not (b) [Partition, exhaustive by construction]
6. Not (a): $\text{Struct}(G^*) \wedge \text{Selects}(G^*, \text{Identity}(e_1, e_2))$ contradicts Lemma 6.2, since $\text{Identity}(e_1, e_2)$ is an experiential fact [Lemma 6.2]
7. Not (b): no entity's persisting is the complete ground of identity [Lemma 6.1]
8. $\text{Selects}(G^*, \text{Identity}(e_1, e_2))$ requires $\text{LogEntails}(G^*, \text{Identity}(e_1, e_2))$; cell-(c) candidates not entailing the tokens' chain-linkage are excluded [Complete-grounding entailment principle; Lemma 6.3]
9. $\therefore G^*$ lies in the surviving class of succession-encoding facts; the chapter names it $\text{PatternCont}(e_1, e_2)$, by that derived character [Lemma 6.3; definition of PatternCont]
10. $\therefore \text{Selects}(\text{PatternCont}(e_1, e_2), \text{Identity}(e_1, e_2)) \wedge \neg \exists S \text{ Selects}(\text{Persist}(S, e_1, e_2), \text{Identity}(e_1, e_2))$ [definition of PatternCont ; existence and character from 4–9]

8.4.4 Conclusion

$\forall e_1 \forall e_2 (\text{Identity}(e_1, e_2) \rightarrow \text{Selects}(\text{PatternCont}(e_1, e_2), \text{Identity}(e_1, e_2)) \wedge \neg \exists S \text{ Selects}(\text{Persist}(S, e_1, e_2), \text{Identity}(e_1, e_2)))$

Experiential identity consists in continuity of pattern—the pattern fact is the complete ground of the identity fact—and does not consist in any entity's persisting.

[From steps 1–10: the step-1 supposition is discharged by conditional proof; e_1, e_2 arbitrary, so universal generalization applies.]

Discharges. The Inevitability statement has two clauses; the conclusion contains both. “*Experiential identity consists in continuity of pattern*”: the first conjunct, $\text{Selects}(\text{PatternCont}(e_1, e_2), \text{Identity}(e_1, e_2))$ — PatternCont is defined as the completing ground, and the derivation establishes that any completing ground is a succession-encoding fact (Lemma 6.3), which is what “consists in continuity of pattern” asserts: the ground of identity has the tokens' connected succession in its content. “*Not in the persistence of an unchanging entity*”: the second conjunct, $\neg \exists S \text{ Selects}(\text{Persist}(S, e_1, e_2), \text{Identity}(e_1, e_2))$. The conjunct is wider than the clause: it excludes the persisting of *any* entity, changing or unchanging, as what identity obtains in virtue of (Lemma 6.1). The statement's clause is the special case. One further sentence for exactness: by the complete-grounding entailment principle, the first conjunct carries $\text{LogEntails}(\text{PatternCont}(e_1, e_2), \text{Identity}(e_1, e_2))$ —derived, not bookkeeping. Which specific fact completes the ground is left to candidate theories; the derivation fixes its character. One more carried item: “the perspective across successive actualizations is the trajectory” (Step 7, Scope, Bridge) is a stipulated identification extending Key Terms' trajectory definition, not a derived surplus; I7 consumes it.

8.5 Objections Addressed

Objection (Ship of Theseus (Gradual Change)). If identity is pattern continuity, what happens when the pattern changes gradually? At what point does identity fail?

Response. Against a constraint, the challenge is a charge of incoherence: that identity consisting in continuity of pattern cannot tolerate gradual change. It can. As long as each token follows upon the last in connected succession, the identity relation holds; the pattern is *of* change, not preserved despite it. The threshold question presupposes that identity must be (a) binary, (b) locatable at a threshold, and (c) grounded in some unchanged element—and (c) is precisely what this chapter’s derivation closes.

Where thresholds fall in hard cases, and whether identity admits of degree, are questions for a theory of consciousness. I6 constrains any answer only this far: it may not settle such cases by appeal to an unchanged element, since identity does not consist in one.

Objection (Split and Merge Cases (Branching Identity)). What if a perspective splits into two? If both post-split trajectories are continuous with the pre-split one, which is “really” the same perspective?

Response. The scenario is the literature’s standard fission challenge. Against a constraint, the challenge can only be a charge of incoherence: that requiring experiential identity to consist in pattern continuity, together with I4’s boundedness, yields contradiction if a perspective were to branch. It does not, and this chapter takes no position on whether branching can occur.

Let e_0 be a pre-split token and e_A , e_B simultaneous post-split tokens. By I4, e_A and e_B are not mutually accessible as one experience: two perspectives, not one perspective with two streams. Each is linked to e_0 by a chain of succession steps—Identity(e_0 , e_A), Identity(e_0 , e_B)—but no chain links e_A to e_B , so $\neg$ Identity(e_A , e_B): the definition’s non-transitivity across branches. No experience spans both branches at any time; boundedness holds at every time; no contradiction arises.

What branching would mean for survival, and whether it can occur, are questions for a theory of consciousness to answer. I6 constrains any such answer only this far: whatever a theory says about the branches, it may not ground their identity in an entity’s persisting or in purely structural facts (Lemmas 6.1–6.2), nor their distinctness in purely structural facts (I4’s demarcation result). “Which one is *really* you?” is a question the constraint leaves to theories—while noting that it presupposes a transitive, one-to-one relation across the branch point that nothing in this chapter requires there to be.

Objection (Memory’s Role). Isn’t identity really about memory? Pattern continuity seems to leave out memory’s crucial role.

Response. Two senses of “memory” must be separated. Retention—the just-past carried within the present token’s own character, the present experienced *as* following—is not at issue: it is BA9’s content, part of what succession *is* phenomenologically (see BA9’s Defense), and Succ takes it as basic. The objection concerns memory as encoding and recall, and it is that sense the following addresses.

The constraint neither privileges memory nor excludes it. A theory may give memory an evidential role, or a contributing role in the ground of connection; what it may not do is make purely structural memory-traces the complete ground of experiential identity (Lemma 6.2), or route identity through a rememberer posited as a persisting entity (Lemma 6.1).

That the constraint is consistent with the phenomena is shown by the standard cases: in flow states, moments succeed with full experiential connection and minimal memory formation; and acquiring another’s memories does not, on any account under discussion, relocate a trajectory. Which role memory in fact plays is a question for theories.

Objection (Temporal Gaps (Sleep, Anesthesia)). If identity requires continuity, what about gaps in experience? How can pattern continuity bridge dreamless sleep?

Response. The constraint is consistent with gaps. Succ carries BA9’s own limits—succession typically obtains, and gaps may occur—and it is not defined over clock intervals, so a gap does not falsify connected succession by itself. The question at any gap is whether the post-gap token follows upon the pre-gap token in connected succession.

Whether it does in a given case—ordinary sleep, anesthesia, deeper disruptions—is a question about the case, to be answered by theories and evidence, not settled by the constraint. What the constraint contributes is the form of the answer: if succession relates the tokens, the chain continues; if nothing does, it ends. Structural facts—the continuing substrate—may contribute to the ground of the connection (structure is permitted a partial role, Lemma 6.2’s caveat); what they cannot do is exhaust it.

Objection (Personal Identity Literature). Are you claiming to solve centuries of debate with “pattern continuity”?

Response. No. I6 addresses experiential identity specifically—what makes two tokens of appearing belong to one experiential trajectory—not personal identity in its full scope.

Personal identity debates concern moral responsibility, prudential concern, survival, legal identity. These involve normative dimensions beyond what this derivation concerns. I6 is silent on them.

I6 is a constraint: experiential identity cannot consist in static substance and consists in pattern continuity. This constrains but does not determine answers to the broader questions.

Objection (Pattern = Structure in Disguise). “Pattern continuity” just *is* structural continuity relabeled. Patterns are structures.

Response. The confusion arises from ambiguity in “pattern.”

Pattern₁ (third-person): Arrangement describable in structural terms—neurons firing, pixels arranged, information flowing.

Pattern₂ (first-person): Succession of appearances with experiential coherence—melody as heard, thought as experienced, visual presence as felt.

I6’s “pattern continuity” is Pattern₂, and the chapter’s definition says so: a not-purely-structural fact about the tokens themselves. This is not structural pattern relabeled because (a) the relata are appearances, which are not purely structural (I2 at type level; I3’s Corollary, token non-structurality); (b) the succession and coherence are BA9’s and BA8’s, attested phenomenologically; and (c) a fact with structural components remains not-purely-structural—structure’s partial role is permitted, its exhaustiveness excluded (Lemma 6.2).

Objection (Substance Dualism and Souls). Substance dualists claim a soul persists and constitutes identity. Doesn’t I6 unfairly dismiss souls?

Response. I6’s derivation closes entity-persistence grounds, and a soul offered as what experiential identity obtains in virtue of is such a ground. The argument is Lemma 6.1’s, applied directly—and it runs on the dualist’s own commitment: a soul that constitutes identity is a soul that could survive severance of the experiential chain. But then the soul’s persisting does not logically entail the tokens’ chain-linkage, and by the complete-grounding entailment principle it is not identity’s complete ground. What the dualist offers as the soul’s strength—independence from the flow of experience—is exactly what disqualifies its persisting as what that flow’s identity consists in.

This is not dismissal of souls. The derivation is silent on whether such entities exist, and it issues no verdict on any framework here—no framework under survey reaches I6. What it establishes is a constraint: whatever else a theory posits a soul for, it may not ground experiential identity in the

soul’s persisting. Personal identity in its moral, prudential, and legal senses remains outside this chapter’s scope, as the previous response records.

Objection (What Connects the Pattern?). What makes the moments connected? Isn’t there a regress?

Response. The connection facts are not exempt from grounding. Each fact $\text{Succ}(e, e')$ is an experiential fact beyond the bare occurrence of experience, so BA7 gives it a ground—and BA9’s own limits say expressly that succession may be grounded in deeper features. This chapter does not say what grounds succession, and does not need to: its claim is about what experiential identity consists in, not a completed chain of grounds. The partition applies to the grounds of succession in their turn (Lemma 6.3, with the entailment filter; its persistence cell closes as Lemma 6.1’s does—Persist’s definiens says nothing of succession, so no entailment, by the same definitional independence).

The regress question—whether grounding terminates, and where—is real, and it is not this chapter’s question. It is a question any theory satisfying the constraints must answer. BA9 attests the phenomenon of succession without claiming its fundamentality; I6 uses exactly that much.

8.6 Scope and Limits

8.6.1 What This Derivation Establishes

- No entity’s persisting—changing or unchanging, structural or not—is the complete ground of experiential identity (Lemma 6.1)
- No purely structural fact is the complete ground of an experiential fact; structural continuity cannot exhaust identity’s ground, though structure may contribute (Lemma 6.2)
- The complete ground of experiential identity is a succession-encoding fact—not purely structural, no entity’s persisting, with the tokens’ connected succession in its content: pattern continuity (Lemma 6.3, entailment filter)
- No entity’s persisting completes the ground of experiential identity; identity consists in the connected succession its ground encodes
- The perspective across successive actualizations is the trajectory (a stipulated identification extending Key Terms’ trajectory definition; not a derived result)

Formal statement: Given that experiential facts beyond the bare occurrence of experience have grounds (BA7, via I5’s Anti-brute Axiom), that complete grounds entail what they ground (the entailment principle, Lemma 6.1), that no purely structural fact completely grounds an experiential fact (Lemma 6.2, from I5’s Lemma 5.5), that no entity’s persisting completes the ground of identity (Lemma 6.1), and that succession obtains to instantiate identity (BA9, Axiom 19) with its coherence attested (BA8), the complete ground of experiential identity is a succession-encoding fact—pattern continuity, named by that derived character.

8.6.2 What This Derivation Does Not Establish

- **What maintains pattern continuity:** I6 is silent on mechanism—it establishes what identity consists in, not what causes the succession to obtain.
- **What grounds succession itself:** BA9 attests the phenomenon; its deeper grounds are for theories to supply (see “What Connects the Pattern?”).

- **How much change identity can survive:** I6 does not specify thresholds; hard cases are routed to theories under the constraint.
- **Whether branching or particular gap cases occur, or how they resolve:** the Objections show the constraint consistent with them and route the substantive questions to theories.
- **Whether identity matters for ethics:** Moral responsibility, prudential concern, and survival are beyond I6's scope.
- **What happens after death:** I7 will address termination; I6 concerns identity within a trajectory.
- **That memory is unimportant:** Memory is epistemically crucial and may contribute to the ground of connection; what the derivation bars is a purely structural memory-trace set as complete ground (Lemma 6.2) and a persisting-rememberer route (Lemma 6.1)—the rest is a theory's question.

8.7 Implications for Existing Frameworks

This chapter carries no framework survey: none of the frameworks surveyed at I4 fully passes it, so no surviving population reaches I6 for assessment. Where every framework left the chain is collected in the Conclusion's constraint table.

8.8 Bridge to Inevitability 7

Inevitability 6 establishes: **Experiential identity consists in continuity of pattern, not in the persistence of an unchanging entity.** The perspective across successive actualizations is the trajectory.

This raises: **What happens when the trajectory terminates?**

Nothing in this chapter requires trajectories to end; whether and how they do is I7's subject. If a trajectory ends:

- Does the terminated perspective's identity retroactively fail?
- Do the experiences within it become "undone"?
- Does termination reach backward to negate occurrence?

The trajectory *has occurred*. Each actualization made a difference (I1). The past actualizations are facts—they happened. Termination ends further actualization; whether it could "un-actualize" what already occurred is I7's question.

The kayaker completes her journey and beaches the kayak. The journey does not retroactively un-happen.

I7 will establish: Termination does not undo occurrence—in I7's own statement, "termination of an experiential trajectory does not negate the fact that the trajectory, and the experiences within it, occurred."

8.9 Summary

Aspect	Status
Logical form	Valid deduction from FP (presupposed via D) + I2 + I3 + I4 + I5 + BA7 + BA8 + BA9
New assumption	BA9 (experiential succession)—phenomenologically attested
Lemma 6.1	Entity persistence excluded—complete-grounding entailment; persisting does not entail change
Lemma 6.2	No purely structural complete ground—Lemma 5.5 + complete-grounding entailment
Lemma 6.3	Partition exhaustive; entailment filter; residue characterized as succession-encoding; complete-grounding
Ship of Theseus	Constraint consistent with gradual change; thresholds routed to theories
Branching	Consistent under non-transitivity; occurrence and survival routed to theories
Memory	Neither privileged nor excluded; complete-ground routes prohibited
Temporal gaps	Succ carries BA9's limits; case verdicts routed to theories
Pattern $\neq$ Structure	Not-purely-structural fact; structure's partial role permitted
Bridge to I7	Termination's reach is I7's question

9 Inevitability 7: Termination Does Not Undo Occurrence

Inevitability 7 (Termination Does Not Undo Occurrence). *Termination of an experiential trajectory does not negate the fact that the trajectory, and the experiences within it, occurred.*

What this chapter must establish. The statement above is this chapter’s obligation, not its title. It has two clauses, and the formal conclusion below must contain both: that termination does not negate the fact that *the trajectory* occurred, and that it does not negate the fact that *the experiences within it* occurred.

Note: This inevitability addresses what happens to a trajectory’s *past* when the trajectory *terminates*. I6 established that experiential identity consists in continuity of pattern—the perspective across successive actualizations is the trajectory. But suppose a trajectory ends. I7 asks: does termination reach backward to “undo” what occurred?

Clarification of scope: I7 does not address what happens *after* termination—whether experience continues elsewhere or resumes. Those questions belong to I8 and I9. I7 concerns only the backward-looking question: does termination negate the facticity of past occurrences?

Terminological note: “Termination” means cessation of further actualization within a specific trajectory. “Occurrence” refers to the facticity of past actualizations. “Undo” means retroactively negate or render non-factual.

9.1 Assumptions

This inevitability builds from FP, I1, I4, and I6, and adds one background assumption and one point-of-use commitment (the Connection registration, declared before the Derivation).

9.1.1 From Prior Derivations

ExpOcc: There is at least one instance of appearing. [FP]

I1: If experience occurs, reality is different than it would have been had that experience not occurred. Each occurrence makes an ontological difference.

I4: There exist real experiential boundaries (given the Observation of co-presence)—distinct perspectives that are not mutually accessible as one experience. [Token(e, t) is I4’s form.]

I6: Experiential identity consists in continuity of pattern, not in the persistence of an unchanging entity. The perspective across successive actualizations is the trajectory (“perspective” here in I6’s diachronic sense—the trajectory across tokens, the experiences themselves rather than a thing that has them; I4’s Perspective(e) is its synchronic, token-level regiment).

9.1.2 Background Assumption

Background Assumption 10 (Facticity of the past). Past-tense propositions have determinate truth-values that are not altered by subsequent events.

Defense: Three considerations establish BA10:

(1) **Coherence of temporal discourse.**³³ Unless past-tense propositions have stable truth-values, temporal discourse collapses. To assert “X happened” is to claim something that remains

³³This principle is foundational to the philosophy of time. See Prior, A.N. (1967). *Past, Present and Future*. Oxford: Clarendon Press; Tooley, M. (1997). *Time, Tense, and Causation*. Oxford: Clarendon Press.

true if it ever was. Historical claims, memory reports, causal explanations, and scientific laws all presuppose that past-tense truths don't fluctuate based on subsequent events. A world where "X occurred at t " could become false at $t' > t$ is a world where nothing can be coherently said about the past—including the claim that BA10 is false. This is not a claim about temporal ontology (what exists) but about facticity (what is true).

(2) I1's difference-making requires persistent facticity. I1 established that each actualization makes a genuine ontological difference—reality-with-this-actualization $\neq$ reality-without-it. If subsequent events could negate this difference, then "difference-making" would be provisional rather than genuine. The actualization would make a difference *until* something undoes it—a stateful rider I1's conclusion nowhere contains: I1's difference is stated without condition on any later state, as a comparison of reality's totality with and without the occurrence. BA10 thus records at the facticity level what I1's conclusion already carries at the ontological level: differences stated without condition on later states are not the kind subsequent events could erase.

(3) Conceptual analysis of termination. The concept of "termination" itself presupposes BA10. "X terminates at t " entails "X existed prior to t and now ceases." If termination could retroactively negate X's prior existence, this entailment would fail—but the entailment is constitutive of what "termination" means. This argument is not independent of the other two, but it shows that even the *framing* of I7's question presupposes BA10.

The first two arguments are independent of termination semantics and jointly sufficient. A critic who wishes to deny BA10 must either (a) accept incoherence of temporal discourse, or (b) revise I1's conclusion that experience makes genuine ontological difference; the third consideration, non-independent by its own statement, falls with them. Neither is tenable within this derivation chain.

9.1.3 Definition of Key Terms

- **Termination:** The ending of a particular experiential trajectory—cessation of further actualization within that trajectory.
- **Occurrence:** The facticity of an actualization—that it happened. A past-tense fact.
- **Retroactive negation:** The hypothetical "undoing" of past facts by future events.

9.2 Defense of Key Principles

Before the derivation, three lemmas require explicit defense.

9.2.1 Lemma 7.1: Occurrences Are Persistent Facts

Claim: When a token occurs, its occurrence is a fact that obtains and persists.

Derivation.

1. Token e occurs at time t within trajectory T .
2. Per Axiom 20 [from I1], $\text{Fact_at}(\text{Occurred}(e, t), t)$ —the occurrence registers as fact when it obtains.
3. " $\text{Occurred}(e, t)$ " asserts something occurred at t and is true at t (step 2); by Axiom 21 (initiation), $\text{PastFact}(\text{Occurred}(e, t), t, t_1)$ for any $t_1 > t$.
4. By PastFact 's definition, $\text{Occurred}(e, t)$ is true at every such t_1 .

5. Therefore: the occurrence-fact persists at all subsequent times.

If occurrence were ontologically evanescent—registering only in the moment with no persistent facticity—then I1’s “difference” would collapse into quasi-difference. Genuine ontological difference entails factual occurrence.

Conclusion. Occurrences are facts whose facticity persists.

9.2.2 Lemma 7.2: Termination Operates Prospectively, Not Retroactively

Claim: Termination affects only whether member tokens occur after t_n ; nothing in it negates, or entails the negation of, any facticity claim about occurrences at or before t_n . The only facticity content its conjuncts entail is affirmative.

Derivation.

1. Terminates(T, t_n) has three conjuncts by definition: T is a trajectory; T has a member token at t_n ; no member token occurs after t_n .
2. Inspect each: none negates or entails the negation of any Fact_at-claim—the first is a membership condition on T ; the second, via Axiom 20, entails an *affirmative* Fact_at-claim (the t_n -member’s occurrence registers); the third concerns token occurrence after t_n and entails nothing about the truth-values of past-tense propositions.
3. BA10 independently secures that no subsequent event—termination included—alters past-tense truth-values.
4. Therefore: termination’s cessation-specific content is exhausted by forward-looking occurrence conditions, and its one backward-looking conjunct (Traj(T)) is affirmative. It has nothing with which to negate.

Termination specifies what does not happen after t_n . Beyond Traj(T)’s affirmative content, it makes no claim about what happened at or before t_n . The concept is intrinsically forward-looking—it ends what will be; it does not reach backward to alter what was.

Conclusion. Termination operates prospectively. It ends the trajectory going forward but does not reach backward.

9.2.3 Lemma 7.3: No Mechanism for Retroactive Negation Exists

Claim: Every candidate mechanism by which termination could negate past occurrence—operating within the ordered succession the chain presupposes—fails.

Derivation. Consider the temporal structure:

- At t_1 : Token e occurs. Per I1, reality includes e ’s occurrence.
- At $t_2 > t_1$: e has ended. But e *did* occur at t_1 .
- At $t_3 > t_2$: The entire trajectory containing e terminates.

Question: Does termination at t_3 alter the fact that e occurred at t_1 ?

If it did, some mechanism would have to accomplish the alteration, and any such mechanism has one of three targets—exhaustive by construction. Either it operates on the occurrence itself, causally (Option A); or it makes the occurrence never have obtained without causal traffic—change without operation (Option B); or it leaves the occurrence untouched and targets its standing as a difference—no change, because nothing genuine ever obtained (Option C). B and C are disjoint: B concedes the difference was genuine and removes its obtaining; C concedes nothing was removed and

denies it was genuine. The scope is the ordering itself, not any account of it: any sequence of state changes ordered as earlier and later—physical time, causal order, experiential succession—supports the argument, because the derivation consumes only the order, never a metaphysics of time. A fourth route—granting that the occurrence obtained and nothing changed it, while denying that its truth persists—is not a mechanism but the rejection of BA10 itself: an acknowledged assumption whose refusal is an exit from this chapter, not a path through it (see the defense of BA10 above).

Three candidate mechanisms for retroactive negation, all of which fail:

Option A: Termination causally reaches backward. Causation operates from earlier to later. Even theories allowing retrocausation concern causal *influence*, not making-it-the-case-that-something-never-happened. And the past actualization would need to *exist* to be affected—but its existence is what’s at issue.

Option B: Termination makes it the case that I1’s difference never obtained. Self-undermining. If *e* never made a difference, there was no *e*—and nothing to terminate. Termination presupposes occurrence; it cannot consistently presuppose and negate occurrence.

Option C: Termination reveals that I1’s difference was merely apparent. This challenges I1, not I7. I1 was established as an ontological claim: experience makes a real difference to reality. If termination could “reveal” this was false, I1 would be wrong. But I7 builds from I1 as established.

All options fail, and the options exhaust the mechanisms: within the ordered succession the chain presupposes, no route to retroactive negation exists.

Kayaker analogy. The kayaker completes her journey. The journey does not un-happen because it has ended. Every stroke she made, every moment she experienced the river—these occurred. Beaching the kayak does not reach backward through the journey erasing each paddle stroke. The journey is over; the journey occurred. These are compatible.

Conclusion. Within the ordered succession the chain presupposes, no route to retroactive negation exists. Termination ends further difference-making but cannot undo differences already made.

9.3 Natural-Language Derivation

Goal: Show that termination of an experiential trajectory does not negate the facticity of the trajectory or of the experiences within it.

9.3.1 Step 1: The trajectory is constituted by actualizations (from I6)

From I6: Experiential identity consists in continuity of pattern—the connected succession of actualizations. The perspective across successive actualizations is the trajectory.

Implication for termination: When the trajectory terminates, that identity ends, and whether anything non-substantive persists or resumes is I8’s open question. But this is compatible with I7’s claim: the trajectory occurred. Termination ends continuation; it doesn’t negate occurrence.

9.3.2 Step 2: Each actualization makes an ontological difference (from I1)

From I1: each actualization makes an ontological difference—reality with it differs from reality without it.

9.3.3 Step 3: Actualizations are factual occurrences (Lemma 7.1)

When a token occurs, its occurrence is a fact (Lemma 7.1). Per Axioms 20 and 21, the proposition “token e occurred at t ” is true at t and remains true at all subsequent times.

9.3.4 Step 4: Termination is prospective cessation (Lemma 7.2)

Termination means no further tokens within this trajectory. It concerns what will not happen, not what did happen (Lemma 7.2).

9.3.5 Step 5: Past facts are not contingent on subsequent events (BA10)

Termination is a subsequent event relative to the trajectory’s earlier stages. Per BA10, termination cannot alter the facticity of those stages.

9.3.6 Step 6: Conclusion

Combining: each token’s occurrence is a persistent fact (Lemma 7.1, Axioms 20 and 21). The Identity facts among the members persist likewise (BA10). The trajectory’s occurrence—the members and their connection—is therefore itself a persistent fact. Termination supplies nothing that could negate any of these (Lemma 7.2), and every candidate mechanism for retroactive negation within the ordered succession the chain presupposes fails (Lemma 7.3)—which is what licenses the strong form: termination does not negate, undo, or erase the trajectory or the actualizations that constituted it. Termination of an experiential trajectory does not negate the fact that the trajectory, and the experiences within it, occurred.

9.4 Symbolic Formalization

9.4.1 Definitions

Inherited predicates: $\text{Token}(e, t)$ (a token occurring at t) is I4’s; $\text{Identity}(e_1, e_2)$ (successor-continuity: the relation of following-upon within one bounded perspective in connected succession—symmetric in direction of succession, not transitive across branches) is I6’s. Neither is redefined here.

$\text{Traj}(T) \triangleq$ “ T is a nonempty, maximal set of tokens pairwise linked by Identity”
[Identity links any two tokens of one non-branching run (I6). Branch tokens are not Identity-related to each other, so a branching run yields distinct trajectories, each sharing the pre-branch tokens.]

$\text{Occurred}(e, t) \triangleq$ “Token e occurred at time t ” [past-tense factual claim, evaluated at times $> t$]

$\text{Occurred}(T) \triangleq$ “The trajectory T occurred over its span” : each member token occurred at its time, and the members stood in connected succession—the conjunction of the member occurrence-facts and the Identity facts among them
[what persists is that T occurred over its completed span, not that T is ongoing]

$\text{Terminates}(T, t_n) \triangleq \text{Traj}(T) \wedge \exists e (e \in T \wedge \text{Token}(e, t_n)) \wedge \forall e' \forall t' > t_n : \neg(e' \in T \wedge \text{Token}(e', t'))$
 [T has a token at t_n and no member token after. Nothing is asserted about tokens outside T ; whether other tokens occur after t_n is untouched—see the Bridge. Termination presupposes prior occurrence: T is nonempty by definition.]

$\text{Fact_at}(\varphi, t') \triangleq$ “Proposition φ is true as evaluated at time t' ”
 $\text{PastFact}(\varphi, t, t') \triangleq$ “ φ asserts something occurred at t , and φ is true at evaluation time $t' > t$ ”

9.4.2 Axioms

Axiom 20 (Occurrence registers as fact (registering I1’s difference)).

$$\forall e \forall t (\text{Token}(e, t) \rightarrow \text{Fact_at}(\text{Occurred}(e, t), t))$$

When a token occurs at t , “it occurred at t ” is true at t . I1’s warrant: the occurrence is an ontological difference obtaining at t ; a difference that obtains is a fact that obtains—and no more. Persistence is not this axiom’s content; it is BA10’s (Axiom 21).

Axiom 21 (Past-tense facts persist (from BA10)).

$$\begin{aligned} & \forall \varphi \forall t \forall t_1 ((\varphi \text{ asserts something occurred at } t) \wedge \text{Fact_at}(\varphi, t) \wedge t_1 > t \rightarrow \text{PastFact}(\varphi, t, t_1)) \\ & \wedge \forall \varphi \forall t \forall t_1 \forall t_2 (\text{PastFact}(\varphi, t, t_1) \wedge t_2 > t_1 \rightarrow \text{PastFact}(\varphi, t, t_2)) \end{aligned}$$

Initiation and propagation, both BA10’s content: a past-tense proposition true when its content obtains is true at any later evaluation (first conjunct), and remains true from any later evaluation to all subsequent ones (second conjunct). The first conjunct’s antecedent phrase is the PastFact definition’s own first component. The derivation consumes initiation (steps 4 and 6, and Lemma 7.1); the propagation conjunct completes the regimentation—this chapter reaches every later time through initiation directly. BA10’s formal instance for the propositions this chapter consumes: occurrence-facts ($\text{Occurred}(e, t)$) and the Identity facts among a trajectory’s members ($\text{Occurred}(T)$ ’s persistence is conjunction closure, step 7). BA10 itself is general; the chapter draws only these instances.

9.4.3 Derivation

Connection registration (stated bridge): $\text{Identity}(e_1, e_2) \wedge \text{Token}(e_2, t_2) \rightarrow \text{Fact_at}(\text{Identity}(e_1, e_2), t_2)$
 — an Identity fact registers as true at its later token’s time, the time its succession completes: I6 supplies the fact, Token’s dating supplies the index. Declared here at point of use; consumed at derivation step 6. Rejecting it costs the trajectory conjunct’s formal route; the member conjunct stands.

1. Consider trajectory T with $\text{Terminates}(T, t_n)$. [Given]
2. For any member $e \in T$ with $\text{Token}(e, t_i)$: $t_i \leq t_n$. [definition of Terminates: no member token after t_n]
3. $\text{Fact_at}(\text{Occurred}(e, t_i), t_i)$ [Axiom 20]
4. $\text{PastFact}(\text{Occurred}(e, t_i), t_i, t')$ for any $t' > t_i$ [from 3, Axiom 21 (initiation); $\text{Occurred}(e, t_i)$ asserts something occurred at t_i by definition]

5. $\forall t' > t_n : \text{Fact_at}(\text{Occurred}(e, t_i), t')$ [from 4, definition of PastFact; $t' > t_n \geq t_i$]
6. The Identity facts among T 's members register at their later tokens' times (Connection registration); each asserts something occurred—its succession's completion—so by Axiom 21 (initiation), each persists at all $t' > t_n$. [Connection registration; Axiom 21]
7. $\text{Occurred}(T)$ is the conjunction of the member occurrence-facts and the Identity facts among them [definition]; a conjunction of persistent facts is persistent; therefore $\forall t' > t_n : \text{Fact_at}(\text{Occurred}(T), t')$.
8. $\text{Terminates}(T, t_n)$'s cessation-specific content is exhausted by forward-looking occurrence conditions; no conjunct negates or entails the negation of a Fact_at-claim—the only facticity content entailed is affirmative (Axiom 20 on the t_n -member). [Lemma 7.2]
9. Steps 3–7 consume none of $\text{Terminates}(T, t_n)$'s cessation-specific content: the member results are derived from occurrence and BA10 (steps 3–5, with step 2 supplying only the times bound $t_i \leq t_n$), the connection results from I6 and BA10 (step 6, with $\text{Traj}(T)$ supplying which pairs are Identity-linked). [inspection of 3–7]
10. Therefore: termination neither supplies content that negates facticity (8) nor, in its cessation-specific content, is a premise the facticity claims depend on (9). Termination does not negate the facticity of the trajectory or of the occurrences within it. [from 5, 7, 8, 9]

9.4.4 Conclusion

$\text{Terminates}(T, t_n) \wedge e \in T \wedge \text{Token}(e, t_i) \rightarrow \forall t' > t_n : [\text{Fact_at}(\text{Occurred}(e, t_i), t') \wedge \text{Fact_at}(\text{Occurred}(T), t')]$

[The *Terminates* conjunct is displayed, not consumed: steps 3–7 derive the consequent from occurrence, I6's connection facts, and BA10—consuming no facticity content from *Terminates*—and steps 8–9 record that termination supplies no negating facticity content. That non-consumption is the theorem—termination has nothing with which to negate. $t_i \leq t_n$ follows from *Terminates*' definition (step 2), so it is not a separate antecedent conjunct.]

Termination of a trajectory does not negate the facticity of the trajectory or of the occurrences within it.

Discharges Inevitability 7. The statement's two clauses, walked: *that termination does not negate the fact that the trajectory occurred*—the formula's $\text{Fact_at}(\text{Occurred}(T), t')$ conjunct, delivered at step 7; *that it does not negate the fact that the experiences within it occurred*—the $\text{Fact_at}(\text{Occurred}(e, t_i), t')$ conjunct, delivered at step 5. Both hold at all $t' > t_n$, with termination given (step 1) and none of its cessation-specific content consumed (steps 8–9; step 2's times bound and the $\text{Traj}(T)$ conjunct at step 6 are its only uses).

9.5 Objections Addressed

Objection (Presentism). Only the present exists. The past doesn't exist anymore. How can past 'facts' remain factual when past events don't exist?

Response. Presentism concerns the *ontology* of time—whether past entities exist. BA10 concerns the *facticity* of past-tense propositions—whether statements about what occurred are true.

These are distinct. The presentist can coherently hold: past entities do not presently exist (ontology), *and* propositions about what occurred are true (facticity). “Dinosaurs existed” doesn't require dinosaurs' present existence—it requires that dinosaurs existed (past tense).

Presentists accommodate BA10 through truthmaker theory: “X occurred at t ” is made true by present features of reality (traces, dispositions, tensed properties). BA10 requires stable truth-values for past-tense propositions, not a particular metaphysics of what makes them true. The

presentist who denies even this faces radical incoherence—all historical claims would be truth-valueless.

Objection (Eternalism / Block Universe). On the block universe view, all times are equally real. There's no 'reaching backward' because nothing 'reaches' anywhere—all times simply are. Doesn't this trivialize I7?

Response. Eternalism supports rather than undermines I7. On eternalism, the trajectory's past stages are eternally real at their temporal locations. Termination is the boundary where the trajectory ends in the temporal dimension. The stages from t_0 to t_n are determinate features of the block; termination at t_n doesn't "undo" them because the block is eternal and unchanging.

Sophisticated four-dimensionalists (Sider, Hawley) analyze this via temporal parts: termination means the temporally-extended object has no parts after t_n ; the parts before t_n remain as parts of the whole. I7's claim holds trivially under four-dimensionalist metaphysics.

Objection (Death Nihilism). Death makes everything meaningless. Once you die, it's as if you never existed.

Response. This conflates occurrence with meaning. I7 concerns *occurrence*—whether past experiences happened (factual claim). Death nihilism concerns *meaning*—whether past experiences matter (evaluative claim).

I7 establishes: Your experiences occurred. This is factual. The nihilist's claim that death makes life meaningless is a further evaluative claim that I9 addresses. Even the nihilist must grant that experiences *occurred* before denying they *mattered*—if death made it the case that experiences never occurred, there would be nothing for the nihilist to claim doesn't matter.

The phrase "as if you never existed" is metaphorical—the nihilist's point is about mattering, not occurring. Literally, you did exist; the nihilist claims this existence was meaningless. I7 addresses the literal claim; I9 will address the evaluative one.

Objection (Memory Dependency). If no one remembers an experience, did it really occur? Without memory or records, the experience is effectively erased.

Response. This conflates occurrence with evidence of occurrence. Memory and records are *evidence* that something occurred, not *constitutive* of occurrence.

Consider: An experience can occur that no one remembers (blackout states, early childhood). An experience can fail to occur that is "remembered" (false memories). The correlation between memory and occurrence is imperfect in both directions.

Per I1: Each actualization makes an ontological difference intrinsic to the actualization—not conferred by subsequent memory. The actualization's occurring is a fact about reality at that time, not about some later time. Memory depends on occurrence; occurrence does not depend on memory.

Objection (Process Impermanence). Process ontologies teach that all things are impermanent. Experiences arise and cease. Doesn't I7 contradict impermanence by claiming experiences 'remain factual'?

Response. I7 is compatible with process impermanence. Process ontologies hold that all conditioned phenomena arise and pass away. I7 does not claim experiences are permanent—it claims:

1. Experiences *occurred* (past tense)
2. This fact is not undone by their ceasing

The distinction: the experience (impermanent, arising and ceasing) vs. the fact of its occurrence (a truth about what happened). I6 grounded identity in continuity of pattern—an account congenial to process ontology without adopting its vocabulary. I7 continues this: the trajectory occurred; the trajectory ended; the occurrence is a fact.

Attachment to persistence would be claiming the experience *continues* beyond its ceasing. I7 claims only that the experience *occurred*—compatible with its having ceased.

Objection (Cosmic Annihilation). What if the entire universe ends? Aren't all past facts 'undone' in that scenario?

Response. Distinguish scenarios:

(A) *Time itself ends*: If there's no "after," there's nothing for past facts to be "undone" by. The question presupposes a time after the end, which is incoherent.

(B) *Time continues but empties*: Heat death scenarios don't end time—they empty the universe of structure. Past facts remain factual in this empty future. BA10 applies straightforwardly.

(C) *Radical metaphysical annihilation*: If something could annihilate times themselves retroactively, I7 would require revision. But we have no concept of such annihilation. If the past was real enough to be annihilated, it was real.

I7 concerns trajectories within an ordered succession. Radical annihilation of the kind scenario (C) names would destroy the ordering itself, not operate within it; I7 does not address it, and Lemma 7.3's universal is scoped accordingly.

Objection (Quantum Retrocausation). Some quantum interpretations suggest future events can affect past events. Why can't termination 'undo' past occurrences?

Response. Retrocausation in quantum mechanics (transactional interpretation, certain collapse theories) involves correlations between future and past events, or constraints that future boundary conditions place on past possibilities. It is not understood as making past events not have happened.

Even on retrocausal interpretations, the past is not "undone"—it is constrained or correlated with the future. The past events still occur in a way consistent with future boundary conditions.

Moreover, BA10's claim is not that the past is causally isolated but that past-tense facts don't change their truth-value based on future events. Retrocausation concerns causal relations, not truth-value revision. The past experience would be causally connected to the future—but this presupposes the past experience occurred.

Objection (Causal Theory of Time). On causal theories of time (Reichenbach, Grünbaum), temporal order *is* causal order—'before' and 'after' are constituted by causal relations, not independent of them. When a trajectory terminates, the complete causal structure is finally determined. Doesn't this completion retroactively fix temporal facts about past events—thus 'affecting' the past in a way that threatens BA10?

Response. Even on causal theories, termination determines *relational* properties of past events, not *whether* they occurred.

Consider: Before termination, event E_1 has indeterminate causal distance from the trajectory's end (because the end hasn't happened yet). After termination at t_n , E_1 is determinately " $n - k$ causal steps before termination." Termination completes the structure and thereby fixes E_1 's *position* within that structure.

But fixing position is not negating occurrence. E_1 is still *in* the structure—its occurrence is presupposed by the very determination of its position. You cannot be "5 steps from the end" unless you exist within the sequence.

Analogy: Completing a sentence determines that word W is the 5th word from the end. This completion doesn't negate W's occurrence in the sentence—it presupposes it.

Causal theories analyze what "temporal past" *means* (causally prior) but don't deny that what is causally prior *occurred*. BA10 claims past occurrences have stable truth-values; causal theories provide an analysis of "past" compatible with this claim. The two are orthogonal.

What would violate BA10 is not “completing the causal structure” but “removing events from the causal structure”—and causal theories provide no mechanism for removal. Termination adds a final node; it doesn’t delete prior nodes.

Objection (The Problem Is Verbal). You’ve defined ‘termination’ as prospective cessation. Of course it doesn’t reach backward—that’s definitional. The real worry is something deeper.

Response. What “deeper” claim could be at issue?

If the claim is: “After death, it will be as if you never existed (in terms of ongoing effects, memory, importance)” —this is compatible with I7. I7 concerns facticity, not ongoing effects—though persistent facticity is what makes ongoing effects statable at all: a terminated trajectory remains a fact.

If the claim is: “After death, you literally will never have existed”—this is self-undermining. Death presupposes existence; you can’t die without having lived. If death made it false that you existed, there would be nothing for death to be the death *of*.

If the claim is: “After death, your existence will have been meaningless”—this is I9’s domain, not I7’s.

The “deeper” intuition often conflates meaning with occurrence. The worry is: “If I die, did my life matter?” I7 doesn’t answer this—it establishes only that your life *happened*. The mattering question requires further treatment.

9.6 Scope and Limits

9.6.1 What This Derivation Establishes

- Occurrences are facts that register when they obtain and persist thereafter (Axioms 20–21, Lemma 7.1)
- Termination entails no negation of any facticity claim—it has nothing with which to negate; the only facticity content it carries is affirmative (Lemma 7.2)
- No mechanism for retroactive negation exists within the ordered succession the chain presupposes (Lemma 7.3)
- The trajectory’s own occurrence—its members and their connection—is a persistent fact (derivation step 7)
- Termination of a trajectory does not negate the fact that the trajectory, and the experiences within it, occurred

Formal statement: If tokens occur (FP, via I4’s token form), each occurrence registers as a persistent fact (I1, BA10), and the trajectory is its tokens in connected succession (I6), then termination of the trajectory does not negate the facticity of the trajectory or of the occurrences within it.

9.6.2 What This Derivation Does Not Establish

- **What happens after termination:** Whether experience continues elsewhere—this is I8’s and I9’s domain.
- **Whether termination is bad:** I7 is neutral on the value of termination.
- **Whether the terminated trajectory “matters”:** Meaning is addressed in I9.
- **The metaphysics of time:** I7 is compatible with presentism, eternalism, and growing block.

- **Whether memory is important:** Memory may be epistemically crucial but is not constitutive of occurrence.
- **What grounds the Identity facts:** That the members stood in connected succession is consumed as obtained fact; what grounds succession is I6's routed question, not reopened here.

This chapter carries no framework survey: none of the frameworks surveyed at I4 fully passes it, so no surviving population reaches I7 for assessment. Where every framework left the chain is collected in the Conclusion's constraint table.

9.7 Bridge to Inevitability 8

Inevitability 7 establishes: **Termination of an experiential trajectory does not negate the fact that the trajectory, and the experiences within it, occurred.**

This secures the *past*: what happened, happened; termination cannot undo it.

But what about the *future* beyond termination?

I1–I7 establish what experience is (not purely structural, determinate, bounded, constrained-but-open), what identity consists in (the trajectory), what termination is (prospective cessation), and what termination does not do (negate the past). But consider three post-termination scenarios:

- (A) **Cessation:** The selection principle ceases operating entirely.
- (B) **New trajectory:** The principle engages a new interface; discontinuous trajectory begins.
- (C) **Resumption:** The same perspective resumes after temporal gap.

Which must obtain? Whether I1–I7 select among them is I8's question.

The kayaker finished her run (I7). Will she paddle again?

I8 will establish: Nothing in the nature of experience alone—nothing established by I1–I7—determines whether experience must continue or must cease beyond a given boundary.

9.8 Summary

Aspect	Status
Logical form	Valid deduction from FP + I1 + I4 + I6 + BA10 + Axioms 20–21 + the Connection-re
New assumption	BA10 (facticity of the past)—three-argument defense
Lemma 7.1	Occurrences are persistent facts—from Axioms 20–21
Lemma 7.2	Termination entails no negation of any facticity claim; its only facticity content is affirm
Lemma 7.3	No mechanism for retroactive negation within the ordered succession the chain presuppo
Presentism	Objection addressed: BA10 concerns facticity, not ontology
Eternalism	Objection addressed: past stages determinate in the block; no trivialization
Causal theory	Objection addressed: completion fixes position, presupposes occurrence
Death nihilism	Objection addressed: conflates occurrence with meaning
Memory dependency	Objection addressed: memory is evidence, not constitution
Process impermanence	Objection addressed: impermanence of experience $\neq$ impermanence of its facticity
Bridge to I8	I7 secures the past; whether continuation is determined is I8's question
Key innovation	Termination has nothing with which to negate—prospectivity derived, not assumed
Objections	9 addressed (Presentism through The Problem Is Verbal)

10 Inevitability 8: Continuation Beyond Boundaries Is Underdetermined

Inevitability 8 (Continuation Is Underdetermined). *Nothing in the nature of experience alone—nothing established by I1–I7—determines whether experience must continue or must cease beyond a given boundary.*

What this chapter must establish. The statement above is this chapter’s obligation. Its load-bearing elements: *the nature of experience alone*—the premise-set is what I1–I7 establish, the identification the statement’s dash makes explicit and Axiom 23 carries; *neither “must continue” nor “must cease”*—two underdetermination conjuncts, one per scenario, each requiring a non-entailment (the scope inference principle) and a compatibility (Lemma 8.2); and *beyond a given boundary*—the claim concerns beyond-boundary scope only, the restriction the definitions and Axiom 23 state, leaving the chain’s own existence content (ExpOcc; I4’s co-present boundaries, given its Observation) untouched.

Note: This inevitability addresses the *limits* of what I1–I7 determine. The prior inevitabilities established what experience *is* (non-structural, determinate, bounded, constrained-but-open), what identity *is* (trajectory), what termination *is* (prospective cessation), and what termination *doesn’t* do (negate past). I8 asks: do these constraints determine what happens *beyond* a trajectory’s boundary?

Clarification of scope: I8 does not claim that continuation is impossible or that cessation is impossible. It claims that *neither is derivable from I1–I7 alone*. External factors (physical laws, metaphysical principles, features of the selection principle not yet specified) might determine the answer—but such determination would be an addition to, not a consequence of, the derivation chain.

Modal clarification: I8’s claim concerns *logical derivability*, not *metaphysical possibility*. We claim that I1–I7 do not logically entail either continuation or cessation—the propositions are independent. Whether there exist metaphysically possible worlds instantiating each scenario is a further question that I8 does not address. External factors (physical laws, the nature of SelPrin, metaphysical necessities we have not established) might metaphysically necessitate one outcome, even though such necessitation is not derivable from I1–I7 alone. I8 establishes what the derivation chain *settles*; it does not map the space of metaphysical possibilities.

Terminological note: “Underdetermined” means: the premises neither entail nor exclude. “Boundary” means: a stopping point of a trajectory—terminal (I7’s Terminates) or a gap—or a point of experiential separation (I4). “Continuation” means: further actualization beyond the boundary—either the boundary proving not to be a termination (the trajectory’s Identity-connected succession resumes after a gap; Succ carries gaps, I6) or a new trajectory.

10.1 Assumptions

This inevitability builds from I1–I7 and adds one background assumption.

10.1.1 From Prior Derivations

ExpOcc: There is at least one instance of appearing. [FP]

I1: If experience occurs, reality is different than it would have been had that experience not occurred. Each occurrence makes an ontological difference.

I2: The fact that experience appears cannot be exhaustively accounted for by structure, relations, or information alone. Appearing is not purely structural.

I3: Experience is determinate, and determinacy requires a principle of selection—for each token, a ground that is not purely structural (SelPrin); whether the grounds unify is left open (I3, Unified or plural). BA7: experiential determinacy is not brute but has an ontological ground.

I4: There exist real experiential boundaries (given the Observation of co-presence)—distinct perspectives that are not mutually accessible as one experience.

I5: Actualization is neither fully fixed in advance nor arbitrary: it operates under real, non-trivial constraints without collapsing to a single inevitable outcome.

I6: Experiential identity consists in continuity of pattern, not in the persistence of an unchanging entity. The perspective across successive actualizations is the trajectory.

I7: Termination of an experiential trajectory does not negate the fact that the trajectory, and the experiences within it, occurred. BA10: past-tense propositions have determinate truth-values not altered by subsequent events.

10.1.2 Background Assumption

Background Assumption 11 (Nature-scope independence for contingent phenomena). The essential features of a contingent phenomenon do not by themselves determine the extent of that phenomenon’s actual instantiation.

Clarification: BA11 applies to contingent phenomena—those that might or might not exist, and whose existence is not necessitated by their essence alone. It does not apply to:

- Mathematical objects (if Platonism is true, their nature may determine existence)
- Necessary beings (if coherent, their essence includes existence)
- Logical truths (true in virtue of form alone)

What BA11 does *not* claim:

- That nothing determines scope (external factors might)
- That scope is arbitrary (it may be lawfully constrained)
- That we cannot discover scope empirically or metaphysically

What BA11 *does* claim:

- For contingent phenomena, knowing *what* something is doesn’t tell you *how much* of it actually exists
- Scope is a further fact, not derivable from nature alone
- This is the essence/existence distinction applied to extent

Defense. Four considerations support BA11:

(1) Conceptual independence for contingent entities.³⁴ For contingent entities, the question “What is X?” is conceptually distinct from “How much X exists?” Knowing the nature of gold

³⁴The essence/existence distinction originates with Aquinas; see *De Ente et Essentia*. For contemporary treatment, see Lowe, E.J. (2006). *The Four-Category Ontology: A Metaphysical Foundation for Natural Science*. Oxford: Clarendon Press, ch. 6.

(atomic number 79, etc.) doesn't tell you how much gold exists in the universe. Knowing the nature of pain (what it's like, its functional role) doesn't tell you how many pain-instances exist. This is the medieval distinction between essence and existence, updated: for contingent phenomena, essence underdetermines extent. This principle runs from Aquinas through Kant and remains philosophically standard.

(2) Formal independence for tokens. The type-token distinction supports BA11. The nature of a type (what makes something an instance of that type) is distinct from questions about token-count (how many instances exist). “What is a triangle?” is answered by geometry. “How many triangles exist?” is not. Similarly: “What is experience?” may be answerable. “How much experience exists?” is a further question.

(3) Scope as empirical/metaphysical addition. Claims about scope typically require additional premises: physical laws (“experience exists wherever brains exist”), metaphysical principles (“experience is necessary”), or empirical investigation (“there are N conscious beings”). None of these are derivable from the nature of experience alone. They are additions.

(4) Application to experience. FP established that experience exists (minimal existential claim), not that it necessarily exists or exists everywhere. This suggests experience is contingent—it might not have existed. If contingent, BA11 applies: the nature of experience (I1–I7) doesn't determine its scope.

10.1.3 Definition of Key Terms

- **Nature (of experience):** The essential features, constraints, and structure of experience as established by I1–I7. What experience *is*.
- **Scope (of experience):** The extent, distribution, or instantiation of experience. *Where, when, and how much* experience exists. This chapter's claims concern *beyond-boundary* scope—instantiation beyond a given boundary; the chain's own existence content (ExpOcc; I4's co-present boundaries, given its Observation) is actual, present instantiation and is not at issue.
- **Boundary:** A stopping point of a trajectory—terminal (I7's Terminates) or a gap—or a point of separation (I4). The edge of a trajectory or perspective.
- **Continuation:** Further actualization beyond a boundary—either within the same trajectory, the boundary proving to be a gap rather than a termination (Identity-connected succession resumes; Succ carries gaps, I6), or through a new trajectory (new instantiation). [A trajectory terminated in I7's sense has, by definition, no member token after its terminal time; “the same trajectory continues” is therefore statable only as the gap case—and whether a given boundary is terminal or a gap is part of what is underdetermined.]
- **Cessation:** No further actualization beyond a boundary through any trajectory.
- **Underdetermined(φ , Σ):** Premises Σ neither entail φ nor entail $\neg\varphi$. [Logical/deductive underdetermination. Note: Σ might provide probabilistic evidence for φ without entailing φ . I8 claims I1–I7 don't deductively determine continuation/cessation; whether they provide evidential support is a separate question addressed in Objection 7.]

- **Scope-Relevant(φ):** φ concerns the extent, location, duration, or instantiation of a phenomenon beyond a boundary (not its essential nature, and not its actual present instantiation). Logically true or false propositions are not Scope-Relevant—they concern no phenomenon’s extent. Example: “Experience continues beyond death” is scope-relevant; “Experience is not purely structural” is nature-relevant.

10.2 Defense of Key Principles

Before the derivation, three lemmas require explicit defense.

10.2.1 Lemma 8.1: I1–I7 Establish Nature, Not Scope

Claim: Inevitabilities 1–7 establish what experience *is* (its nature); where they carry existence content (ExpOcc; I4’s co-present boundaries, given its Observation), that content concerns actual, present instantiation. None of I1–I7 contains content about actualization beyond a boundary.

Derivation. Examine each inevitability’s content:

- **I1:** Experience makes a difference. [Nature: what experience does]
- **I2:** Appearing is not purely structural. [Nature: what experience is not reducible to alone]
- **I3:** Determinacy requires selection principle. [Nature: how experience achieves specificity]
- **I4:** Boundaries are real. [Nature: how experience is individuated]
- **I5:** Actualization is constrained-but-open. [Nature: how experience unfolds]
- **I6:** Identity is continuity. [Nature: what experiential identity consists in]
- **I7:** Termination doesn’t undo occurrence. [Nature: what termination does/doesn’t do]

None of these addresses: Must actualization continue beyond a boundary? Must it cease? How far does experience extend beyond what is presently actual? The existence content the chain does carry—ExpOcc, and I4’s boundary existential (given its Observation)—concerns what is actual now, and present instantiation does not entail beyond-boundary instantiation. The open questions are beyond-boundary scope questions—about instantiation, not about what experience *is* when instantiated.

Conclusion. I1–I7 carry no beyond-boundary scope content. Beyond-boundary scope-facts are not derivable from them (the scope inference principle, Symbolic Formalization).

Important clarification. This does not mean structural facts provide no *evidence* for consciousness—brain activity, behavioral reports, and neural correlates clearly provide evidential support for attributions of experience. The claim is that structural facts do not *a priori determine* experiential scope. Evidence and entailment are distinct: we can have strong evidence for consciousness in a system without that evidence constituting logical derivation from structural premises alone.

10.2.2 Lemma 8.2: Both Continuation and Cessation Are Compatible with I1–I7

Claim: Neither continuation nor cessation contradicts any of I1–I7. Both scenarios are logically compatible with the established constraints.

Derivation: Continuation Case. Suppose: Beyond boundary *B*, actualization continues (through whatever means).

Check against each inevitability:

- **I1:** Continuation would involve further difference-making. ✓
- **I2:** Further appearing remains non-structural. ✓
- **I3:** Further determinacy requires selection principle—which we’ve posited continues operating. ✓
- **I4:** New or continued perspectives would have boundaries. ✓
- **I5 (detailed):** Actualization was constrained-but-open. ✓

Critical distinction: I5 established that actualization, *while it occurs*, is constrained-but-open (not fully predetermined in its content). I5 does *not* establish that actualization *must continue* occurring.

The distinction between two kinds of openness:

- **Content-openness:** Given that actualization occurs at t , the specific content of that actualization is constrained-but-open (not predetermined). This is what I5 establishes.
- **Existence-openness:** Whether actualization occurs at all at $t + 1$ is open. I5 does *not* establish this.

Continuation means: At times $t > B$, actualization occurs. I5’s constraint on *how* actualization operates (constrained-but-open in content) remains satisfied for any actualization that does occur. ✓

- **I6:** Identity would be trajectory-continuity of any continuing actualization. ✓
- **I7:** Past occurrences remain factual regardless of what happens next. ✓

No contradiction. Continuation is compatible.

Derivation: Cessation Case. Suppose: Beyond boundary B , actualization ceases entirely (through this trajectory and all others).

Check against each inevitability:

- **I1:** Past actualizations made differences; no new ones occur. ✓
- **I2:** Non-structural character of past appearing unchanged. ✓
- **I3:** Past determinacy was grounded; no new determinacy to ground. ✓
- **I4:** Past boundaries were real; no new ones form. ✓
- **I5 (detailed):** Actualization was constrained-but-open. ✓

Cessation means: At times $t > B$, the conditional “if actualization occurs at t , then...” has a false antecedent. I5’s constraint on the consequent (how actualization operates when it does occur) remains satisfied vacuously.

Analogy: A rule stating “While driving, you must drive safely” doesn’t entail you must drive forever. Stopping the car doesn’t violate the rule; it just means the rule’s applicability condition (driving) no longer obtains. Similarly, I5 constrains actualization’s character, not its extent.

- **I6:** Past identity was trajectory-continuity; trajectory has ended. ✓
- **I7:** Past occurrences remain factual. Cessation operates prospectively. ✓

No contradiction. Cessation is compatible.

Conclusion. Both continuation and cessation are compatible with I1–I7. Neither is excluded by the derivation chain.

10.2.3 Lemma 8.3: External Determination Is Possible but Not Derivable

Claim: Factors external to I1–I7 might determine whether continuation or cessation obtains, but such determination is not derivable from the chain itself.

Derivation. Consider candidate external determinants:

- **Physical laws:** If experience is tied to physical substrates, physical laws might determine scope. But physical laws are not derived in I1–I7; they are external facts.
- **Metaphysical principles:** Perhaps experience is necessary (must continue) or contingent in a specific way (must cease). But such principles are not established by I1–I7.
- **Features of SelPrin:** Perhaps the selection principle has features that determine its scope. But I3 established only that SelPrin exists and is non-structural; it didn't specify whether SelPrin operates eternally or finitely.
- **Necessity claims:** Perhaps experience's existence is necessary (Spinozistic) or impossible beyond certain boundaries (naturalistic). But these are additional metaphysical commitments, not consequences of I1–I7.

Any of these *might* determine scope. None is *derivable* from I1–I7.

Conclusion. External factors could determine continuation/cessation, but such determination would be an addition to the chain, not a consequence of it.

10.3 Natural-Language Derivation

Goal: Show that I1–I7 neither entail continuation nor entail cessation beyond a boundary.

10.3.1 Step 1: Identify what I1–I7 establish

I1–I7 establish the *nature* of experience: what it is, how it achieves determinacy, how it is bounded, how identity works, what termination does. These are constraints on experience qua experience.

10.3.2 Step 2: Identify what continuation/cessation concern

Continuation and cessation concern *scope*: whether experience exists beyond a boundary, how much experience there is, where and when actualization occurs. These are questions of instantiation, not essence.

10.3.3 Step 3: Apply nature-scope independence (BA11)

Per BA11: For contingent phenomena, nature does not determine scope. Knowing *what* experience is doesn't tell you *how much* exists.

I1–I7 are nature-facts (Lemma 8.1). Continuation/cessation are scope-facts. Therefore: I1–I7 do not determine continuation/cessation.

10.3.4 Step 4: Verify compatibility

Per Lemma 8.2: Neither continuation nor cessation contradicts I1–I7. Both remain possible given the constraints. The constraints don't select between them.

10.3.5 Step 5: Acknowledge external determination possibility

Per Lemma 8.3: External factors (physics, metaphysics, SelPrin features) might determine scope. But such determination is external to I1–I7. The chain itself is silent on what lies beyond boundaries.

10.3.6 Step 6: Conclusion

I1–I7 underdetermine continuation/cessation. The derivation chain establishes the nature of experience but not its scope. What happens beyond a boundary is not settled by what experience *is*.

10.4 Symbolic Formalization

10.4.1 Definitions

- $\text{Nature}(X) \triangleq$ “The essential features/constraints of X ”
 $\text{Scope}(X) \triangleq \{\varphi : \text{Scope-Instance}(\varphi, X)\}$
 [the set of all scope-facts about X]
 $\text{NatureFacts}(X) \triangleq \{\varphi : \varphi \text{ specifies an essential feature of } X\}$
 $\text{Contingent}(X) \triangleq$ “ X might or might not exist; existence not necessitated by essence”
 $\text{Scope-Relevant}(\varphi) \triangleq$ “ φ concerns extent, location, duration, or instantiation beyond a boundary—not essential nature, and not actual present instantiation; logically true or false propositions are excluded” (Key Terms)
 $\text{About}(\varphi, X) \triangleq$ “ φ is a proposition concerning X ”
 $\text{Scope-Instance}(\varphi, X) \triangleq \text{Scope-Relevant}(\varphi) \wedge \text{About}(\varphi, X)$
 $\text{Continues}(T, B) \triangleq$ “Actualization occurs beyond boundary B —within T (B a gap, not a termination) or in a successor trajectory” (Key Terms)
 $\text{Ceases}(T, B) \triangleq$ “No actualization occurs beyond B through T or successors”
 [Ceases(T, B) $\equiv \neg \text{Continues}(T, B)$ under these definitions]
 $\text{Entails}(\Sigma, \varphi) \triangleq$ “ Σ logically entails φ ” [I2’s LogEntails under this chapter’s local name, with I5’s singleton convention for single facts]
 $\text{Compatible}(\Sigma, \varphi) \triangleq \neg \text{Entails}(\Sigma, \neg \varphi)$
 $\text{Underdetermined}(\varphi, \Sigma) \triangleq \neg \text{Entails}(\Sigma, \varphi) \wedge \neg \text{Entails}(\Sigma, \neg \varphi)$

Scope inference principle (declared at point of use): If Σ is consistent and no member of Σ is Scope-Relevant, then for any Scope-Relevant φ whose content lies wholly beyond the boundary, $\neg \text{Entails}(\Sigma, \varphi)$. This is a subject-matter constraint of BA5b’s shape (I2): a conclusion cannot introduce subject matter essentially absent from its premises, and Scope-Relevance’s exclusion of logical truths (Key Terms) does the work BA5b’s Simple restriction does there—without it, disjunction introduction would manufacture counterexamples. Consistency is supplied by Lemma 8.2: each scenario check exhibits the chain’s results co-obtaining, so Σ has a model. Consumed at derivation steps 9–10. Rejecting this principle costs the non-entailment conjuncts; the compatibility conjuncts (Lemma 8.2) stand.

10.4.2 Axioms

Axiom 22 (Nature-scope independence for contingent phenomena (from BA11)).

$$\forall X \forall \varphi (\text{Contingent}(X) \wedge \text{Scope-Instance}(\varphi, X) \rightarrow \neg \text{Entails}(\text{NatureFacts}(X), \varphi))$$

For a contingent phenomenon, the set of its nature-facts entails no scope-instance about it: knowing what X is does not deliver how far X 's instantiation extends (BA11). Stated per- φ because Entails takes a premise-set and a proposition; the claim quantifies over $\text{Scope}(X)$'s members rather than putting the set in the proposition position. $\text{Nature}(X)$ is the informal name for what $\text{NatureFacts}(X)$ collects.

Axiom 23 (I1–I7 carry no beyond-boundary scope content).

$$\neg \exists \psi \in \text{I1–I7} : \text{Scope-Relevant}(\psi)$$

The prior inevitabilities specify what experience is; the existence content among them (ExpOcc; I4's boundary existential, given its Observation) concerns actual, present instantiation, and no member concerns instantiation beyond a boundary (Lemma 8.1, by content examination). This is the statement's "the nature of experience alone": what I1–I7 establish. That no nature-content smuggles in beyond-boundary existence content is what BA11 secures for contingent phenomena (Axiom 22 with Axiom 24): were experience necessary, an essence-includes-existence route would put scope content inside the nature-facts themselves; contingency closes that route.

Axiom 24 (Experience is contingent).

$$\text{Contingent}(\text{Experience})$$

Justification: FP established minimal existence ("at least one instance"), not necessary existence ("must exist in all possible worlds"). The derivation chain provides no grounds for claiming experience exists necessarily. Absent such grounds, experience is treated as contingent. If a critic claims experience is necessary, this would be an additional metaphysical thesis beyond I1–I7—exactly the kind of external determination Lemma 8.3 acknowledges as possible but not derivable from the chain.

Axiom 25 (Continuation is scope-relevant).

$$\text{Scope-Relevant}(\text{Continues}(T, B))$$

Whether a trajectory continues beyond a boundary is a question of instantiation.

Axiom 26 (Cessation is scope-relevant).

$$\text{Scope-Relevant}(\text{Ceases}(T, B))$$

Whether a trajectory ceases beyond a boundary is a question of instantiation.

Axiom 27 (Scope-relevance yields scope-instance).

$$\forall \varphi (\text{Scope-Relevant}(\varphi) \wedge \text{About}(\varphi, \text{Experience}) \rightarrow \text{Scope-Instance}(\varphi, \text{Experience}))$$

Propositions about experience's extent are instances of scope-facts about experience.

10.4.3 Derivation

- | | |
|--|---------------|
| 1. Contingent(Experience) | [Axiom 24] |
| 2. Scope-Relevant(Continues(T, B)) | [Axiom 25] |
| 3. Scope-Relevant(Ceases(T, B)) | [Axiom 26] |
| 4. Scope-Instance(Continues(T, B), Experience) | [2, Axiom 27] |

5. Scope-Instance(Ceases(T, B), Experience) [3, Axiom 27]
6. $\neg$ Entails(NatureFacts(Experience), Continues(T, B)) [1, 4, Axiom 22, universal instantiation, modus ponens]
7. $\neg$ Entails(NatureFacts(Experience), Ceases(T, B)) [1, 5, Axiom 22]
8. $\neg\exists\psi \in \text{I1–I7} : \text{Scope-Relevant}(\psi)$ [Axiom 23; content examination in Lemma 8.1; steps 6–7 close the essence-to-existence route that could otherwise defeat the examination]
9. $\neg$ Entails(I1–I7, Continues(T, B)) [8, 2, scope inference principle; consistency from Lemma 8.2]
10. $\neg$ Entails(I1–I7, Ceases(T, B)) [8, 3, scope inference principle]
11. Compatible(I1–I7, Continues(T, B))—i.e. $\neg$ Entails(I1–I7, $\neg$ Continues(T, B)) [Lemma 8.2; def. of Compatible]
12. Compatible(I1–I7, Ceases(T, B))—i.e. $\neg$ Entails(I1–I7, $\neg$ Ceases(T, B)) [Lemma 8.2; def. of Compatible]
13. $\neg$ Entails(I1–I7, Continues(T, B)) $\wedge$ $\neg$ Entails(I1–I7, $\neg$ Continues(T, B)) [9, 11]
14. $\neg$ Entails(I1–I7, Ceases(T, B)) $\wedge$ $\neg$ Entails(I1–I7, $\neg$ Ceases(T, B)) [10, 12]
15. Underdetermined(Continues(T, B), I1–I7) [13, def.]
16. Underdetermined(Ceases(T, B), I1–I7) [14, def.]

10.4.4 Conclusion

$\text{Underdetermined}(\text{Continues}(T, B), \text{I1–I7}) \wedge \text{Underdetermined}(\text{Ceases}(T, B), \text{I1–I7})$

Whether experience continues or ceases beyond a boundary is underdetermined by Inevitabilities 1–7. [T, B arbitrary; the result holds for any trajectory and boundary by universal generalization.]

Discharges Inevitability 8. The statement’s elements, walked: *nothing established by I1–I7 determines*—the two Underdetermined conjuncts, each pairing a non-entailment (steps 9–10) with a compatibility (steps 11–12); *the nature of experience alone*—Axiom 23 identifies the premise-set with what I1–I7 establish and states that it carries no beyond-boundary scope content; *must continue or must cease*—“must” is entailment (Terminological note): Continues is neither entailed (step 9) nor excluded (step 11), Ceases likewise (steps 10, 12); *beyond a given boundary*— T, B arbitrary.

10.5 Objections Addressed

Objection (Physical Determinism). Physics determines what happens after death. Brains decompose; consciousness ceases. The answer isn’t “underdetermined”—it’s physically determined.

Response. Physical determinism, if true, would be an *external* determinant—exactly what Lemma 8.3 acknowledges is possible. I8 claims I1–I7 don’t determine continuation/cessation; it doesn’t claim nothing does.

Moreover, per I2, physical/structural facts don’t entail experiential facts. Even complete physical description leaves open whether and where appearing occurs. Physical determinism about brain states doesn’t settle experiential scope without additional psychophysical premises (which are external to I1–I7).

Objection (Eternalism/Block Universe). On eternalism, whether experience continues is already settled—it’s part of the eternal block. The question “will experience continue?” has a determinate answer, even if we don’t know it.

Response. Eternalism concerns whether the answer *exists* (as part of the block). I8 concerns whether the answer is *derivable* from I1–I7. These are distinct.

Grant eternalism: There is a fact about whether experience continues beyond *B*. I8 claims this fact is not derivable from I1–I7. The block may contain the answer; the derivation chain doesn’t generate it. I8 is about derivability, not metaphysical determinateness.

Objection (Necessary Existence). Perhaps experience exists necessarily. If so, BA11 fails—experience’s nature *does* determine its scope (eternal, universal).

Response. BA11 is restricted to contingent phenomena. If experience is necessary, BA11 doesn’t apply, and I8’s derivation would require revision.

However: (a) FP established minimal existence, not necessary existence. (b) I1–I7 provide no grounds for claiming experience is necessary. (c) Necessary existence of experience would be a substantial metaphysical thesis requiring independent argument.

If a critic wishes to claim experience is necessary, this is exactly the kind of external metaphysical premise Lemma 8.3 acknowledges—possible but not derivable from the chain. The critic has not refuted I8; they have added a premise beyond I1–I7.

Objection (Extinctionism). When you die, experience ceases. This is just obvious. What’s underdetermined about it?

Response. I8 doesn’t deny that cessation may be true. It claims cessation is not *derivable* from I1–I7.

“When you die, experience ceases” may be correct. But on what grounds? Physical assumptions about brain-dependence (external to I1–I7). Metaphysical assumptions about consciousness’s nature (beyond what I1–I7 establish). Empirical observations (not derivable from pre-theoretic constraints).

Extinctionism may be true; it’s just not a consequence of I1–I7 alone.

Objection (Conservation Intuition). I7 established that termination doesn’t undo occurrence. Doesn’t this suggest experience is “conserved” in some sense that implies continuation?

Response. I7 concerns the *past*: past occurrences remain factual. It says nothing about the *future*: whether new occurrences will happen.

“Termination doesn’t undo occurrence” $\neq$ “Termination doesn’t prevent new occurrence.” I7 secures the facticity of what happened; it doesn’t determine what will happen.

Conservation of past facticity is compatible with both continuation (new facticity added) and cessation (no new facticity, but old facticity preserved).

Objection (I5 Implies Openness). I5 established actualization is “open” (not fully fixed). Doesn’t this imply experience could continue? And doesn’t “constrained-but-open” suggest continuation is always possible?

Response. This objection conflates two kinds of openness:

Content-openness: Given that actualization occurs at *t*, the specific content of that actualization is constrained-but-open—not structurally entailed (I5’s Fixed, in its entailment sense).

Existence-openness: Whether actualization occurs at all beyond *t* is open.

I5 establishes the first (content-openness). I5 does *not* establish the second (existence-openness).

The openness in I5 is about *how* actualization unfolds when it occurs, not *whether* actualization continues. “Constrained-but-open” describes the character of actualization, not its extent.

Cessation doesn’t violate I5’s openness; it just means the openness no longer obtains (no actualization to be open). The game can end without the in-game openness being violated.

Analogy: “While the game is being played, the outcome is open” doesn’t entail “the game must continue being played forever.” The game ending doesn’t violate the openness-while-playing principle.

Objection (Probabilistic Constraints). Even if I1–I7 don’t entail continuation/cessation, they might make one more probable than the other. Isn’t underdetermination too strong a claim?

Response. I8 concerns deductive entailment, not probabilistic support. The claim is: I1–I7 don’t *entail* continuation or cessation. This is compatible with I1–I7 providing evidential support for one over the other.

Whether I1–I7 provide probabilistic evidence is a further question—and arguably not answerable from within the derivation chain itself (probability requires a reference class, prior distributions, etc., none of which I1–I7 supply).

I8’s “underdetermined” is logical underdetermination: neither deductively follows. This is the sense relevant to the derivation chain’s structure.

Objection (SelPrin Features). Maybe the selection principle has features that determine scope. If so, I3 (which posits SelPrin) implicitly determines continuation/cessation.

Response. I3 established that SelPrin exists and is non-structural. It did not specify:

- Whether SelPrin operates eternally or finitely
- Whether SelPrin is tied to specific structures (brains) or not
- Whether SelPrin can “restart” after termination
- How many instances of SelPrin exist

These are scope questions about SelPrin itself. I3 addresses SelPrin’s *nature* (grounds determinacy, is non-structural); it doesn’t address SelPrin’s *scope*.

If SelPrin has scope-determining features, discovering them would be an addition to I1–I7, not a consequence of them.

Objection (Anthropic Reasoning). We’re here asking the question, so experience has continued at least this far. Doesn’t this provide some evidence for continuation?

Response. Anthropic reasoning concerns what we can infer *from* our existence. It doesn’t establish what I1–I7 *entail*.

That we exist now is compatible with both:

- Continuation: Experience will continue beyond our current boundary
- Cessation: Experience will cease at some future boundary

Past continuation doesn’t entail future continuation. Anthropic selection explains why we find ourselves existing; it doesn’t derive from I1–I7 whether we will continue to exist.

Objection (Triviality). I8 just says “the premises don’t settle everything.” Of course they don’t—no finite set of premises settles all questions. This is trivial.

Response. The non-triviality of I8 lies in three features:

(1) It specifies *what* is underdetermined. Not “everything” but specifically: continuation/cessation beyond boundaries. This is a targeted result about the limits of the derivation chain.

(2) It explains *why* underdetermination holds. Not “premises are finite” but “I1–I7 are nature-facts; continuation/cessation are scope-facts; nature doesn’t determine scope for contingent phenomena.” This is a structural explanation, not a generic limitation.

(3) It corrects a persistent philosophical error. Historically, philosophers have tried to derive scope from nature:

- Descartes: Mind’s nature (thinking substance) → necessarily persists
- Berkeley: Ideas’ nature (dependent on minds) → minds must exist
- Whitehead: Process nature → universal continuity

Each attempts to derive scope (continuation, universality, persistence) from nature (what experience/mind/process *is*). I8 shows this inference pattern is invalid for I1–I7—a substantive philosophical result that blocks a recurring error.

I8 is not “premises don’t determine everything.” It is “premises about experience’s nature don’t determine experience’s scope, for principled reasons.”

10.6 Scope and Limits

10.6.1 What This Derivation Establishes

- I1–I7 establish the nature of experience and carry no beyond-boundary scope content (Lemma 8.1)
- Both continuation and cessation are compatible with I1–I7 (Lemma 8.2)
- External factors might determine scope, but such determination is not derivable from I1–I7 (Lemma 8.3)
- The derivation chain has principled limits: it constrains what experience *is*, not how much of it exists
- Content-openness (I5) is distinct from existence-openness; I5 establishes only the former

Formal statement: Given that I1–I7 carry no beyond-boundary scope content (Lemma 8.1; Axiom 23), that nature-facts entail no scope-instance for contingent phenomena (BA11), that experience is contingent (Axiom 24), and the scope inference principle, neither continuation nor cessation beyond a boundary is derivable from I1–I7.

10.6.2 What This Derivation Does Not Establish

- **That continuation is impossible:** I8 says it’s not derivable from I1–I7, not that it’s false.
- **That cessation is impossible:** Same. Both remain open possibilities.
- **That nothing determines scope:** External factors might. I8 concerns what I1–I7 determine.
- **What external factors might determine scope:** Physics, metaphysics, SelPrin features—I8 doesn’t adjudicate among these.
- **Whether continuation or cessation is more likely:** I8 concerns entailment, not probability.
- **That we should be indifferent between continuation and cessation:** Practical, ethical, and existential considerations may favor one over the other even if neither is derivable from I1–I7.

10.7 Implications for Existing Frameworks

This chapter carries no framework survey: none of the frameworks surveyed at I4 fully passes it, so no surviving population reaches I8 for assessment. Where every framework left the chain is collected in the Conclusion’s constraint table.

What I8 does bear on is a class of *arguments* rather than frameworks: a priori arguments that derive scope from nature. An argument that continuation is derivable from the nature of consciousness

alone, an argument that cessation is, and any argument that establishes *where* or *how much* experience exists solely from *what* experience is—each must contend with BA11 and the scope inference principle: the derivation is not available from I1–I7, so such arguments owe premises beyond the chain. Extinctionism and continuation alike may be true; neither is a consequence of I1–I7 alone.

Note on continuation theories. I8 is neutral on whether experience continues beyond death—it establishes only that continuation is not derivable from I1–I7. That neutrality does not convert into support for continuation stories the chain’s results disallow: an unchanging entity’s persisting cannot be what experiential identity consists in (I6), so continuation conceived as a static substance’s survival is unavailable—though continuation itself remains open. What continues, if anything does, is pattern-continuous trajectory, not a persisting substance.

10.8 Bridge to Inevitability 9

Inevitability 8 establishes: **I1–I7 do not determine whether experience continues or ceases beyond a boundary.**

This raises an existential question: **If continuation is underdetermined, does life have meaning?**

The worry:

- If we can’t know whether experience continues, how can anything matter?
- If cessation is possible, are past experiences meaningless?
- Does underdetermination about the future undermine significance in the present?

I7 secured the past: what happened, happened. I8 established limits: the future is underdetermined by I1–I7. But meaning concerns neither mere occurrence (I7) nor scope (I8)—it concerns *consequence*.

I9 will address this concern by establishing: Meaning requires consequence, not eternity. The anticipated structure of the argument (subject to I9’s actual derivation):

1. Meaning consists in difference-making (building on I1), not in guaranteed permanence
2. Consequence-chains ground meaning regardless of the chain’s ultimate length
3. Underdetermined continuation (I8) does not undermine realized differences (I7)

The kayaker analogy: Her journey was meaningful because of what happened during it—the challenges met, the experiences had, the differences made—not because of whether she will paddle again. The journey’s significance is constituted by its occurrence and consequences, not by its continuation.

I8’s underdetermination about the future does not infect the past with meaninglessness. I9 will make this precise.

10.9 Summary

Aspect	Status
Logical form	Valid deduction from I1–I7 + BA11 + Axioms 22–27 + the scope inference principle (poi
New assumption	BA11 (nature-scope independence for contingent phenomena)
Lemma 8.1	I1–I7 carry no beyond-boundary scope content, verified by content examination
Lemma 8.2	Both continuation and cessation compatible—checked case-by-case
Lemma 8.3	External determination possible but not derivable
I5 compatibility	Content-openness vs. existence-openness distinguished
Physical determinism	External to I1–I7; doesn’t refute underdetermination
Eternalism	Concerns truth, not derivability
Necessary existence	Would require revision; but not established by I1–I7
Extinctionism	May be true; not derivable from I1–I7
Triviality objection	Non-trivial: specific target, structural explanation, blocks error
Historical context	Descartes, Berkeley, Whitehead—I8 blocks recurring inference
Bridge to I9	Meaning requires consequence, not eternity

11 Inevitability 9: Meaning Requires Consequence, Not Eternity

Inevitability 9 (Meaning Requires Consequence, Not Eternity). *Experience is meaningful insofar as it makes a difference to what follows; duration or permanence is not required.*

What this chapter must establish. The statement above is this chapter’s obligation. Its load-bearing elements: *meaningful insofar as it makes a difference to what follows*—discharged at the grounding direction the formalism proves: when an experience is meaningful, realized consequence is what grounds it (the conclusion’s second conjunct); sufficiency is expressly not claimed (the Mere Occurrence response); and *duration or permanence is not required*—the conclusion’s first conjunct, –RequiresPermanence, by reductio against conceptual independence.

Note: This inevitability addresses the existential concern raised by I8. If continuation beyond boundaries is underdetermined—if we cannot derive from the nature of experience alone whether it persists—does life have meaning? I9 shows this concern is misplaced: meaning is constituted by consequence (difference-making), not by guaranteed permanence. The underdetermination of continuation does not infect realized differences with meaninglessness.

Clarification of scope: I9 does not specify *what* makes experiences meaningful in their particular content (why *this* experience rather than *that* one is significant). It establishes the *logical* basis of meaning: that difference-making grounds significance, and that this grounding does not require eternal duration. Specific meanings arise from specific consequences; I9 concerns the form of meaning, not its content.

Terminological note: “Meaning” here refers to experiential significance—what makes an experience matter, count, or have weight. This is not semantic meaning (what words refer to) nor purpose (a goal or telos). “Consequence” refers to the difference an actualization makes to subsequent states—the causal/constitutive impact on what follows. “Eternity” and “permanence” refer to unlimited temporal persistence or guaranteed continuation.

11.1 Assumptions

This inevitability builds from I1, I7, and I8, and adds one background assumption.

11.1.1 From Prior Derivations

ExpOcc: There is at least one instance of appearing. [FP]

I1: Experience makes an ontological difference—reality-with-experience $\neq$ reality-without-experience. Each actualization is a genuine addition to reality’s inventory.

I7: Termination of an experiential trajectory does not negate the fact that the trajectory, and the experiences within it, occurred. Past-tense facts about experiential occurrences have stable truth-values (BA10).

I8: Nothing in the nature of experience alone—nothing established by I1–I7—determines whether experience must continue or must cease beyond a given boundary. Continuation/cessation is underdetermined by I1–I7. BA11: For contingent phenomena, nature does not determine scope.

11.1.2 Background Assumption

Background Assumption 12 (Meaning is grounded). If an experience is meaningful, there is something in virtue of which it is meaningful—meaning is not brute.

Clarification: BA12 asserts that meaning, like other non-primitive facts, has an ontological ground. This is not a claim that we can always *identify* the ground, but that meaning does not float free—it is grounded in features of the experience and its relations.

What BA12 does *not* claim:

- That meaning is objective or mind-independent in any robust sense
- That all experiences are equally meaningful
- That meaning can be fully articulated or known
- That meaning reduces to any particular feature (pleasure, preference-satisfaction, etc.)

What BA12 *does* claim:

- Meaning is not brute—something grounds it
- If we ask “why is this meaningful?” there is an answer (even if unknown)
- The ground of meaning is a legitimate explanandum

Defense of BA12. Three independent considerations support meaning-groundedness:

(1) Intelligibility of meaning-questions. We ask “Why does this matter?” and treat this as a legitimate question with possible answers. If meaning were brute, such questions would be unintelligible—like asking “Why is $2 + 2 = 4$?” about a logical truth. But meaning-questions are taken to admit answers (“It matters because it affected X,” “because it fulfilled Y”). This practice presupposes groundedness.

(2) Discriminability of meaning. We distinguish meaningful from meaningless experiences. This discrimination presupposes criteria—features that ground the distinction. If meaning were brute, there could be no criteria, and the distinction would collapse into arbitrary stipulation. But the distinction seems substantive, not arbitrary.

(3) Parallels with other derived facts. Meaning is not an ontological primitive (like appearing per FP) but a fact *about* experiences—it supervenes on or arises from something. All such derived facts require grounding. Color supervenes on wavelength, temperature on molecular motion, identity on trajectory (I6). Similarly, meaning—being a derived fact about experiences—requires grounding in something.

These three arguments establish BA12 independently. The anti-brute commitment (BA7) provides a parallel, but BA12 stands on its own grounds.

11.1.3 Definition of Key Terms

- **Meaning (experiential):** What makes an experience significant, mattering, or having weight. The property of counting for something. Distinct from semantic meaning (reference) and purpose (telos).³⁵

³⁵For comprehensive philosophical treatment of meaning in life, see Metz, T. (2013). *Meaning in Life: An Analytic Study*. Oxford University Press; and Wolf, S. (2010). *Meaning in Life and Why It Matters*. Princeton University Press. Our usage is narrower: experiential significance grounded in consequence, not the broader question of what makes a life meaningful overall.

- **Consequence:** The difference an actualization makes to what follows—its impact on subsequent states of affairs, whether through causal influence, constitutive contribution, or constraint on possibilities.
- **Permanence/Eternity:** Unlimited temporal persistence. Guaranteed continuation without end.
- **Difference-making:** The property established in I1—that experience adds something to reality’s inventory such that reality-with-this-experience $\neq$ reality-without-it. Carried to what follows by I7: the occurrence’s difference persists as fact at every later time, a constitutive difference to each subsequent state; causal downstream effects are permitted, not assumed (I1’s causal bracket).
- **Realized difference:** A difference that has been made and persists as a fact (per I7). Contrasted with merely potential or anticipated differences.
- **Experience(E):** E is an actualization within a bounded perspective, as characterized in I1–I7.
- **Fact_{at}(φ , t):** Proposition φ is true as evaluated at time t . [From I7]
- **ConceptuallyIndependent(Q_1 , Q_2):** Questions Q_1 and Q_2 can be answered without resolving the other; settling one does not require settling the other.

11.2 Defense of Key Principles

Before the derivation, four lemmas require explicit defense.

11.2.1 Lemma 9.1: Meaning Requires a Ground (from BA12)

Claim: If an experience is meaningful, something grounds its meaningfulness.

Derivation. Per BA12, meaning is not brute. This parallels the structure of prior inevitabilities:

- I3: Determinacy requires ground (not brute)
- I4: Boundaries require ground (not brute separation)
- I6: Identity requires ground (not brute persistence)

Meaning similarly requires ground. The question is: what can ground meaning?

Three candidate grounds:

(A) Intrinsic properties of the experience alone: The experience is meaningful because of what it is in itself—its qualitative character, intensity, etc.

Problem: Intrinsic properties explain *what* the experience is, not *why it matters*. An experience of intense red is not meaningful merely because it is intensely red. Intrinsic character is necessary for there to be something to be meaningful, but insufficient to ground meaning itself.

(B) Relation to a permanent/eternal framework: The experience is meaningful because it connects to something permanent—an eternal soul, a cosmic purpose, a guaranteed continuation.

Problem: This makes meaning hostage to metaphysical claims I1–I8 do not establish and I8 shows are not derivable from the nature of experience. If meaning required such permanence, and permanence is underdetermined, meaning would be underdetermined—but we find meaning in experiences independently of resolving such questions.

(C) Consequence—difference-making to what follows: The experience is meaningful because it makes a difference to subsequent states. It matters because it shapes, constrains, influences, or constitutes what comes after.

This option is grounded in I1 (experience makes a difference), does not require permanence (the difference can be finite), and provides an intelligible basis for meaning. Lemma 9.2 develops this.

Exhaustiveness. The three candidates partition the field. A ground is either intrinsic to E or relational. A relational ground either involves E 's making a difference to how things stand from E onward—which is consequence in this chapter's definition (causal influence, constitutive contribution, or constraint on possibilities)—or it relates E to a permanent framework, or it relates E to something to which E contributes nothing. The last is no ground at all: a relatum to which E contributes nothing cannot ground why E matters—remove E and the relatum stands unchanged, so nothing in it answers to E 's significance. Backward-looking grounds (an experience mattering because it fulfills a prior intention) fall under consequence: the fulfillment is a difference E makes, from E onward, to the standing of what preceded it.

Conclusion. Of the candidate grounds, consequence is the viable option. Meaning is grounded in difference-making.

11.2.2 Lemma 9.2: Consequence Grounds Meaning Without Requiring Permanence

Claim: Difference-making to what follows is sufficient to ground meaning; this grounding does not require that the consequence-chain extend infinitely.

Derivation. Consider how consequence grounds meaning:

1. At time t_1 , experience E occurs within trajectory T .
2. Per I1, E makes an ontological difference—reality includes E 's occurrence.
3. E has consequences: it shapes subsequent states (memories form, behaviors change, other experiences are affected, structural configurations alter).
4. These consequences are themselves facts about reality. Per I7, the fact that E occurred (and had these consequences) is not undone by later events.
5. The consequence-relation provides the ground: E is meaningful *because* it made these differences.

Does this require infinite continuation? No. Consider:

- At t_1 , E occurs and has consequence C_1 at t_2 .
- At t_2 , C_1 has consequence C_2 at t_3 .
- At t_n , the trajectory terminates.

The meaning of E is grounded in its consequences ($C_1, C_2, \dots, C_{n-1}$) within the trajectory. These consequences occurred. Per I7, their occurrence is not negated by termination at t_n .

The consequence-chain has finite length (t_1 to t_n). Yet each link in the chain grounds the meaning of prior links. E is meaningful because it led to C_1 , which led to C_2 , etc. The chain's termination at t_n does not retroactively drain meaning from E —because E 's consequences *up to termination* remain facts.

Critical distinction:

- *Meaning-constitution:* What makes E meaningful = its consequences (realized differences)

- *Meaning-preservation*: Whether that meaning persists = whether the facts of E 's consequences persist

Per I7, meaning-preservation is secured: past facts persist. The termination of the trajectory does not “unmake” E 's consequences within the trajectory.

Analogy. A conversation is meaningful because of what was said and how it affected the participants—not because the conversation never ends. The conversation's termination doesn't make it meaningless; the meaning was constituted by the exchange itself. Similarly, an experiential trajectory is meaningful because of its internal consequence-relations, not because it extends infinitely.

Conclusion. Consequence grounds meaning. Finite consequence-chains are sufficient. Permanence is not required.

11.2.3 Lemma 9.3: Underdetermined Continuation Does Not Undermine Realized Meaning

Claim: The underdetermination established in I8 concerns *future* continuation; it does not affect the meaning of *past* actualizations already grounded in realized consequences.

Derivation. I8 established: I1–I7 do not determine whether experience continues or ceases beyond a boundary.

The worry: If we don't know whether experience continues, how can past experiences be meaningful?

This worry conflates two questions:

(Q1) Will there be further consequences beyond the boundary? This is what I8 leaves underdetermined. Future consequences are not settled by I1–I7.

(Q2) Did past experiences have consequences within the trajectory? This is determined by the actual history. Past consequences are facts.

Meaning is grounded in *realized* consequences (Q2), not *anticipated* consequences (Q1).

Consider:

- E at t_1 had consequence C at t_2 . This is a fact.
- Whether C has further consequences at t_3 (beyond the boundary) is underdetermined.
- E 's meaning (grounded in $E \rightarrow C$) is already constituted by the realized consequence.
- The underdetermination of t_3 does not retroactively alter the $E \rightarrow C$ relation.

Per I7: Termination operates prospectively, not retroactively. It ends further consequence-making but does not undo consequences already made.

The structure of the worry's error: The worry assumes: Meaning requires *complete* consequences—the full chain extending infinitely (or at least determinately beyond current boundaries).

But this is false. Meaning requires *realized* consequences—the differences actually made. A consequence that was made grounds meaning regardless of whether further consequences follow.

Analogy. A parent's care for a child is meaningful because of its effects on the child—not because the parent knows whether the child will live forever. The care made a difference; that difference grounds meaning. The child's ultimate mortality (or potential immortality) doesn't determine whether the care was meaningful—the care *was* meaningful because it *did* make a difference.

Conclusion. I8’s underdetermination concerns scope (future instantiation). Meaning concerns consequence (realized differences). These are distinct. Underdetermined continuation does not undermine constituted meaning.

11.2.4 Lemma 9.4: Permanence-Requirement Is Incompatible With Conceptual Practice

Claim: If meaning required permanence/eternity, then meaning-judgments would depend on continuation-judgments. But meaning-judgments and continuation-judgments are conceptually independent. Therefore, meaning does not require permanence.

Derivation (modus tollens):

1. Suppose meaning requires permanence: an experience is meaningful only if it or its consequences persist permanently.
2. Per I8, permanence is underdetermined—we cannot derive from I1–I7 whether any trajectory continues permanently.
3. If (1), then settling whether an experience is meaningful requires settling whether it (or its consequences) persists permanently.
4. But: We make meaning-judgments independently of continuation-judgments. “Was that conversation meaningful?” is answerable by attending to the conversation and its effects. “Will consciousness persist eternally?” is a distinct question. We do not treat the first as requiring resolution of the second.
5. This conceptual independence is evidenced by:
 - The questions have different subject matters (past quality vs. future scope)
 - Different methods address them (reflection on experience vs. metaphysical argument)
 - Competent speakers treat them as distinct inquiries
 - One can be agnostic about continuation while confident about meaning, and vice versa
6. If meaning required permanence (per 1), meaning-judgments would require continuation-judgments (per 3). But they don’t (per 4–5).
7. Therefore, (1) is false: meaning does not require permanence.

Note on the conceptual independence premise. This premise appeals to our conceptual practice—how we actually treat meaning-questions and continuation-questions. Even skeptics about meaning make the distinction; “Is anything meaningful?” and “Will anything continue?” are recognized as different questions. The premise does not claim infallibility about meaning; it claims only that meaning-discourse is not held hostage to continuation-discourse.

Conclusion. Permanence-requirement is false. Meaning is grounded in consequence, not eternity.

11.3 Natural-Language Derivation

Goal: Show that meaning is constituted by consequence (difference-making) and does not require permanence or eternal duration.

11.3.1 Step 1: The existential concern from I8

I8 established that continuation beyond boundaries is underdetermined by I1–I7. This raises a concern: If we can’t know whether experience continues, does anything matter? If cessation is possible, are past experiences meaningless?

This concern implicitly assumes that meaning requires permanence—that significance depends on guaranteed continuation. I9 shows this assumption is false.

11.3.2 Step 2: Meaning requires a ground (BA12)

Per BA12, meaning is not brute. If an experience is meaningful, something grounds its meaningfulness. BA12 is established by three independent arguments: (1) the intelligibility of meaning-questions, (2) the discriminability of meaningful from meaningless experiences, and (3) the parallel with other derived facts that require grounding.

The question is: what grounds meaning?

11.3.3 Step 3: Candidate grounds evaluated (Lemma 9.1)

Three candidates:

(A) Intrinsic properties alone: Insufficient—intrinsic character explains what the experience *is*, not why it *matters*.

(B) Relation to permanent framework: Makes meaning hostage to underdetermined meta-physical claims; but meaning is found independently of resolving such claims.

(C) Consequence—difference-making: Grounded in I1, does not require permanence, provides intelligible basis.

Option (C) is the viable ground.

11.3.4 Step 4: Consequence grounds meaning without requiring permanence (Lemma 9.2)

Experience E is meaningful because it makes a difference to what follows—it shapes subsequent states, influences other experiences, leaves traces.

This consequence-grounding does not require infinite continuation:

- E has consequences $C_1, C_2, \dots$ within the trajectory
- These are realized differences—facts about what happened
- Per I7, termination does not undo these facts
- E 's meaning is constituted by realized consequences, not anticipated future ones

Finite consequence-chains are sufficient. The meaning is in the differences made, not in the duration of making.

11.3.5 Step 5: Underdetermination does not undermine realized meaning (Lemma 9.3)

I8's underdetermination concerns *future* continuation—whether there will be further consequences beyond a boundary.

Meaning is grounded in *realized* consequences—differences already made.

These are distinct:

- Past consequences are facts (per I7)
- Future consequences are underdetermined (per I8)
- Meaning depends on the former, not the latter

The worry conflates constitution (what makes something meaningful) with continuation (whether there will be more). Realized consequences constitute meaning regardless of whether further consequences follow.

11.3.6 Step 6: Permanence-requirement is incompatible with conceptual practice (Lemma 9.4)

If meaning required permanence:

- Meaning-judgments would require resolution of continuation-judgments
- But these are conceptually independent—we answer “Was it meaningful?” without settling “Will it continue forever?”
- Therefore, meaning does not require permanence

Meaning-questions and continuation-questions are distinct. We can determine that a conversation was meaningful without resolving whether consciousness persists eternally.

11.3.7 Step 7: Conclusion

Meaning is constituted by consequence—the difference an experience makes to what follows. This grounding:

- Is rooted in I1 (experience makes a difference)
- Is secured by I7 (termination doesn’t undo occurrence)
- Is independent of I8’s underdetermination (which concerns future scope, not realized consequences)

Duration and permanence are not required. The trajectory matters because it shaped what followed, not because it persists forever. Consequence, not eternity, grounds meaning.

11.4 Symbolic Formalization

11.4.1 Definitions

$\text{Meaningful}(E) \triangleq$ “Experience E has experiential significance—it matters”

$\text{Grounds}(X, Y) \triangleq$ “ X is an ontological basis in virtue of which Y obtains” [I5’s predicate, restated for local reference, not redefined]

$\text{Consequence}(E, C) \triangleq$ “ C is a consequence of E — E made a difference to C ’s obtaining”

$\text{Realized}(C, t) \triangleq$ “Consequence C was realized at time t ”

$\text{Permanent}(E) \triangleq$ “ E or its consequences persist without temporal limit”

$\text{RequiresPermanence} \triangleq \forall E (\text{Meaningful}(E) \rightarrow \text{Permanent}(E))$
[“Meaning requires permanence”—a proposition, not a predicate; it takes no argument]

$\text{ConceptuallyIndependent}(Q_1, Q_2) \triangleq$ “ Q_1 can be answered without resolving Q_2 , and vice versa”

$\text{MeaningQuestion}(E) \triangleq$ “Is E meaningful?”

$\text{ContinuationQuestion} \triangleq$ “Does experience continue permanently?”

$\text{Experience}(E) \triangleq$ “ E is an actualization within a bounded perspective (per I1–I7)”

$\text{Fact_at}(\varphi, t) \triangleq$ “Proposition φ is true as evaluated at time t ” [from I7]

$\text{GroundedByIntrinsic}(E) \triangleq$ “ E ’s meaning is grounded solely in E ’s intrinsic properties”

$\text{GroundedByPermanence}(E) \triangleq$ “ E ’s meaning is grounded in relation to permanence/eternity”

$\text{GroundedByConsequence}(E) \triangleq$ “ E ’s meaning is grounded in E ’s realized consequences”

11.4.2 Axioms

Axiom 28 (Meaning is grounded (from BA12)).

$$\forall E (\text{Meaningful}(E) \rightarrow \exists G \text{Grounds}(G, \text{Meaningful}(E)))$$

If an experience is meaningful, something grounds its meaningfulness.

Axiom 29 (Difference-making occurs (from I1 with I7)).

$$\forall E (\text{Experience}(E) \rightarrow \exists C \text{Consequence}(E, C))$$

Each experience makes at least a constitutive difference to what follows: its occurrence’s ontological difference (I1) persists as fact at every later time (I7), and Consequence’s definition admits constitutive contribution. Causal consequences beyond this are permitted, not assumed—I1’s causal bracket (compatibility with epiphenomenalism) is preserved.

Axiom 30 (Realized consequences persist (from I7)).

$$\forall E \forall C \forall t (\text{Consequence}(E, C) \wedge \text{Realized}(C, t) \rightarrow \forall t' > t: \text{Fact_at}(\text{Realized}(C, t), t'))$$

If a consequence was realized at t , “ C was realized at t ” remains true at all subsequent times.

Axiom 31 (Continuation is underdetermined (from I8)).

$$\text{Underdetermined}(\text{Continues}(T, B), \text{I1–I7})$$

I8’s conclusion, restated in I8’s own vocabulary: whether actualization continues beyond a boundary—within T or through a successor trajectory—is neither entailed nor excluded by I1–I7.

Axiom 32 ($\text{GroundedByConsequence}$ unpacked).

$$\begin{aligned} \forall E (\text{GroundedByConsequence}(E) \rightarrow \exists C \exists t (\text{Consequence}(E, C) \\ \wedge \text{Realized}(C, t) \wedge \text{Grounds}(C, \text{Meaningful}(E)))) \end{aligned}$$

The definition of $\text{GroundedByConsequence}$ written out: a consequence-grounded meaning has at least one realized consequence among its grounds. This axiom does not assert that meaning is consequence-grounded—that is the derivation’s result (step 14, by elimination), not an input.

Axiom 33 (Permanence is not derivable (from I8 via Axiom 31)).

$$\neg \text{Entails}(\text{I1–I7}, \text{Permanent}(E))$$

Whether any experience or its consequences are permanent is not entailed by I1–I7 (Entails as defined at I8): permanence requires continuation, and continuation is not entailed (Axiom 31). Only this non-derivability conjunct is consumed (step 13); no claim that non-permanence is underivable is made or needed.

Axiom 34 (Grounding options exhausted).

$$\forall E (\text{Meaningful}(E) \rightarrow (\text{GroundedByIntrinsic}(E) \vee \text{GroundedByPermanence}(E) \vee \text{GroundedByConsequence}(E)))$$

If E is meaningful, its meaning is grounded by intrinsic properties, permanence-relation, or consequences. Exhaustiveness is defended, not stipulated (Lemma 9.1, Exhaustiveness): a ground is intrinsic or relational; a relational ground either involves E 's making a difference to how things stand from E onward—consequence, in this chapter's definition—or relates E to the permanent, or relates E to something E contributes nothing to, and the last cannot ground why E matters.

Axiom 35 (Conceptual independence of meaning and continuation (defended philosophical premise; Lemma 9.4)).

$$\text{ConceptuallyIndependent}(\text{MeaningQuestion}(E), \text{ContinuationQuestion})$$

Whether E is meaningful can be answered without resolving whether experience continues permanently.

11.4.3 Derivation

1. Suppose RequiresPermanence: $\forall E (\text{Meaningful}(E) \rightarrow \text{Permanent}(E))$
[Assumption for reductio]
2. $\neg \text{Entails}(\text{I1–I7}, \text{Permanent}(E))$
[Axiom 33]
3. If RequiresPermanence, then answering MeaningQuestion(E) requires answering ContinuationQuestion
[From 1: a warranted affirmative answer to MeaningQuestion would commit to Permanent(E), so warranting it requires resolving ContinuationQuestion; negative answers are untouched, and the affirmative case is what Axiom 35's practice-evidence concerns]
4. $\neg \text{ConceptuallyIndependent}(\text{MeaningQuestion}(E), \text{ContinuationQuestion})$
[From 3: meaning-questions would depend on continuation-questions]
5. $\text{ConceptuallyIndependent}(\text{MeaningQuestion}(E), \text{ContinuationQuestion})$
[Axiom 35]
6. Contradiction: $(4) \wedge (5)$
7. $\neg \text{RequiresPermanence}$
[From 1–6, reductio]
8. $\forall E (\text{Meaningful}(E) \rightarrow \exists G \text{Grounds}(G, \text{Meaningful}(E)))$
[Axiom 28, BA12]
9. $\forall E (\text{Meaningful}(E) \rightarrow (\text{GroundedByIntrinsic}(E) \vee \text{GroundedByPermanence}(E) \vee \text{GroundedByConsequence}(E)))$
[Axiom 34]
10. Let E^* be a meaningful experience.
11. $\text{GroundedByIntrinsic}(E^*) \vee \text{GroundedByPermanence}(E^*) \vee \text{GroundedByConsequence}(E^*)$
[From 9, 10]
12. $\neg \text{GroundedByIntrinsic}(E^*)$
[Lemma 9.1, case A: Intrinsic properties constitute what E^* is (its qualitative character), not why it matters. GroundedByIntrinsic(E^*) would require E^* 's meaning to supervene solely on intrinsic character—but experiences with identical character can differ in meaning depending on consequences. Therefore intrinsic character is necessary but insufficient to ground meaning.]

13. $\neg \text{GroundedByPermanence}(E^*)$
[Lemma 9.1, case B + Step 7: (i) Permanence is not derivable from I1–I7 (Axiom 33), so it is not available as a ground the chain can deliver. (ii) Were E^* 's meaning grounded in a permanence-relation, $\text{Meaningful}(E^*)$ would require the permanent relatum—the per-instance form of $\text{RequiresPermanence}$, refuted by the same conceptual-independence reductio (steps 1–7, which run schematically in E).]
14. $\text{GroundedByConsequence}(E^*)$
[From 11, 12, 13 by disjunctive syllogism]
15. $\exists C^* \exists t (\text{Consequence}(E^*, C^*) \wedge \text{Realized}(C^*, t) \wedge \text{Grounds}(C^*, \text{Meaningful}(E^*)))$
[From 14, Axiom 32 (the unpacking); that consequences exist at all is independently secured by Axiom 29]
16. $\text{Consequence}(E^*, C^*) \wedge \text{Realized}(C^*, t) \rightarrow \forall t' > t: \text{Fact_at}(\text{Realized}(C^*, t), t')$
[Axiom 30]
17. The ground of E^* 's meaning (realized consequence C^*) persists as fact
[From 15, 16]
18. $\therefore \text{Meaningful}(E^*)$ is grounded in realized consequences that persist as facts, without requiring permanence
[From 7, 14, 15, 17]

11.4.4 Conclusion

$\neg \text{RequiresPermanence} \wedge$

$\forall E (\text{Meaningful}(E) \rightarrow \text{GroundedByConsequence}(E))$

Meaning does not require permanence. Meaning is grounded in realized consequences—the differences an experience makes to what follows. These differences persist as facts (I7) regardless of whether the trajectory continues (I8).

Discharges Inevitability 9. The statement's clauses, walked: *meaningful insofar as it makes a difference to what follows*—discharged at the grounding direction the formalism proves: when E is meaningful, a realized consequence grounds it (the second conjunct, steps 8–17); “insofar as” claims no sufficiency—consequence-having without meaning remains possible (the Mere Occurrence response)—and the derivation delivers the necessity-of-ground direction only; *duration or permanence is not required*—the first conjunct, $\neg \text{RequiresPermanence}$, by reductio against conceptual independence (steps 1–7).

11.5 Objections Addressed

Objection (Nihilism). If everything eventually ends—if even the universe will undergo heat death—then nothing ultimately matters. All consequences eventually dissipate. Doesn't this vindicate meaning-nihilism?³⁶

Response. This objection conflates two claims:

(a) **Ultimate consequence:** All consequences eventually cease to have further consequences.

³⁶For the classic philosophical articulation of the absurdist challenge, see Nagel, T. (1971). The Absurd. *The Journal of Philosophy*, 68(20), 716–727. DOI: 10.2307/2024942. Nagel argues the sense of absurdity arises from the collision between our serious engagement in life and our capacity to view that engagement from an external standpoint. I9's argument is compatible with Nagel's analysis: meaning is constituted by consequence, not by metaphysical guarantees against this collision.

(b) No meaning: Therefore, nothing is meaningful.

The inference from (a) to (b) requires the premise: Meaning requires unlimited continuation of consequences. But I9 rejects this premise.

Meaning is grounded in *realized* consequences, not *ultimate* consequences. The conversation you had yesterday was meaningful because of its effects on you and your interlocutor—not because those effects will propagate forever.

Consider: Does a symphony become meaningless if the concert hall eventually falls silent? Does a kindness become meaningless if the recipient eventually dies? The nihilist’s reasoning would say yes—but this conflicts with how meaning is actually constituted.

Moreover, the nihilist’s position is self-undermining: If nothing matters, the nihilist’s argument doesn’t matter either. But they present it as though it should convince us—implicitly claiming it matters.

I9’s position: Finite consequence-chains ground meaning. Heat death (or any ultimate terminus) does not retroactively drain meaning from realized differences.

Objection (Mere Occurrence Isn’t Meaning). I9 seems to derive meaning from mere occurrence and consequence. But lots of things occur and have consequences without being meaningful. A rock falling has consequences but isn’t meaningful. What distinguishes meaningful consequences from mere causal chains?

Response. I9 does not claim that all consequences are meaningful. It claims that meaning, when it obtains, is grounded in consequence—not that consequence is sufficient for meaning.

The full structure:

- Necessary condition: For *E* to be meaningful, *E* must have consequences (difference-making per I1)
- Grounding relation: When *E* is meaningful, its meaningfulness is grounded in those consequences
- Not sufficient: Not all consequence-having events are meaningful

What distinguishes meaningful consequences? This is a content question—which *specific* consequences count as meaning-conferring. I9 addresses the *form* of meaning (consequence-grounded, not permanence-requiring), not the full specification of content.

However, I9 can impose a minimal constraint: Meaningful consequences are those that make a difference *for experiential beings* or *within a web of concerns*. This “for-ness” excludes mere physical causation while remaining neutral on specific value theories.

The rock falling has consequences, but not consequences *for* any experiential trajectory (unless someone observes it, is struck by it, etc.). Human care has consequences *for* the person cared-for—consequences that register within an experiential perspective. This perspectival “for-ness” is the minimal constraint I9 can impose: meaningful consequences are those that make a difference to or within experiential trajectories.

This parallels I3: I3 established that determinacy requires an selection principle without specifying the principle’s full nature. Similarly, I9 establishes meaning’s form without specifying complete content-criteria—while constraining the answer to consequences *for* experiential beings.

Objection (Subjective vs. Objective Meaning). I9 seems to assume meaning is objective—that experiences really are meaningful. But maybe meaning is just subjective projection. We feel things matter, but nothing really does.

Response. I9 is neutral on the objective/subjective debate. Its claim is simply: *whatever* meaning is (objective or subjective), it is grounded in consequence, not permanence.

If meaning is objective, then realized consequences objectively ground it. If meaning is subjective (projection, attitude, stance), then the projection/attitude is directed at consequences—what mattered is what made a difference.

Either way, permanence is not required. The subjectivist who says “meaning is just what I care about” still faces the question: What do you care about? Presumably consequences—whether the project succeeded, whether the relationship flourished, whether the experience had effects you valued. These are consequence-relations.

I9 does not adjudicate subjectivism vs. objectivism. It establishes that whichever view is correct, meaning’s form is consequence-grounded.

Objection (Future Consequences Matter Too). You distinguish realized consequences from anticipated consequences. But surely anticipated future consequences matter for meaning. My present act is meaningful partly because of what it will lead to. If I8 leaves this underdetermined, isn’t present meaning undermined?

Response. Distinguish two roles for anticipated consequences:

(a) **Motivational:** Anticipated consequences shape action—we act for the sake of expected outcomes. This is compatible with I9. Acting for anticipated consequences doesn’t require those consequences to be *guaranteed*; it requires only that they are *pursued*.

(b) **Constitutive:** Meaning is constituted by consequences that *will* obtain, not just those that *have* obtained. This is the stronger claim.

I9 rejects (b) in favor of a realized-consequence view. Here’s why:

If meaning required *future* consequences to be determinate, then:

- No act could be meaningful until its future consequences materialize
- But consequences have consequences—so meaning would be perpetually deferred
- Nothing would be meaningful *yet*—meaning would always be “ahead” of us

This is absurd. Past experiences are meaningful now, not pending future adjudication.

Moreover, I8’s underdetermination applies to anticipated consequences. If meaning required them, meaning would inherit their underdetermination. But meaning does not seem undetermined in the way continuation is.

Refined position: Anticipated consequences can *add* to meaning (if they materialize, new meaning is constituted). But present meaning is already grounded in realized consequences. Future consequences, if they occur, will add new meaning-relations—but their underdetermination doesn’t subtract from existing meaning.

Objection (This Is Just Consequentialism). I9 sounds like ethical consequentialism—the view that consequences determine moral value. Is this just importing a controversial ethical theory?

Response. I9 is not ethical consequentialism. Key differences:

(a) **Domain:** Ethical consequentialism concerns what makes actions *morally right*. I9 concerns what makes experiences *meaningful*. These are distinct questions. An experience can be meaningful without being morally right (a thrilling crime) or morally right without being meaningful (a trivial but correct act).

(b) **Scope of consequences:** Ethical consequentialism typically counts all consequences for all affected parties. I9 makes no such claim—it concerns the role of consequences in grounding meaning, not how to aggregate or compare consequences.

(c) **Neutrality on ethics:** I9 is compatible with deontology, virtue ethics, and other non-consequentialist ethical views. A Kantian can accept I9: duties may ground right action, while consequences ground experiential meaning. These are not in conflict.

I9 uses “consequence” in a minimal sense: the difference an experience makes to what follows. This is not a commitment to ethical consequentialism.

Objection (Meaning and the Eternal). Many philosophical traditions hold that meaning comes from connection to the eternal or permanent. I9 seems to dismiss this. Isn't this a substantive metaphysical commitment?

Response. I9 establishes that meaning does not *require* permanence—it is grounded in consequence, not eternity. This is a constraint on the *form* of meaning, not a denial that permanence exists.

The derivation chain has already imposed a constraint on related views: an unchanging entity's persisting cannot be what experiential identity consists in (I6), so meaning grounded in a permanent substance's survival is not available. Relation to the permanent as a general ground is closed here by this chapter's own argument (Lemma 9.1, case B), not by any verdict on temporal metaphysics, on which the chain is neutral (I5's Terminological note).

What I9 specifically rules out: Views claiming that life is meaningless *without* guaranteed permanence. The argument "Without guaranteed continuation, nothing matters" fails at I9—meaning is constituted by consequence, not by guaranteed eternity.

What survives the full chain? No extant framework we have examined in the philosophical literature fully survives all nine inevitabilities without facing serious pressure. The critical challenge point is I4: most current theories fail to provide a principled, non-structural account of what bounds experiential perspectives, though Kastrup's analytic idealism faces pressure rather than outright failure. Consequence-based meaning theories (compatible with I9) and pattern-continuity accounts of identity (compatible with I6) represent progress, but no complete framework has yet fully satisfied the boundedness requirement.

The derivation chain applies the same logical constraints to all frameworks.

Objection (Phenomenology of Meaning). You appeal to conceptual practice—that we treat meaning-questions and continuation-questions as independent. But conceptual practice can be wrong. Maybe we're confused about meaning.

Response. The appeal to conceptual independence in Lemma 9.4 is carefully limited. It does not claim:

- That meaning-judgments are always correct
- That our concept of meaning is fully adequate
- That conceptual practice is infallible

It claims only:

- Meaning-questions and continuation-questions are *treated as* distinct
- This treatment is systematic and widespread
- If meaning *required* permanence, this treatment would be incoherent

Even if our concept of meaning is confused in some ways, the conceptual independence point stands. The questions "Was it meaningful?" and "Will it continue forever?" are recognized as different inquiries requiring different considerations. This independence is evidence that meaning, as we understand it, does not constitutively require permanence.

If a critic claims our entire conceptual practice around meaning is radically confused—that we *should* treat meaning as requiring permanence—they owe an argument for this revision. The burden is on them to show why our meaning-talk should be held hostage to continuation-questions.

Objection (Empty Meaning Without Permanence). Even if meaning doesn't logically require permanence, doesn't finitude make meaning feel hollow? Knowing everything ends taints the meaning we find.

Response. This objection concerns the *psychology* of meaning, not its *constitution*. I9 addresses constitution: what grounds meaning. The psychological question—how we feel about finitude—is distinct.

Two points:

(a) **The “taint” is not universal:** Many find finitude *enhances* meaning. Scarcity increases value; limitedness focuses attention; mortality makes moments precious. The “taint” is not a necessary psychological response but a contingent one that varies across individuals and cultures.

(b) **Feeling hollow doesn’t make meaning hollow:** If meaning is constituted by consequence, then the feeling that finitude empties meaning is an error—a misattribution of meaning’s requirements. The feeling may be understandable, but it doesn’t establish that meaning actually requires permanence.

I9 can acknowledge the psychological challenge while maintaining the metaphysical point: meaning is constituted by consequence, not permanence. Coming to terms with this may be psychologically difficult, but the difficulty doesn’t change the structure.

Objection (The Heat Death Scenario). Consider the heat death of the universe: eventually all structure dissipates, all information is lost, no consequences propagate further. In this scenario, didn’t everything fail to ultimately matter?

Response. “Ultimately matter” is ambiguous:

(a) **Matter in the limit:** Have consequences in the infinite future. Under heat death, nothing matters in this sense.

(b) **Matter in realized history:** Made differences to what followed during the trajectory. Everything that had consequences mattered in this sense.

I9 claims (b) is the relevant sense for meaning. (a) is the permanence-requirement in disguise. The heat death scenario:

- All consequences eventually cease to have further consequences
- But all realized consequences were realized
- Per I7, this realized-ness is not undone by the cessation

Did the conversations matter? Yes—they made differences to what followed. Does heat death undo this? No—the differences were made. Heat death prevents *future* differences, not *past* ones.

The intuition that heat death makes everything meaningless relies on the permanence-requirement. But I9 rejects this requirement. Finite consequence-chains suffice. The universe’s eventual silence does not retroactively mute the meaningful differences made within it.

11.6 Scope and Limits

11.6.1 What This Derivation Establishes

- Meaning requires a ground; it is not brute (BA12, with three independent arguments)
- Consequence (difference-making) is the viable ground for meaning (Lemma 9.1)
- Consequence grounds meaning without requiring permanence (Lemma 9.2)
- Underdetermined continuation does not undermine realized meaning (Lemma 9.3)
- Permanence-requirement is incompatible with conceptual practice (Lemma 9.4)
- Meaning is constituted by realized consequences—the differences an experience makes to what follows
- Duration and permanence are not required for meaning
- Meaningful consequences are minimally constrained to those that make a difference *for* experiential beings

Formal statement: Given that experience makes a difference (I1), that termination does not undo occurrence (I7), that continuation is underdetermined (I8), and that meaning requires a ground (BA12), meaning is grounded in realized consequences. The trajectory matters because it shaped what followed, not because it persists forever. Consequence, not eternity, grounds meaning.

11.6.2 What This Derivation Does Not Establish

- **What specific consequences are meaning-conferring:** I9 addresses the form of meaning (consequence-grounded), not its full content. The “for-ness” constraint is minimal; which consequences within experiential trajectories count as meaning-conferring is a further question.
- **How much meaning any experience has:** I9 establishes grounding, not measurement.
- **That all experiences are meaningful:** Some may lack sufficient consequences or the right kind of consequences. I9 is compatible with meaningless experiences.
- **That meaning is objective/subjective:** I9 is neutral on this debate.
- **Whether there is “ultimate” or “cosmic” meaning:** I9 concerns experiential meaning within trajectories. Whether there is meaning beyond this is not addressed.
- **Practical guidance for finding meaning:** I9 is metaphysical, not self-help.

11.7 Implications for Existing Frameworks

This chapter carries no framework survey: none of the frameworks surveyed at I4 fully passes it, so no surviving population reaches I9 for assessment. Where every framework left the chain is collected in the Conclusion’s constraint table.

What I9 does bear on is a class of arguments rather than frameworks: those that make meaning hostage to permanence. The argument “without guaranteed continuation, nothing matters”—pessimism from impermanence—fails here: meaning is grounded in realized consequence, and I9’s derivation is precisely that this grounding does not require permanence. Conversely, consequence-friendly accounts of meaning (existentialist commitment, pragmatist effect, narrative arc) are consonant with I9’s form of meaning, though I9 neither adopts nor grades them—they are theories of meaning’s content, not candidate accounts of experience.

11.8 Bridge to Conclusion

Inevitability 9 establishes: **Meaning requires consequence, not eternity.**

This completes the derivation chain. The Conclusion summarizes the nine constraints and their implications for existing frameworks.

11.9 Summary

Aspect	Status
Logical form	Valid deduction from I1 + I7 + I8 + BA12 + Axioms 28–35 + Lemmas 9.1–9.4
New assumption	BA12 (meaning is grounded)—three independent arguments provided
Lemma 9.1	Meaning requires ground; consequence is viable candidate (eliminative via Axiom 34)
Lemma 9.2	Consequence grounds meaning without requiring permanence
Lemma 9.3	Underdetermined continuation $\neq$ underdetermined meaning
Lemma 9.4	Permanence-requirement incompatible with conceptual independence (modus tollens)
Nihilism objection	Conflates ultimate and realized consequences
Mere occurrence	Consequence necessary, not sufficient; “for-ness” constraint added
Meaning and permanence	Permanence-grounding unavailable (I6’s result; this chapter’s case-B closure); chain neutral on temporal metaphysics
Heat death	Finite chains suffice; cessation doesn’t unmake realized differences
Key innovation	Meaning constituted by realized consequence, not permanence

12 Conclusion: The Challenge to All Frameworks

12.1 Summary of the Derivation Chain

The nine inevitabilities constitute a derivation chain of pre-theoretic constraints. Each builds on those preceding it; later constraints cannot be contested without contesting the earlier ones from which they follow.

#	In Brief	Core Claim
FP	Experience exists	Self-verifying; denial instantiates what it denies
I1	Difference is unavoidable	Reality-with-experience $\neq$ reality-without-experience
I2	Appearing $\neq$ structure alone	The difference is not purely structural
I3	Determinacy requires actualization	Something not purely structural grounds which experience occurs
I4	Experiential boundaries are real	Distinct perspectives are not mutually accessible
I5	Neither fixed nor arbitrary	Actualization is constrained but not fixed in advance
I6	Identity is continuity	Identity consists in continuity of pattern, not the persistence of an unchanging entity
I7	Termination doesn't undo occurrence	Past experiential facts—and the trajectories they composed—persist
I8	Continuation is underdetermined	Nature alone does not determine beyond-boundary scope
I9	Meaning requires consequence	Difference-making, not permanence, grounds significance

The logical pivot. Inevitability 2 carries the primary logical weight of the derivation chain. It is where reductive structuralist accounts—including standard physicalism, functionalism, and IIT—fail.

Direction of entailment. The chain does not commit a reader forward. Accepting the Foundational Premise and I1–I2 does not oblige anyone to accept I3–I9, because advancing to each subsequent stage requires the inputs introduced there—background assumptions, declared Observations, or point-of-use commitments: I3 requires BA6 and BA7, I5 requires BA8, and so on. Reject BA7 and the chain stops at I3. What the chain does establish runs in the opposite direction: because each inevitability is derived from its predecessors, a reader who accepts I5 is thereby committed to FP through I4, and one who accepts I9 is committed to the whole. The results cannot be adopted selectively—an inevitability cannot be taken while its premises are refused—but they can be declined at any stage, at the cost of whichever background assumption that stage requires.

12.2 The Background Assumptions

The derivation chain rests on twelve background assumptions, each defended where introduced. These are not hidden premises but explicit commitments, any of which a critic may contest—at

the cost of the consequences articulated in the relevant sections.

BA	Name	Role in Chain
1	Propositional attitudes exist	Grounds FP’s self-verification argument
2	Logical consistency	Standard logical framework
3	Propositional attitudes require appearing	Links denial to experiential state
4a	Inclusion	Everything that exists is part of reality
4b	Individuation by inclusion	Reality’s identity answers at least partly to what it contains
5a	Structural exhaustion of the third-personal	Regiments “structural” per structuralists’ own usage
5b	Entailment does not generate subject matter	Blocks first-personal conclusions from third-personal premises
6	Determinacy of appearing	Experience is <i>this</i> rather than another
7	Grounding of experiential determinacy	Anti-brute commitment for experience
8	Experiential coherence	Experience exhibits pattern, not chaos
9	Experiential succession	Moments connect in temporal flow
10	Facticity of the past	Past-tense truths persist
11	Nature-scope independence	For contingent phenomena, what X is doesn’t determine how much of it exists
12	Meaning is grounded	Meaning is not brute

Critical assumptions. BA7 (anti-brute commitment) is explicitly flagged in I3. Critics who reject BA7 must accept brute experiential facts—worlds differing only in experiential specifics with no ground for the difference. This is not a competing theoretical position but an abandonment of theoretical inquiry. If ‘it just is’ counts as an answer, every question has a trivial solution: stop asking. Notably, this is precisely the kind of explanatory abdication that motivated structuralist programs in the first place.

12.3 Framework Failures: Where Each Falls

The following table identifies where major frameworks fail to satisfy the constraints. “Fails at” means the framework cannot accommodate the constraint without modification—it is inadequate as a complete account of consciousness at that point.

Framework	Fails At	Reason
Eliminative materialism	FP	Denies experience occurs; self-refuting
Strong illusionism	FP	If no appearing at all, fails FP; if illusion appears, proceeds to I2
Reductive physicalism	I2	Claims experience <i>is</i> physical structure; but structure is 3P, appearing is 1P
Standard functionalism	I2	Function is structure; absent qualia problem is refutation

Continued on next page

Framework	Fails At	Reason
Strong IIT	I2	Φ is third-person calculable; identification is stipulative
Weak IIT	I2	Constitution question unaddressed
Global Workspace Theory	I2	Information broadcast architecture is exhaustively structural
Higher-Order Theories	I2	Meta-representation is a structural/functional relation
Attention Schema Theory	I2	Weak form, as a complete account, is computational/structural; strong form (consciousness is <i>only</i> the model) exits at FP
Predictive Processing	I2	Prediction error minimization is computational process
Biological Naturalism	I3	Irreducibility-affirming form meets I2; grounds exhaustively neurobiological—structural, so no non-structural ground
Anomalous Monism	I2	Token identity with physical events; structure remains complete
Orch- <i>or</i> (standard)	I2	Quantum processes are still third-person describable physics
Brute supervenience	I3	No ground for supervenience relation; violates BA7
Quietist non-reductionism	I3	Embraces brute further facts; accepts BA7's costs
Panpsychism	I4	No extant combination solution specifies non-structural boundedness principle
Russellian monism	I4	No principled account of how intrinsic natures bound into distinct experiential centers
Property dualism	I4	No extant formulation specifies what makes experiential properties inherently bounded
Substance dualism	I4	Substance-individuation primitive (index or brute) or structural; multiplicity of minds ungrounded
Neutral monism	I4	No account of how neutral substance divides into bounded centers
Undifferentiated cosmopsychism	I4	Cannot ground even the appearance of perspectival separation
Reflexive Monism (Velmans)	I4	Perspectival variation acknowledged but boundedness grounded structurally
Hoffman's Conscious Realism	I4	Agent distinctness stipulated, not grounded
Quantum Mind (Stapp)	I4	Boundedness grounded in brain differences (structural)

Continued on next page

Framework	Fails At	Reason
Process Philosophy (Whitehead)	I4	Boundedness delegated to God’s provision of initial aims—brute appeal disguised
Dual-Aspect Monism (Pauli/Jung)	I4	Distinct individuals presupposed by the epistemic-split account, not produced by it
Idealism (generic)	I4	As a bare family thesis, supplies no account of perspectival boundaries; variants assessed on their own entries

No framework reaches I5–I9: none passes I4. The later chapters nonetheless bar classes of views and arguments: hard structural determinism about experiential outcomes (I5, from I2’s non-entailment); continuation or identity stories built on a persisting substance (I6); denial of past-tense experiential truth (I7—at the cost of BA10, a reject path rather than a graded framework); a priori arguments deriving scope from nature, whether for immortality or extinction (I8); and arguments that make meaning hostage to permanence (I9).

12.4 Frameworks That Face Pressure But May Have Resources

One framework survives I2 and I3 and faces significant pressure at I4 without being ruled out. It supplies a genuine mechanism whose specification is incomplete—a different condition from having no account, or from having an account that bottoms out in a brute posit. BA7 penalizes brute posits; it does not penalize incompleteness.

Kastrup’s Analytic Idealism posits reality as universal consciousness (mind-at-large) with individual minds as dissociated alters. This survives I2 (experience not reduced to structure) and I3 (mind-at-large grounds experience). The dissociation model faces pressure at I4. Kastrup provides a genuine mechanism—graph disconnection within an experiential medium, analogous to dissociative identity disorder—but the crucial question is what determines *where* boundaries form. If dissociation correlates with physical bodies, boundedness is inherited from structural correlates. If dissociation is grounded solely in mind-at-large’s intrinsic nature, why *this* distribution of boundaries rather than another? If dissociation is entirely non-structural but primitive, it risks being brute (raising BA7 concerns). The framework has resources that might be developed further, but as it stands, the dissociation mechanism describes *that* boundaries form without fully specifying *what grounds* their particular locations.

12.5 Frameworks That Fail at I4: Extended Analysis

Several entries in the failure table warrant fuller treatment, either because they are sometimes credited with I4 resources they do not have, or because their failure mode is instructive.

Hoffman’s Conscious Realism posits consciousness as fundamental, with reality as a network of interacting conscious agents and physical reality as an interface shaped by evolution for fitness rather than truth. This survives I2 (consciousness fundamental) and I3 (conscious agents as actualization loci). It fails at I4, though not for the reason usually given. Hoffman’s individuation is not structural: agents are distinguished by their qualia over distinct experience spaces, and the formalism does represent bounded, mutually inaccessible perspectives. What it does not do is ground them. The disjointness of those experience spaces is assigned rather than derived, and the theory’s own base plurality of agents is explicitly posited. The combination and fusion machinery addresses

how many subjects become one, not what keeps one from another—and the product of two agents itself qualifies as a single agent. Hoffman names the outstanding question himself, as Schrödinger’s arithmetic paradox, and treats it as open.

Quantum Mind Theories (Stapp, etc.) propose that consciousness plays a fundamental role in quantum collapse/actualization. This potentially survives I2 (consciousness as non-structural cause of collapse) and I3 (consciousness as selection principle). It fails at I4: what bounds the consciousness that causes collapse? If every quantum measurement involves conscious actualization, what distinguishes *my* conscious collapses from *your* conscious collapses? Stapp appeals to individual brains/minds—grounding boundedness in physical (structural) differences between neural systems. This fails I4.

Process Philosophy (Whitehead) individuates actual occasions by their subjective aim and bounds them by their satisfaction, making it the framework in this survey most deliberately engineered to address boundedness. Concrescence is a real mechanism. It fails at I4 because the mechanism’s grounding input is delegated to God’s primordial nature, itself an unexplained ordering of eternal objects. Appeal to the necessity of that primordial nature does not repair the defect: modal necessity is not explanatory grounding, and necessary existence does not fix content—why *this* aim to *this* occasion remains unanswered. Secularized reconstructions face a trilemma (unexplained aims, a substitute unexplained principle, or regress into prior occasions), so the framework fails via BA7 with or without theism.

Dual-Aspect Monism (Pauli/Jung) posits mind and matter as complementary aspects of a single psychophysically neutral reality, the *unus mundus*, with the mind-matter distinction arising through epistemic splits of that undivided ground. This survives I2 and I3. It fails at I4: the mechanism explains how the mind/matter distinction emerges and how conscious contents arise within a given individual, but not why there are multiple bounded perspectives at all. Distinct individuals are presupposed by the epistemic-split account rather than produced by it, and Pauli conceded as much—that one does not understand why a psyche must be assigned to others as well, only one’s own being detectable.

Neutral monism posits a neutral substance underlying both mental and physical. But how does this neutral base divide into bounded experiential centers? The framework provides no answer.

Idealism holds that reality is fundamentally experiential. But what explains plural perspectives rather than cosmic unity? Idealism must provide a differentiation principle, and no extant version does so without either appealing to structure or leaving the question unanswered.

12.6 The Diagnostic Value of These Constraints

These constraints reveal that the combination/boundedness problem (I4) remains unsolved in the frameworks we have examined in the analytic philosophy of mind literature. Our examination is not exhaustive—we have not surveyed Continental phenomenology, non-Western philosophical traditions, or every variant of the positions discussed.³⁷ A framework satisfying all nine would need to specify a non-structural principle that is *constitutively* bounded—where boundedness is not added to pre-existing experiential substrate but is intrinsic to what it means to be an experiential center. We have not found such a framework in the literature we have examined, but the constraints define what one would need to provide. Whether the grounds the chain requires—actualization (I3), demarcation (I4), distribution (I5)—unify into a single principle or remain plural is likewise left open; either answer carries the obligation stated in I3’s Scope and Limits (Unified or plural).

³⁷Notable omissions include detailed engagement with Husserlian phenomenology, Buddhist philosophy of mind, and some recent proposals (e.g., Mørch’s “phenomenal powers” approach). We welcome extensions of this analysis to frameworks we have not examined.

The absence of a known solution does not invalidate the constraints; it diagnoses the current state of the field. Just as thermodynamics reveals why perpetual motion machines fail without itself providing a working engine, these constraints reveal why extant consciousness theories fail without themselves constituting a theory. The value is diagnostic: they identify precisely what is missing from current approaches and what any adequate successor must supply.

12.7 The Structure of the Challenge

The derivation chain presents a cumulative challenge. Each inevitability narrows the space of viable frameworks:

- **FP** eliminates eliminativism
- **I1** forces ontological commitment
- **I2** eliminates reductive structuralism (the dominant position)
- **I3** requires a non-structural ground for determinacy
- **I4** requires that ground to be bounded—this is where the frameworks we have examined fail
- **I5** characterizes actualization as constrained-but-open
- **I6** grounds identity in continuity of pattern, not a persisting entity—static substance stories fall as identity accounts
- **I7** secures the facticity of the past
- **I8** establishes the limits of what nature determines
- **I9** grounds meaning in consequence

The critical transition is $I1 \rightarrow I2$. Most frameworks accept I1 (experience makes a difference). I2 asks: *what kind* of difference? The answer—not purely structural—eliminates the dominant physicalist, functionalist, and information-theoretic approaches.

The critical failure point is I4. Frameworks that survive I2 and I3 (by positing non-structural experiential ingredients) uniformly fail to specify what bounds those ingredients into distinct perspectives. The combination/boundedness problem is not merely difficult—it is, among the frameworks we have examined, unsolved.

12.8 What These Constraints Do Not Tell Us

The nine inevitabilities establish what any viable account of consciousness *must* accommodate. They do not tell us:

- **What the selection principle is.** I3 establishes that such a principle exists; whether it is an intrinsic nature, a fundamental law, a sui generis property, or something else is a further question.
- **How boundaries form.** I4 establishes that boundaries are real and must be grounded non-structurally; the mechanism of boundary-formation is not specified. This is precisely where current frameworks fail—they establish the need but do not meet it.
- **Whether experience continues beyond death.** I8 explicitly leaves this underdetermined. The constraints define the nature of experience, not its scope.
- **Which specific experiences are meaningful.** I9 establishes the form of meaning (consequence-grounded); the content—which consequences count as meaning-conferring—is a further question.

- **Which framework is correct.** The constraints eliminate inadequate frameworks but do not positively establish which account is true. A framework satisfying all constraints would be necessary but not sufficient for correctness.

12.9 The Path Forward

These constraints do not complete the philosophy of consciousness. They clear ground—and in doing so, they reveal that the ground is not yet occupied. By establishing what any viable account must accommodate, they focus inquiry on the central unsolved problem:

1. **The boundedness problem.** What non-structural principle grounds the boundaries between experiential perspectives? This is the combination problem restated as a constraint. Until this is solved, no framework can claim adequacy.
2. **What is the selection principle?** I3 establishes that such a principle exists; can it be further characterized without appealing to structure?
3. **How do experiential boundaries relate to physical/biological boundaries?** Correlation is evident; constitution is the question. The answer cannot be that physical boundaries *are* experiential boundaries (that would violate I2/I4).
4. **What are the empirical signatures of non-structural actualization?** Can they be detected, or is the selection principle necessarily beyond empirical access?

These constraints present significant challenges that the frameworks we have examined have not yet resolved. We invite responses that either satisfy these constraints—particularly I4’s boundedness requirement—or identify where our analysis has erred.

12.10 Summary Table: The Full Chain

Convention: the Builds From column lists each chapter’s direct consumption, as its own Summary states it; the Introduction’s Derivation Chain table lists FP wherever it is used, directly or transitively.

#	Builds From	Key Assumption	Representative Casualties
FP	—	BA1–3 + the Entertaining-is-evaluating note (one stated observation)	Eliminativism
I1	FP	BA4a–b	(Most accept)
I2	I1	BA5a–b + the Note on 3P Closure	Physicalism, functionalism, IIT, GWT, HOT, AST, PP
I3	I2	BA6–7 + the Ground-account link	Brute supervenience, Biological Naturalism
I4	I3	None—one stated observation (co-presence) + three point-of-use commitments	Panpsychism, Russellian monism, Property dualism, Substance dualism, Neutral monism, Undifferentiated cosmopsychism, Reflexive monism, Dual-aspect monism, Hoffman, Stapp, Process philosophy
I5	I2, I3, I4	BA8	Hard structural determinism
I6	FP, I2–I5	BA9 + the two point-of-use principles	Static substance stories, as identity accounts
I7	FP, I1, I4, I6	BA10 + the Connection-registration bridge	(Most accept)
I8	I1–I7	BA11 + the scope inference principle	A priori scope arguments
I9	I1, I7, I8	BA12	Permanence-hostage meaning arguments

References

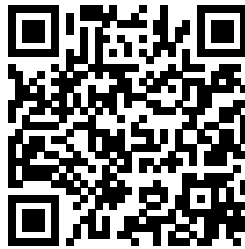
- Allan, L. (2022). Hoffman's Conscious Realism: A Critical Review. *Rational Realm*. Available at: <https://www.rationalrealm.com/philosophy/metaphysics/hoffman-conscious-realism.html>
- Alter, T. & Nagasawa, Y. (Eds.). (2015). *Consciousness in the Physical World: Perspectives on Russellian Monism*. Oxford University Press.
- Amijee, F. (2021). Explaining Contingent Facts. *Philosophical Studies*, 178(4), 1163–1181. DOI: 10.1007/s11098-020-01487-y
- Albahari, M. (2019). Beyond Cosmopsychism and the Great I Am: How the World Might be Grounded in Universal 'Advaitic' Consciousness. In W. Seager (Ed.), *The Routledge Handbook of Panpsychism* (pp. 119–130). New York: Routledge.
- Albahari, M. (2019). Perennial Idealism: A Mystical Solution to the Mind-Body Problem. *Philosophers' Imprint*, 19(44), 1–37.
- Aquinas, T. *De Ente et Essentia* [On Being and Essence]. Various editions and translations available.
- Atmanspacher, H. (2012). Dual-aspect monism à la Pauli and Jung. *Journal of Consciousness Studies*, 19(9–10), 96–120.
- Baars, B. (1988). *A Cognitive Theory of Consciousness*. Cambridge University Press.
- Chalmers, D. (1996). *The Conscious Mind: In Search of a Fundamental Theory*. Oxford University Press.
- Chalmers, D. (2016). The Combination Problem for Panpsychism. In G. Brüntrup & L. Jaskolla (Eds.), *Panpsychism: Contemporary Perspectives* (pp. 179–214). Oxford University Press.
- Chalmers, D. (2016). Panpsychism and Panprotopsychism. In G. Brüntrup & L. Jaskolla (Eds.), *Panpsychism: Contemporary Perspectives*. Oxford University Press.
- Chalmers, D. & McQueen, K. (2022). Consciousness and the Collapse of the Wave Function. In S. Gao (Ed.), *Consciousness and Quantum Mechanics*. Oxford University Press.
- Clark, A. (2013). Whatever next? Predictive brains, situated agents, and the future of cognitive science. *Behavioral and Brain Sciences*, 36(3), 181–204.
- Dasgupta, S. (2016). Metaphysical Rationalism. *Noûs*, 50(2), 379–418. DOI: 10.1111/nous.12082
- Della Rocca, M. (2010). PSR. *Philosophers' Imprint*, 10(7), 1–13.
- Descartes, R. (1641). *Meditationes de prima philosophia* [Meditations on First Philosophy]. Various editions and translations available.
- Foster, J. (1991). *The Immaterial Self: A Defence of the Cartesian Dualist Conception of the Mind*. London: Routledge.
- Goff, P. (2009). Why Panpsychism Doesn't Help Us Explain Consciousness. *Dialectica*, 63(3), 289–311. DOI: 10.1111/j.1746-8361.2009.01196.x
- Goff, P., Seager, W., & Allen-Hermanson, S. (2022). Panpsychism. In E.N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy*. Available at: <https://plato.stanford.edu/entries/panpsychism/>
- Hoffman, D. (2019). *The Case Against Reality: Why Evolution Hid the Truth from Our Eyes*. W.W. Norton.

- Hoffman, D. & Prakash, C. (2014). Objects of Consciousness. *Frontiers in Psychology*, 5, 577. DOI: 10.3389/fpsyg.2014.00577
- Hoffman, D., Prakash, C. & Prentner, R. (2023). Fusions of Consciousness. *Entropy*, 25(1), 129. DOI: 10.3390/e25010129
- Husserl, E. (1991). *On the Phenomenology of the Consciousness of Internal Time (1893–1917)*. Trans. J.B. Brough. Dordrecht: Kluwer.
- Jackson, F. (1982). Epiphenomenal Qualia. *Philosophical Quarterly*, 32(127), 127–136. DOI: 10.2307/2960077
- James, W. (1890). *The Principles of Psychology*. New York: Henry Holt.
- James, W. (1904). Does ‘Consciousness’ Exist? *Journal of Philosophy, Psychology and Scientific Methods*, 1(18), 477–491. DOI: 10.2307/2011942
- Kastrup, B. (2018). The Universe in Consciousness. *Journal of Consciousness Studies*, 25(5–6), 125–155.
- Kastrup, B. (2024, January 1). Analytic Idealism, UAPs, the Daimon, and a Model of Dissociation: Challenges for 2024 [Blog post]. Available at: <https://www.bernardokastrup.com/2024/01/analytic-idealism-uaps-daimon-and-model.html>
- Kim, J. (2005). *Physicalism, or Something Near Enough*. Princeton University Press.
- Lewis, D. (1986). *Philosophical Papers, Volume II*. Oxford University Press.
- Lewis, D. (1994). Reduction of Mind. In S. Guttenplan (Ed.), *A Companion to the Philosophy of Mind* (pp. 412–431). Blackwell.
- Lowe, E.J. (2006). *The Four-Category Ontology: A Metaphysical Foundation for Natural Science*. Oxford: Clarendon Press.
- Mach, E. (1886). *Die Analyse der Empfindungen und das Verhältnis des Physischen zum Psychischen* [The Analysis of Sensations]. Various editions; English trans. C.M. Williams (1897).
- Mediano, P.A.M., Rosas, F.E., Bor, D., Seth, A.K., & Barrett, A.B. (2022). The strength of weak integrated information theory. *Trends in Cognitive Sciences*, 26(8), 646–655.
- Metz, T. (2013). *Meaning in Life: An Analytic Study*. Oxford University Press.
- Meyenn, K. von (Ed.). (1999). *Wolfgang Pauli. Wissenschaftlicher Briefwechsel, Band IV, Teil II: 1953–1954*. Berlin: Springer.
- Nagasawa, Y., & Wager, K. (2016). Panpsychism and Priority Cosmopsychism. In G. Brüntrup & L. Jaskolla (Eds.), *Panpsychism: Contemporary Perspectives* (pp. 113–129). Oxford: Oxford University Press.
- Nagel, T. (1971). The Absurd. *The Journal of Philosophy*, 68(20), 716–727. DOI: 10.2307/2024942
- Nagel, T. (1974). What Is It Like to Be a Bat? *The Philosophical Review*, 83(4), 435–450.
- Prior, A.N. (1967). *Past, Present and Future*. Oxford: Clarendon Press.
- Rosenthal, D. (2005). *Consciousness and Mind*. Oxford: Clarendon Press.
- Russell, B. (1921). *The Analysis of Mind*. London: George Allen & Unwin.
- Stapp, H. (2011). *Mindful Universe: Quantum Mechanics and the Participating Observer* (2nd ed.). Springer. DOI: 10.1007/978-3-642-18076-7

- Strawson, G. (2006). Realistic Monism: Why Physicalism Entails Panpsychism. *Journal of Consciousness Studies*, 13(10–11), 3–31.
- Stubenberg, L. (2018). Neutral Monism. In E.N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2018 Edition). Available at: <https://plato.stanford.edu/archives/fall2018/entries/neutral-monism/>
- Swinburne, R. (1997). *The Evolution of the Soul* (rev. ed.). Oxford: Clarendon Press.
- Tononi, G., Boly, M., Massimini, M., & Koch, C. (2016). Integrated information theory: from consciousness to its physical substrate. *Nature Reviews Neuroscience*, 17(7), 450–461.
- Tooley, M. (1997). *Time, Tense, and Causation*. Oxford: Clarendon Press.
- Velmans, M. (2012). Reflexive Monism: Psychophysical Relations among Mind, Matter and Consciousness. *Journal of Consciousness Studies*, 19(9–10), 143–165.
- Whitehead, A.N. (1929). *Process and Reality*. New York: Macmillan.
- Wolf, S. (2010). *Meaning in Life and Why It Matters*. Princeton University Press.

The Nine Inevitabilities

You can find the full manuscript available for free download at:



<https://archive.org/details/the-nine-inevitabilities>