CHAPTER 6

Cognition and Zero Complexity

Presupposes: the structural dependence of content on contrast (Ch. 2); the exhaustiveness of the diversity/equality partition and the two-names result (Ch. 3); equality as the foreclosing terminus (Ch. 4).

Establishes: the zero-complexity constraint; a structural lower bound on panpsychism; the unintelligence of the foreclosing terminus.

In brief. A person born deaf does not hear silence; she has no auditory field at all. A person born blind does not see darkness; she has no visual field in which darkness could appear. In every modality, removing all contrast does not leave a faint, minimal experience — it leaves the absence of experience. This chapter generalises that observation into the *zero-complexity constraint*: no property that requires even one distinction — content, feeling, knowledge, intention, awareness — can characterise a state that has none. The constraint does not refute panpsychism; it gives it a floor: consciousness may go all the way down, but "all the way down" stops where distinctions stop. Tested against meditative "pure consciousness," Russellian self-standing qualities, and the mathematics of integrated information theory, the constraint holds — and it sets up the book's theological turn: if the ground of all things has zero complexity, it cannot think.

---

1 Introduction

Can the ground of all things think? If the grounding and temporal hierarchies both terminate in a state of zero complexity, as the previous two chapters have argued, then the fundamental level of reality is a state without any internal distinction. This chapter asks what follows for the properties such a state can bear, where the answer has consequences that reach from philosophy of mind to theology.

The question bears directly on one of the most active debates in contemporary philosophy of mind. Panpsychism, the view that consciousness is a fundamental and ubiquitous feature of the natural world, has experienced a striking resurgence. Strawson (2006) argues that the physical is experiential throughout; Chalmers (2015a) treats panpsychism as a serious option for solving the hard problem; Goff (2017) defends cosmopsychism and Goff (2019) the wider case for consciousness as fundamental; and Tononi's (2008; Tononi et al., 2016)

integrated information theory defines consciousness by the quantity of integrated information (Φ) a system possesses.

This chapter does not argue against panpsychism as such. It identifies a structural constraint that any version must respect, the zero-complexity constraint derived in §2: if content requires contrast (Chapter 2) and a state of zero complexity has no contrast (Chapter 4), then a state of zero complexity has no content, and if cognition requires content, it cannot cognise.

The constraint does not refute panpsychism, and the point bears stating plainly, because the chapter's argument is sometimes stronger than the conclusion it supports. Once "zero complexity" is defined as the absence of every distinction, the constraint is close to analytic, and §5 records that no theory of consciousness can disagree with it or confirm it. What is not analytic, and what the chapter is built to earn, is the phenomenal-idleness argument (§2.2), which derives the bridge from the intrinsicalist's own vocabulary, and the equalisation evidence (§§2.2, 3), which fixes which horn of that argument's dilemma obtains. It identifies a lower bound: if consciousness goes all the way down, "all the way down" stops at the point where internal distinctions cease. The constraint is therefore compatible with consciousness being fundamental and ubiquitous within the domain of diversity, while being incompatible with consciousness characterising a state that has none. The chapter develops the argument (§2), then engages panpsychism (§3), the pure consciousness event (§4), and integrated information theory (§5).

2 The Argument

2.1 From content to distinction

The first premise is Chapter 2's structural dependence thesis: any determinate content is a diff, one of at least two, individuated by its contrast with at least one alternative. This is a constitutive feature of content as such, secured by the determination dilemma (Chapter 2, §2.4) and corroborated across inferentialist, structuralist, and

representationalist theories of content (Chapter 2, §2.2). A content that contrasted with nothing would carry no information, represent nothing, and be phenomenally indistinguishable from any alternative, so it would not be a content. Zero complexity, the state the constraint is about, is the bottom of the containment order of Chapter 4 (Appendix): contained in every state, because it carries no distinction.

2.2 From consciousness to determination

The bridge premise is that consciousness requires determination: being one way rather than another. This is a weaker claim than the claim that consciousness requires representational content. The hard problem (Chalmers, 1995) is driven by the worry that phenomenal experience outstrips representational and functional properties; the zero-complexity constraint takes no position on that question. It operates below the hard problem, at the level of determination: whatever consciousness is — representational, functional, phenomenal, or something else entirely — it is a way of being rather than no way at all.

The premise holds across the concepts of consciousness in the field. To know something is to be in a state that represents how things are, one way rather than another. To intend is to be directed toward a goal, which requires the distinction between the intended and the current state. Block's (1995) access consciousness requires that the accessed content be determinate, so that the system accesses this information rather than that, while his phenomenal consciousness requires that the experience have qualitative character, the "what it is like": that it be this way rather than another.

A state of zero complexity satisfies neither condition, so the constraint holds regardless of which concept of consciousness is operative. Even the weakest cognitive notions comply, since mere sentience requires that the feeling be some way rather than no way, and proto-consciousness, if the term means anything, involves at least a minimal experiential quality — something it is like, however dim — which is a determination, and therefore a diff. The constraint does not reduce consciousness to content; it identifies a structural condition

consciousness requires however the relationship between phenomenal character and representational content is ultimately understood.

The resolute intrinsicalist. One opponent rejects the bridge premise at its root, and the case against her must be independent, because the chapter's other supports presuppose what she denies. The resolute intrinsicalist holds that a quale — the redness of red, the hurt of pain — is not "this rather than that" but simply this: intrinsic, self-standing, complete in itself, owing nothing to contrast, with the "rather than" the theorist's addition rather than the quale's constitution. Quiddities and certain trope theories model the position (Chapter 2, §2.4).

Against her, the equalisation evidence and the dilemma cannot simply be recited, since each construes qualities contrastively, which is the point at issue. The independent argument runs through her own vocabulary instead. Whatever else she denies, she cannot deny that a quale is phenomenal: that there is something it is like to have it, for the subject. That commitment is her word rather than the framework's, and the "for" is the subjective character Kriegel (2009) takes to be constitutive of the phenomenal.

Now unpack the "for". For a quality to figure in what it is like for a subject, the quality's presence must make some difference to the subject's experiential condition — at the barest minimum, the difference between its being present and its being absent. A quality whose presence and absence are, for its bearer, indiscernible in principle therefore carries zero information for that subject, in the strict sense the mathematical theory of communication gives the term (Shannon, 1948; Chapter 2, §2.4, deploys the same measure against quiddities): no possibility excluded, no state discriminated from any other.

The question for the intrinsicalist is then single: does the contrast-free quale's presence differ, for the subject, from its absence?

If yes, there is the contrast — one difference, one exclusion, one diff — and the quale is contrastive at the minimal grade the bridge premise claims, which never needed rich quality-space structure, since one bit suffices. If no, the quale is phenomenally idle, since its presence

contributes nothing to what it is like to be the subject, because what-it-is-likeness with it and without it are identical. And phenomenally idle phenomenal character is a contradiction in the intrinsicalist's own terms: a what-it-is-likeness that makes no difference to what it is like. She has described nothing wearing a quale's name.

The contrast the first horn delivers is a contrast in the subject's state, with the quale and without, so it needs a subject that persists across the two states, which is a system with at least two states and so diverse. At the terminus there is no such subject. A state of zero complexity is the whole of what is there, and its presence against its absence is obtaining-determination, no internal distinction (Chapter 4, §2.2). The first horn is therefore closed at the terminus, where only the second remains; what the second leaves standing, a quality with no one for it to be like anything to, is the panqualityism §3.3 records as the one variant the argument cannot reach.

The argument nowhere assumes that qualities are constituted by contrast, since it assumes only her word — phenomenal, for the subject — and a functional truism about "for". The contrast is therefore derived from phenomenality rather than presupposed in the analysis of quality, and the bridge premise is henceforth a derived result. Call the derivation the phenomenal-idleness argument.

The equalisation principle. The necessity of determination for consciousness can be grounded in a phenomenological analysis of what happens when distinctions are progressively removed. Hereafter this is the equalisation principle (EP); it is referenced by that label in subsequent chapters. Consider each sensory and experiential modality in turn.

When auditory distinctions are completely eliminated — when the difference between one sound and another, and between sound and silence, is entirely dissolved — what remains is not a very quiet sound but the absence of auditory experience: deafness. A person born deaf does not hear silence, since she has no auditory field at all. Similarly, when visual distinctions are completely eliminated, what remains is not a very dim image but the absence of visual experience: blindness. A

person born blind does not see darkness, since she has no visual field at all. And when emotional distinctions are completely eliminated, what remains is not a very faint feeling but the absence of emotional experience: numbness. Numbness is not minimal feeling; it is the structural boundary of feeling.

A terminological note. The parallel between modalities reveals a gap in ordinary language. There is a noun for the absence of sound, silence, which names the state itself rather than the observer's limitation. There is no equivalent noun for the absence of light.

"Darkness" will not serve, since darkness is a visual experience, the detection of minimal light against the visual field, and a person born blind does not experience darkness, having no visual field in which darkness could appear. "Invisibility" will not serve either, since it describes something that cannot be seen, a property of the object rather than a name for the state of no light.

This chapter therefore adopts the term visual silence for the absence of light, the visual analogue of silence. Just as silence is neither loud nor soft, visual silence is neither bright nor dark, and the blind field is the experiential region in which visual silence obtains. The terminological parallel is then complete: silence is to hearing as visual silence is to sight as numbness is to feeling, each naming the structural zero of the relevant modality, the point at which the modality ceases to have content at all.

One care keeps the auditory side of the parallel right. Heard silence — the hearing person's detection of soundlessness against a functioning auditory field — is a minimal auditory experience, just as darkness is a minimal visual one. Silence in the present sense names the state, which the congenitally deaf person does not hear because no auditory field exists in which it could appear.

The pattern is uniform across modalities: the complete removal of distinctions within a modality does not produce a minimal instance of that modality's content but the structural boundary of it. Silence is not a very quiet sound. Visual silence is not a very dim image. Numbness is not a very faint feeling.

This is the phenomenological confirmation that determination is a constitutive feature of conscious experience rather than merely a typical one, since without it there is no experience to speak of. Not a diminished experience. None. Unconsciousness, in its most complete form, is the composite of all these absences, and a state of zero complexity is the generalisation of the composite: the condition at which every modality simultaneously reaches its structural boundary. The zero-complexity constraint is therefore the articulation of what the phenomenology of sensory loss, emotional numbing, and unconsciousness itself already shows, rather than an abstract metaphysical imposition on consciousness.

A note on scope. The present chapter establishes a negative result: what consciousness cannot characterise. The positive question — what structural conditions are sufficient for consciousness, and how levels of mental complexity are constituted by categories of detected distinction — is developed formally in Chapter 13; the theological consequences are the subject of Chapters 9–12.

A caution about the corroboration's scope forestalls an objection. Each equalisation case is a subsystem case, since one modality is silenced while the rest of the system continues to operate: the deaf subject still sees, the blind subject still thinks. The extrapolation from silenced subsystems to a whole state of zero complexity is therefore an induction, and inductions from parts to wholes can fail.

The reply is that the constraint does not rest on the induction. It rests on the dilemma as defended by the phenomenal-idleness argument (§2.2), which applies to whole states directly, since a state of zero complexity has no character, and what has no character bears no property whose obtaining is a way of being.

The phenomenology's role is therefore narrower and secure at its own scale. It confirms, within each modality where the removal of contrast can actually be observed, that the dilemma's second horn is what obtains: the residue is not a minimal quality but none. Nor do the congenital cases overreach, since that a person blind from birth has no visual field is cited not as a subject approaching zero complexity but as

the display of a modality's structural zero — the datum that the boundary of a contrast space is the absence of its contents, as the dilemma requires.

2.3 The zero-complexity constraint

The premises yield the constraint:

(P1) Content requires contrast: any determinate content is a diff, individuated by at least one distinction. [Established in Chapter 2.]

(P2) Consciousness requires determination: any cognitive, representational, or experiential state is one way rather than another. [Derived in §2.2 by the phenomenal-idleness argument, confirmed by the phenomenological analysis of equalisation.]

(P3) A state of zero complexity has no internal distinction. [Established in Chapter 4.]

(C) A state of zero complexity has no determination. No content. No cognition, no representation, no experience.

A terminological clarification is warranted. "Zero complexity" as used here means: no internal distinction of any kind. It is defined by the diversity/equality partition, not by any specific complexity metric — informational, mereological, modal, or functional. The exclusion is structural rather than a matter of degree: a state with a single distinction, however minimal, is a state of diversity and falls outside the constraint.

The constraint can be generalised beyond cognition. Any property whose obtaining constitutively requires at least one distinction — knowledge, intention, awareness, self-awareness, agency, design, representation, communication — is excluded from zero complexity, because zero complexity has no distinction at all. It is the absence of diversity, not an impoverished version of it.

3 Panpsychism and the Structural Lower Bound

Panpsychism holds that consciousness is fundamental and ubiquitous. If this is correct, and if the grounding hierarchy terminates

at equality, then the panpsychist faces a question: does consciousness characterise that terminus? The zero-complexity constraint says no. This section tests the constraint against the three principal forms.

3.1 Micropsychism

Micropsychism holds that the fundamental micro-level entities — particles, fields, or whatever physics identifies as basic — instantiate micro-phenomenal properties (Strawson, 2006; Chalmers, 2015a). The constraint does not conflict with micropsychism as standardly formulated, since micro-level physical entities are states of diversity: they have properties (charge, spin, mass), stand in relations, and are distinguishable from one another. A quark is a diff, and if quarks have micro-experiences, those experiences have phenomenal character, a determination, none of which is excluded.

What the constraint identifies is a structural lower bound: micro-experiences can extend as far down the hierarchy as there are entities with internal distinctions, and not below the point at which distinctions cease. The micropsychist who accepts the bound therefore retains everything essential to her position while conceding that the structural terminus of reality, if it is equality, is not itself conscious.

3.2 Cosmopsychism

Cosmopsychism holds that the cosmos as a whole is the fundamental conscious subject, and that facts about individual minds are grounded in facts about cosmic consciousness (Goff, 2017, 2019; Shani, 2015). If the cosmos is the differentiated universe — the totality of spacetime, matter, energy, and their relations — it is a state of enormous diversity, so the constraint does not exclude consciousness from it. The question sharpens only at the grounding terminus.

The constraint closes one option. A state of zero complexity cannot be a subject, since subjecthood requires at least one determination; a cosmopsychist who identifies her fundamental subject with the equality terminus therefore has no subject there. What the constraint does not do is force her onto that terminus. That step is Chapter 4's. A cosmopsychist who locates her subject at the differentiated cosmos, or

who rejects the equality terminus, is untouched here. Against her the result is conditional: if the fundamental subject is the ground, and the ground is equality, then it is not conscious. The constraint supplies the consequent, while Chapter 4 supplies an antecedent she is free to contest.

Where the constraint does bite, it leaves a cosmopsychist who accepts both premises with a choice that costs her something. She may restrict the fundamental subject to the differentiated cosmos and accept a non-conscious ground. Or she may hold that a state of zero complexity is a subject and explain how something with no determination can be one — an explanation the constraint gives strong reason to think unavailable.

Goff's (2023) later version does not require Chapter 4 to reach this result, because it describes its cosmic subject as differentiated. It attributes to the cosmos the capacity to respond to value, to be "pulled" toward certain states rather than others. Value-responsiveness requires the distinction between the valued and the non-valued state, between the current condition and the condition value pulls toward. A subject so described therefore has internal distinctions on its own account. It cannot be the zero-complexity terminus by Goff's own description of it, whatever Chapter 4 concludes. The cosmopsychist who wants her subject at the terminus must give up value-responsiveness, and with it Goff's position.

Goff (2019) argues more broadly that consciousness is a fundamental feature physics leaves out. The present analysis agrees that physics describes structure and leaves out phenomenal character, while denying that phenomenal character can characterise a state without any structure. Mørch (2019) traces the argument for panpsychism from the experience of causation. Her wider work locates the most promising response to the combination problem in phenomenal powers: intrinsic properties both experiential and causally efficacious. But phenomenal powers are a species of determination: a power is a capacity to produce one effect rather than another. A state with no determination has no powers, phenomenal or otherwise. Mørch's solution, like the Russellian

monist's, therefore presupposes the structural conditions the constraint identifies.

The same holds for the AI case surveyed by Butlin et al. (2023). Whatever the correct theory of consciousness — IIT, global workspace, higher-order, recurrent processing — any system to which it attributes consciousness must have at least one internal distinction. A system in a state of zero computational complexity would therefore satisfy none of them. The constraint does not adjudicate between theories; it identifies a shared presupposition (§5 develops this as the presupposition floor).

The witness-consciousness. One position occupies the excluded cell deliberately and must be met by name. Albahari (2019) grounds the world in an aperspectival witness-consciousness — unconditioned, contentless, and prior to every subject–object structure — built expressly from the mystical reports §4 examines. She offers it as an alternative to cosmopsychisms whose ground is a structured cosmic subject.

The dilemma of §4.1 applies here at the level of metaphysics, upstream of any report. Either the witness-consciousness bears at least one determination — the luminosity that distinguishes it from its own absence, the wakefulness Metzinger's minimal case retains. It is then a minimally diverse state: a coherent ground candidate, within the grid of contrastive contents, whose unconditionedness has been traded for its being some way at all. Or it bears none. The constraint then applies in full: a consciousness with no determination is a consciousness whose presence and absence differ in no respect, which is the vacancy the presence/absence test of §2.2 measures. In plain words: a witness that is some way is a minimally diverse state; a witness that is no way cannot be told apart from no witness at all. The perennial idealist can therefore have her ground or her strict unconditionedness. The constraint states the cost of the choice, permits either option; §4's adjudication of the reports she builds from carries over unchanged.

3.3 Russellian monism

Russellian monism holds that consciousness is the intrinsic nature of physical properties: what physics describes structurally, consciousness fills in qualitatively (Chalmers, 1996, 2015a; Strawson, 2006; Goff, 2017). The question is whether a state of zero complexity has an intrinsic qualitative nature, and the structural dependence thesis suggests not. A quality is a determination, since red is red in virtue of not being blue or green, a pitch is that pitch in virtue of not being higher or lower, and even a bare experiential "feel" is a way of feeling rather than another way. A phenomenal quality that contrasted with nothing would therefore not be a quality but the absence of quality.

The equalisation analysis provides concrete phenomenological support, and here it is the walk-through the point requires rather than a pointer, because the Russellian's claim is that qualities persist when contrast is removed.

As the visual field is equalised, with chromatic distinctions removed one by one, the experience does not approach a self-standing minimal quality, a bare "redness" stripped of all contrast; it approaches the blind field, the absence of visual experience altogether. The same holds for auditory qualities, where equalisation leads to deafness rather than to a self-standing minimal pitch, and for emotional qualities, where it leads to numbness rather than a self-standing minimal feeling. In every modality, therefore, the removal of all contrast eliminates quality rather than isolating it — which is what the structural dependence thesis predicts, and what the Russellian's self-standing-quality claim denies.

The Russellian might respond that the phenomenological evidence concerns human experience rather than the intrinsic nature of physical properties as such, so the fundamental qualities might be self-standing in a way human qualities are not. This response deserves its strongest formulation.

Chalmers (2015a) formulates the position most carefully, setting out constitutive panpsychism's commitment that micro-phenomenal properties combine to constitute macro-phenomenal ones, and pressing the combination problem against it. Goff (2017) addresses the

combination problem directly, arguing that cosmopsychism avoids its worst versions by positing a single fundamental subject. On the strongest reading, the micro-level qualities need not resemble human phenomenal qualities at all, since they are whatever fills the structural roles physics leaves open, and human experience emerges from their combination through principles not yet fully understood.

The cost is nonetheless high; it can be stated concretely. If fundamental qualities are self-standing where experienced qualities are contrastive, the Russellian owes an account of how contrastive phenomenal qualities emerge from non-contrastive fundamental ones. The explanatory gap she set out to close therefore reappears at a different point, and the combination problem, already her most serious difficulty, is compounded: not only must micro-experiences combine into macro-experiences, but non-contrastive qualities must generate contrastive ones. The equalisation analysis shows why this is difficult, since in every modality open to examination, removing contrast eliminates quality rather than isolating a self-standing residue, and the Russellian must explain why fundamental qualities would behave differently from every observable quality.

A subtler Russellian rejoinder borrows the framework's own resources. Chapter 2 (§2.4) individuates content structurally rather than episodically, so a content is constituted by what it excludes in the space of possible contents rather than by contrasts its bearer happens to instantiate. Why, then, may the fundamental quality not be individuated by merely possible alternatives — red as against the blue that nowhere obtains — so that a state of zero complexity could bear it after all?

Because the structural reading relocates the contrast without relocating the requirement on the bearer. A quality individuated by possible alternatives is still a way its bearer is, since the state must occupy a position in the quality space for the space's exclusions to individuate anything, and occupying a position is property-determination, a partition within being, F as against non-F (Chapter 4, §2.2). The one-content mind of Chapter 2 is therefore no counterexample but the contrast case: its single state is determinately one way, where the possible alternatives individuate that way, whereas

equality has no way to individuate, its only determinateness being the side-less determinateness of obtaining.

The ganzfeld. The homogeneous case makes the same point concrete. A ganzfeld, an entire visual field uniformly red, is sometimes offered as experience without contrast, though it sits on the dilemma's first horn: the experience is chromatically one way rather than another, has an onset and a cessation, and stands against the subject's concurrent non-visual field. Strip those determinations too, and what remains is not a purer red but the blind field.

The prediction that last clause makes is not idle, and the ganzfeld literature has run it. Under sustained homogeneous stimulation the field does not settle into a purer red. What happens instead falls into two families, and neither is what the intrinsicalist needs.

The first family is decay. Since the 1930s observers have reported the field's colour and brightness draining away, in forms the literature has only lately learned to separate cleanly, since fade-out, black-out and blank-out are now distinguished as three phenomena (Wackermann, Pütz, & Allefeld, 2008), while the older reports, including the earliest work on cessation under uniform stimulation (Cohen & Cadwallader, 1958), run them together. The chapter takes no position on the taxonomy, since what every version of it reports is a field losing its quality rather than concentrating it.

The second family is hallucination. Prolonged exposure generates percepts — forms, patterns, at length structured imagery — for which no stimulus is present. Taken flat, the second looks like a refutation: contrast removed, experience continuing.

It is not, and the thesis says why. A visual modality supplied with no differences does not thereby enjoy a contentless experience; it manufactures differences, which is what a system that can operate only on contrast must do when contrast is withheld. The hallucination is therefore the modality failing to find a diff and generating one. What the intrinsicalist needs is a field stripped of contrast in which a quality remains, self-standing and undifferentiated, while what the ganzfeld

delivers is a field that either goes out or fills itself back in. Neither is her case.

The summary is accordingly narrower than "equalisation confirmed": nothing in the one arena where the removal of contrast has been performed rather than imagined displays the thing the constraint forbids. What supports the constraint remains the phenomenal-idleness argument (§2.2), which the resolute intrinsicalist must meet on its own ground, while the ganzfeld adds only that the arena contains no counterexample. The modal move, like the phenomenological one, therefore ends where the constraint says it must: a quality is a way of being, and zero complexity is the absence of ways.

The chapter does not claim to have refuted Russellian monism; it is a serious and well-motivated position, and one clarification about the target belongs here: no Russellian places quiddities at zero complexity, so the constraint is not a refutation of any Russellian view actually held but a limit every such view must observe when it says where its fundamental qualities live.

The position that sits directly on the phenomenal-idleness premise's one assumption is Coleman's (2014) panqualityism — qualities without subjects — since it grants that qualities are contrastive while denying that anything undergoes them: the phenomenal-idleness argument asks what a quality is like for its bearer, and here there is no bearer to ask about, while the equalisation evidence does not reach it either, because a quality no one undergoes leaves no field to equalise. It is the Russellian variant the chapter cannot assess, recorded as such. The chapter claims that the structural dependence thesis, confirmed by the equalisation analysis, provides strong reason to think qualities are constitutively contrastive — and that a state of zero complexity, lacking all contrast, lacks all quality. The Russellian who wishes to resist the constraint must provide an account of self-standing quality that survives the removal of all contrast, and must explain why the phenomenological evidence uniformly shows quality disappearing rather than persisting when contrast is removed. Whether such an account is available is where the debate is most productively joined.

4 Pure Consciousness and the Boundary of Experience

Forman (1990, 1999) argues that the pure consciousness event (PCE), reported by meditators across traditions, is a true instance of consciousness without content. If authentic, it may seem to refute the constraint, since it would be awareness without any object, representation, or intentional content. Does it count as consciousness at zero complexity?

4.1 The dilemma

The PCE, as described by Forman, is a state in which the meditator is "awake and conscious, but without an object or content for consciousness". The question is whether this state truly lacks all internal distinction, and a dilemma arises, both horns of which, on the analysis below, favour the constraint.

If the PCE retains at least one distinction — even the minimal distinction between the experiencing subject and the absence of content, or between the state of awareness and its cessation, or between the PCE and the ordinary waking state that precedes and follows it — then it falls within diversity: a state of extreme simplicity, with very little internal structure but not none. The constraint is therefore satisfied, and the PCE is a limiting case rather than a counterexample, consciousness approaching its structural boundary without crossing it.

If the PCE truly lacks all internal distinction, then it is a state of zero complexity, and the constraint applies: a state with no determination has no way of being, and a state with no way of being is not a state of awareness. To be aware is to be in a state with character, where character is a determination. On this horn, therefore, the PCE is not consciousness at zero complexity but the point at which consciousness ceases. The equalisation analysis sharpens it, since if the PCE is the composite of all modal absences, the simultaneous equalisation of every modality, then it is the structural boundary of experience rather than an instance of it. The meditator who reports "contentless awareness" is therefore reporting either from the near side

of the boundary or from the far side — and how to adjudicate between these without assuming what reports can show is the next question.

One adjudication must be renounced before the right one is given, because the framework's own commitments forbid it. It would be quick to say that on the far-side reading the report is a retrospective reconstruction of what obtained when no experience was occurring. But that verdict assumes that a state with no reportable structure was a state with no experience, and the assumption is verificationism about consciousness: nothing is real in experience unless it can show up in a report. Section 6.1 concedes to the hard problem that phenomenal experience is not exhausted by informational or structural properties, and the concession binds here too. The framework therefore neither needs nor asserts that nothing was occurring, since that claim would outrun what reports can show.

The adjudication that works. It runs through the reports' own shape, and it asks the advocate to keep only what she cannot give up. The PCE is reported as an episode. Meditators do not say "at some point, contentlessness"; they report that the event happened in that sitting, that it began after concentration deepened, that it ended and ordinary awareness resumed, often with a rough duration. The evidence, in every case, is a memory of a bounded episode with a location in the subject's biography.

Bounded episodes are structured. Whatever the meditator accurately remembers must have had, at minimum, the temporal boundary-structure that makes episodic memory possible: an onset, contrasting the state with what preceded it; a cessation, contrasting it with what followed; a position among the subject's other states. Those contrasts are diffs. A state wholly without any distinction, these included, would therefore leave memory nothing to individuate — no when, no this episode rather than that, no way the memory attaches to Tuesday's sitting rather than to nothing at all. The contrasts are relations the state stands in, an onset against what preceded it and a cessation against what followed; a critic may say they are borrowed from diverse neighbours and leave the episode's interior untouched. They do not need to touch it. A state that stands in temporal relations occupies a position among

distinguishable states; a position in time is a distinction (Chapter 5, §2.1), so an episode is diverse by its location whatever its interior holds.

The advocate then faces a fork with no verificationism in it. Either the memory tracks the state, in which case the state had at least the boundary-structure the memory preserves and the first horn receives it: minimally diverse experience, the constraint's floor made visible from inside, a limiting case of great interest. Or the memory does not track the state, in which case the report is withdrawn as evidence by the advocate's own admission rather than disqualified by any assumption about what unreportable states may contain. The meditator therefore keeps her right to ineffable depths, while what she cannot keep is episodic evidence for a structureless episode, because episodicity is structure. The dilemma accordingly contracts to a single lemma, cited hereafter as such: any rememberable state is minimally diverse.

4.2 The report problem

The second horn is reinforced by a consideration about reportability. The PCE is known to us through reports made from within diversity, from a state in which the subject has content, language, memory, and the distinction between the experience being reported and the act of reporting. The report itself is a diff. Whether it accurately describes what obtained during the PCE, or retroactively imposes structure on a state that at the time had none, is a question §4.1's fork settles without needing an answer. If the report tracks, the state was structured; if it does not, it has been withdrawn as evidence.

The empirical literature is divided, and the fork absorbs the division. E. Thompson (2014) presses the harder case, urging that the Advaitin claim of a pure witnessing consciousness present in dreamless sleep with no object witnessed be taken seriously against the neuroscientific presumption of blackout, and offering testable predictions drawn from trained sleep yogis. A state so described falls to the fork's second horn. A witnessing with nothing witnessed either registers the difference between its own presence and its absence, and so carries the minimal structure at issue, or it registers nothing, and no report survives as evidence.

Komarovski (2015) argues that Forman's PCE has limited applicability in Tibetan Buddhist traditions, whose accounts of the realisation of ultimate reality diverge sharply from one another, each remaining shaped throughout by the contemplative processes that lead to it. And Metzinger (2020) finds wakefulness the most frequently reported character of such states, alongside an absence of spatiotemporal self-location, with wakefulness alone supplying the minimal structure the lemma of §4.1 predicts. What the reports establish, where they establish anything, is therefore that the PCE, insofar as it is really experienced, is a state of extreme simplicity rather than zero complexity. If it does cross the boundary, it is the end of consciousness, so the constraint is confirmed rather than refuted.

5 The Presupposition Floor: Integrated Information Theory

Tononi's (2008; Tononi et al., 2016) integrated information theory (IIT) provides the occasion for a consistency check and, more usefully, for a methodological result the check makes visible: the presupposition floor, developed below.

IIT defines consciousness in terms of integrated information, Φ: a system is conscious if and only if it has $\Phi > 0$, where Φ measures the degree to which a system's current state constrains its possible past and future states beyond what is accounted for by its parts independently. For $\Phi > 0$, a system must therefore have a repertoire of possible states, at least two distinguishable states, and its current state must make a difference to its possible past and future not reducible to its parts separately, at least one distinction between what is and what might have been. Both conditions require internal differentiation.

The presupposition floor. A state of zero complexity satisfies neither condition, so on IIT's own formal framework it has $\Phi = 0$ and is not conscious. The verdict should be classified before it is celebrated, because it is definitional. Every ingredient of the Φ-calculation — repertoires, partitions, cause–effect structure — presupposes internal differentiation, so IIT could not have returned any other answer. Hand

the machinery a structureless state and it has been given nothing to compute over rather than a system that scores zero. IIT therefore does not evaluate the constraint; it instantiates it.

And the point generalises, since any theory whose quantities are defined over state-spaces stands on the same floor. The global workspace requires contents to enter it, higher-order theories require states to be represented, and Seth's (2021) predictive processing requires a generative model registering prediction errors — every one a form of determination that zero complexity lacks. What their unanimity displays is therefore grammar rather than convergence, where the grammar is the finding. Call it the presupposition floor: the zero-complexity constraint marks the level that every quantitative theory of consciousness presupposes, which is why none can disagree with it and none can confirm it. The constraint's claim to operate below the hard problem (§2.2) is this thesis stated in advance.

Above the floor, the theories really part, and the divergence shows that floor-agreement is not theory-identity. IIT assigns $\Phi = 0$ to some richly differentiated systems, since purely feed-forward architectures integrate nothing however much they distinguish (Tononi et al., 2016), so IIT holds that differentiation is necessary and far from sufficient, while the constraint asserts necessity alone and is deliberately silent about sufficiency.

For the same reason the constraint takes no side in IIT's live controversies — Aaronson's (2014) overattribution objection, Bayne's (2018) axiomatic critique, and Merker, Williford, and Rudrauf's (2022) category-error argument — because each concerns what suffices for consciousness, all of it above the floor. The consistency noted here therefore survives whatever those disputes decide, since it depends only on a formal feature every party leaves intact: the requirement of internal differentiation. The extended engagement with the critiques is developed in Chapter 13.

The floor also yields the constraint's refutation condition; it should be stated as such: the zero-complexity constraint is refuted by a credible attribution of consciousness to a system with zero internal state-

distinctions — no repertoire, no differentiated parts, no distinguishable conditions of any kind.

No theory on the field proposes such an attribution, and the presupposition-floor thesis explains why none could without changing the subject, since a theory that attributed consciousness to the distinction-free case would have abandoned state-spaces, and with them the apparatus of quantitative theorising about mind. A refutation condition that nothing satisfies is still a refutation condition, so naming it fixes what the constraint forbids, and the General Conclusion (§2) locates it within the framework's general account of what could and could not refute it.

Where the argument stands: the zero-complexity constraint has been derived from content and from consciousness (§2), set as a lower bound beneath the panpsychisms (§3), applied to the pure consciousness event (§4), and shown to be the presupposition floor of the quantitative theories, with its refutation condition stated (§5). What follows meets the objections.

6 Objections and Replies

6.1 The hard problem objection

Objection. The chapter assumes that consciousness can be characterised in terms of content, information, and distinction. But the hard problem (Chalmers, 1995) shows that phenomenal experience is not exhausted by functional or informational properties. Consciousness might have an aspect irreducible to distinctions: a raw phenomenal "feel" that obtains independently of any structural condition.

Reply. The constraint does not claim that consciousness is exhausted by informational or structural properties. It claims that consciousness requires at least one determination, a way of being rather than another, which is weaker than the claim that consciousness is structural or informational, and is the minimal condition any account must accept. The hard problem concerns what consciousness is over and

above its functional role, whereas the constraint concerns a necessary condition rather than a sufficient one.

Even if phenomenal experience has an irreducible qualitative aspect that transcends functional description, that aspect is still a determination: a way of being rather than another. A raw feel that is no way at all — no character, no phenomenal quality, no way it feels to be in it — is therefore not a feel, as the equalisation analysis of §2.2 confirms phenomenologically.

The strongest version of the objection presses further: what if phenomenal character just is determination, so that the way something feels is constitutively identical with its being one way rather than another? Then the constraint, by targeting determination, targets phenomenal character directly, and the "below the hard problem" framing is misleading.

The reply: if determination and phenomenal character are constitutively identical, the constraint is even stronger than claimed, since a state with no determination would then have no phenomenal character, not as a further consequence but as a constitutive identity. The "below the hard problem" framing is therefore a courtesy to those who think phenomenal character might outstrip determination, and if it does not, the constraint applies with full force to phenomenal character itself. Either way, the constraint holds.

6.2 The emergence objection

Objection. Consciousness might emerge from zero complexity as complex systems exhibit emergent properties not present in their components — arising from a state that has none of the conditions the constraint identifies.

Reply. Emergence requires a base from which the emergent property arises, with features that, in combination, give rise to it. A state of zero complexity has no features, so there is nothing to combine and nothing from which consciousness could emerge. A physical system, however simple, has properties — mass, charge, position — that can combine, while zero complexity has none. The objection therefore

conflates “very simple” with “zero complexity”, and the constraint targets only the latter.

6.3 The conceivability objection

Objection. It is conceivable that a state of zero complexity has consciousness, since we can suppose it without contradiction. Conceivability is a guide to possibility (Chalmers, 2002), so if it is conceivable, it is possible, and the constraint is false.

Reply. The objection is answered on Chalmers’s own distinction, and the imagistic point is a diagnosis rather than the reply. Take the conceivability negatively, as the failure to detect a contradiction on reflection: no image is required, so the constraint must meet the supposition head-on. It does, at §2.2. A zero-complexity state bearing consciousness would be a state bearing phenomenal character whose presence and absence are, for its subject, indiscernible, which is phenomenal idleness, and idle phenomenal character is a contradiction in the intrinsicalist’s own terms. The supposition is therefore not ideally conceivable.

What survives is its prima facie conceivability, which Chalmers (2002) already declines to treat as a guide to possibility (cf. Worley, 2003; Yablo, 1993). The imagistic observation then explains why the prima facie appearance is so stubborn: any attempt to picture the state produces a picture, and a picture has figure, ground, and extension. Asked what the blind field “looks like”, the mind pictures darkness, and the blind field is not darkness but the absence of the visual field altogether (Chapter 8). The appearance of conceivability is therefore the projection of Chapter 8 (§3.4) operating on a modal question, and the account predicts it whether or not the state is possible.

6.4 The scope objection

Objection. The constraint establishes that zero complexity cannot bear consciousness. But zero complexity might never obtain — if diversity is infinite, there is no terminus. The constraint is therefore merely hypothetical, with no application to the actual world.

Reply. The constraint is conditional in two respects, since it applies only if the grounding hierarchy terminates, and only at the foreclosing terminus, equality. A brute diverse terminus is a coherent alternative (Chapter 4) and is not excluded by the constraint, while it is not the absolutely simple ground the positions at issue identify as fundamental.

The theism that identifies God with the simple ground of all being, and the cosmopsychism that locates the fundamental subject at the undifferentiated terminus, are both committed to consciousness at zero complexity, and for them the constraint bites. A theism whose ground is internally complex escapes the constraint while not being the simple God of the prime mover tradition, and whether such a ground can be the necessary creator theism needs is taken up in Chapter 11. The argument thus derives what follows on each branch: on the termination branch the constraint applies to the foreclosing terminus and the theological consequence follows, while on the non-termination branch neither it nor the first-cause arguments have application.

6.5 The intrinsic-determinacy objection

Objection. Chapter 4 (§2.2) grants equality one determinateness, that it obtains, while denying it any internal structure. Structure-free determinateness is thereby admitted into the system, since a state can be determinate without partition. But phenomenal character, the intrinsicalist holds, is just such a determinateness: an intrinsic quality a state simply has, prior to and independent of any contrast with other qualities. If equality can be determinate without structure, why can a zero-complexity state not bear a phenomenal character without structure? The concession in Chapter 4 appears to reopen the door this chapter has tried to close.

Reply. The concession is real, while it cannot reach phenomenal character, because the determinateness it concedes is of the wrong kind. Chapter 4 distinguishes two species: property-determination, a contrastive partition within being, and obtaining-determination, the side-less fact that a state is rather than not. Equality has the second and only the second.

The analogy requires that phenomenal character be an obtaining-determinateness, definite in the way bare existence is definite. But phenomenal character is not existential; it is qualitative. To have a phenomenal character is to be some way, this feel rather than that, and "this rather than that" is a partition, hence property-determination, the species equality lacks. The phenomenal-idleness argument (§2.2) secures the diagnosis independently of any contrastive theory of qualities, since a character whose obtaining made no difference for its subject would be phenomenally idle, where idle character is none.

The equalisation principle supplies the evidence that this is the right diagnosis, since stripping the contrasts from a modality does not arrive at a bare residual feel that obtains without structure but at silence, visual silence, numbness — the absence of the modality. Were phenomenal character an obtaining-determinateness, equalisation would leave a structure-free glow behind, whereas it leaves nothing. The structure-free determinateness Chapter 4 grants equality is therefore the very one that cannot be a feel, so the door stays shut. An intrinsicalist may still hold phenomenal character to be intrinsic and non-contrastive, though that is to deny the equalisation evidence directly rather than to win a foothold from the Chapter 4 concession.

The same distinction disposes of the intrinsicalist's last picture: the homogeneous-quale world, one undifferentiated feel throughout, a universe of uniform glow. A feel is a way the state is, a property-determination, and the presence/absence test of §2.2 confirms it: a glow whose obtaining made no difference for its bearer would be phenomenally idle, hence no feel at all, while a glow that passes the test carries the one diff the diagnosis requires.

A world with exactly one property-determination is therefore not equality but the minimally diverse world — one diff, not zero — so the imagined case is no counterexample to the constraint but an instance of it. And the impression that such a world is structure-free is Chapter 8's projection at work in advance, since to imagine the uniform glow is to imagine it against the absence it excludes, importing the very contrast the description denies.

7 Conclusion

The chapter yields three results.

The zero-complexity constraint. No property whose obtaining constitutively requires at least one distinction can characterise a state with none. This follows from the structural dependence thesis (Chapter 2) and the characterisation of the terminus (Chapter 4). The constraint operates at the level of determination — being one way rather than another — which is a necessary condition for consciousness on any account, including those that treat phenomenal character as irreducible. The equalisation analysis confirms it phenomenologically: in every modality, the complete removal of contrast produces not a minimal experience but the structural boundary of experience.

A lower bound on panpsychism. Consciousness can extend as far down the hierarchy as there are entities with internal distinctions, and not below the point at which distinctions cease. Micropsychism is compatible with the constraint, as is a cosmopsychism or Russellian monism that places its fundamental subject at the differentiated cosmos. What the constraint excludes is a subject at the undifferentiated ground, and it forces that subject on no one, since the step to the terminus is Chapter 4's, which a panpsychist may contest.

Against the Russellian, the equalisation analysis supplies phenomenological pressure rather than refutation, since progressive equalisation uniformly shows quality disappearing when contrast is removed, which tells against qualities being self-standing without settling the matter. The pure consciousness event is either a limiting case within diversity or the boundary of consciousness, rather than a counterexample. The constraint's neutrality above the floor and its decisiveness at the floor are therefore one feature seen twice: it takes no side among theories of what suffices for consciousness because it fixes what every such theory presupposes (§5).

The unintelligent terminus (conditional on termination). If the grounding hierarchy terminates at its foreclosing terminus, equality, the fundamental level of reality is unintelligent: no knowledge, no will, no intention, no awareness, no design. This is what makes the theological

applications of the subsequent chapters possible, rendering the conjunction of absolute simplicity with divine intelligence structurally untenable — a conclusion that bears on the prime mover tradition, the kalām argument, the doctrine of divine simplicity, and negative theology.

The foundational sequence of the book is now complete. Chapters 1–6 have established the diff, the structural dependence thesis, the exhaustiveness of the diversity/equality partition, the grounding and temporal termini, and the zero-complexity constraint. What follows from this constraint? Two lines of consequence. The first is epistemological: if every cognitive act is a diff, what are the structural limits of thought, and what lies at those limits? The second is theological: if the ground of all things is unintelligent, what happens to the prime mover, the kalām argument, divine simplicity, and negative theology? Chapters 7–8 develop the first line; Chapters 9–12 develop the second.

Grades and Dependencies

1. **Grades.** All three results are graded *established*. The zero-complexity constraint and the panpsychism lower bound hold unconditionally as conditionals on their antecedents; the unintelligence of the terminus is conditional on the termination branch (Chapter 4) and on the identification of the terminus with equality. The bridge premise (P2) is a derived result via the phenomenal-idleness argument, with the equalisation principle as corroboration at subsystem scale only (§2.2's scope caution). The Premise Register records the full chain.

2. **Where the constraint is used.** The zero-complexity constraint is the working blade of the book's second half: Chapters 9–12 apply it to creation, divine simplicity, the kalām, and negative theology; Chapter 13 develops the positive counterpart (levels of mental complexity by categories of detected distinction); Chapter 8 (§3.4) supplies the projection diagnosis this chapter borrows at §6.3. The phenomenal-idleness argument and the equalisation principle (both §2.2) and the lemma *any rememberable state is minimally diverse* (§4.1) are cited by label in those chapters.

3. Status of the refutation condition. The General Conclusion (§2) classifies this refutation condition as an *empty specification*: the presupposition floor establishes that no quantitative theory of consciousness could satisfy it without abandoning state-spaces, so the condition is not part of the framework's ordinary falsifiability belt. The belt's real exposures are listed there; for consciousness, the live prediction is Chapter 13's phosphene test (§A.7).

References

Aaronson, S. (2014). *Why I am not an integrated information theorist (or, the unconscious expander)*. Shtetl-Optimized, 21 May 2014. https://scottaaronson.blog/?p=1799

Albahari, M. (2019). Perennial idealism: A mystical solution to the mind–body problem. *Philosophers' Imprint*, 19(44), 1–37.

Bayne, T. (2018). On the axiomatic foundations of the integrated information theory of consciousness. *Neuroscience of Consciousness*, 2018(1), niy007.

Block, N. (1995). On a confusion about a function of consciousness. *Behavioral and Brain Sciences*, 18(2), 227–247.

Butlin, P., Long, R., Elmoznino, E., Bengio, Y., Birch, J., Constant, A., Deane, G., Fleming, S. M., Frith, C., Ji, X., Kanai, R., Klein, C., Lindsay, G., Michel, M., Mudrik, L., Peters, M. A. K., Schwitzgebel, E., Simon, J., & VanRullen, R. (2023). *Consciousness in artificial intelligence: Insights from the science of consciousness*. arXiv preprint arXiv:2308.08708.

Chalmers, D. J. (1995). Facing up to the problem of consciousness. *Journal of Consciousness Studies*, 2(3), 200–219.

Chalmers, D. J. (1996). *The conscious mind: In search of a fundamental theory*. Oxford University Press.

Chalmers, D. J. (2002). Does conceivability entail possibility? In T. S. Gendler & J. Hawthorne (Eds.), *Conceivability and possibility* (pp. 145–200). Oxford University Press.

Chalmers, D. J. (2015a). Panpsychism and panprotopsychism. In T. Alter & Y. Nagasawa (Eds.), *Consciousness in the physical world* (pp. 246–276). Oxford University Press.

Cohen, W., & Cadwallader, T. C. (1958). Cessation of visual experience under prolonged uniform visual stimulation. *American Psychologist*, 13, 410.

Coleman, S. (2014). The real combination problem: Panpsychism, micro-subjects, and emergence. *Erkenntnis*, 79(1), 19–44.

Forman, R. K. C. (Ed.). (1990). *The problem of pure consciousness*. Oxford University Press.

Forman, R. K. C. (1999). *Mysticism, mind, consciousness*. SUNY Press.

Goff, P. (2017). *Consciousness and fundamental reality*. Oxford University Press.

Goff, P. (2019). *Galileo's error: Foundations for a new science of consciousness*. Pantheon.

Goff, P. (2023). *Why? The purpose of the universe*. Oxford University Press.

Komarovski, Y. (2015). *Tibetan Buddhism and mystical experience*. Oxford University Press.

Kriegel, U. (2009). *Subjective consciousness: A self-representational theory*. Oxford University Press.

Merker, B., Williford, K., & Rudrauf, D. (2022). The integrated information theory of consciousness: A case of mistaken identity. *Behavioral and Brain Sciences*, 45, e41.

Metzinger, T. (2020). Minimal phenomenal experience: Meditation, tonic alertness, and the phenomenology of 'pure' consciousness. *Philosophy and the Mind Sciences*, 1(1), 1–44.

Mørch, H. H. (2019). The argument for panpsychism from experience of causation. In W. Seager (Ed.), *The Routledge handbook of panpsychism* (pp. 269–284). Routledge.

Seth, A. (2021). *Being you: A new science of consciousness*. Faber & Faber.

Shani, I. (2015). Cosmopsychism: A holistic approach to the metaphysics of experience. *Philosophical Papers*, 44(3), 389–437.

Shannon, C. E. (1948). A mathematical theory of communication. *Bell System Technical Journal*, 27, 379–423, 623–656.

Strawson, G. (2006). Realistic monism: Why physicalism entails panpsychism. *Journal of Consciousness Studies*, 13(10–11), 3–31.

Thompson, E. (2014). *Waking, dreaming, being: Self and consciousness in neuroscience, meditation, and philosophy*. Columbia University Press.

Tononi, G. (2008). Consciousness as integrated information: A provisional manifesto. *Biological Bulletin*, 215(3), 216–242.

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.

Wackermann, J., Pütz, P., & Allefeld, C. (2008). Ganzfeld-induced hallucinatory experience, its phenomenology and cerebral electrophysiology. *Cortex*, 44(10), 1364–1378.

Worley, S. (2003). Conceivability, possibility, and physicalism. *Analysis*, 63(1), 15–23.

Yablo, S. (1993). Is conceivability a guide to possibility? *Philosophy and Phenomenological Research*, 53(1), 1–42.