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ORTHOGONAL REVIEW RECORD

Equivariance of the Source Measure Off the Pure Limit: Contact Sensitivity, Channel Capacity, and the Invariance of Selection Cost

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Scope of Review

The manuscript investigates Article 79's self-separating source off the pure one-reagent limit. It resolves Article 84's Target 14.4 by exhibiting a degree-8 contact-sensitivity polynomial whose quadratic term dominates, and by proving that the measure-preserving relabelling involution $a \mapsto a \circ \iota$ forces the marginal law of the alignment field to remain exactly uniform. Consequently Article 84's selection cost of $\ell - 1$ bits is exact off the pure limit. What cleavage creates is a symmetric Shannon channel whose mutual information is bounded above by $(\ell - 1)\sigma(\pi_h)$, bought at a cost in arm efficiency.

Compiled disposition

Accept with minor revisions. The dual-agent orthogonal review (Referee A: mathematics; Referee B: concordance) reversed the paper's submitted headline: cleavage does not lower the selection cost, which remains exactly $\ell - 1$ bits. Of the major points, sixteen were accepted in full, one accepted in substance with the proposed remedy declined, and one rebutted; three further major points in the second round were accepted. The independent multi-axis report confirms the mathematical structure, concordance, and chemical grounding, and recommends acceptance after three minor technical revisions. The verification script grew from seven blocks to eight. The article is materially improved by the review.

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1 Stage summaries

Dual-agent architecture and the reversed headline

Referee A confined to mathematics; Referee B confined to concordance. Neither saw the other's report. The largest change is a reversal of the submitted headline. The submitted paper claimed that cleavage lowers Article 84's selection cost; Referee A showed that the quantity computed was conditional entropy, not surprisal, and that the marginal law is in fact uniform by the relabelling involution. Referee B established by quotation that Article 84 already said the blindness hypothesis fails off the pure limit. The two referees between them removed both halves of the submitted Ruling. What remains strengthens Article 84: the selection cost is exact, not an upper bound.

Mathematical findings (Referee A)

A-M1: marginal law is uniform (accepted; restructures the paper). A-M2: conditional surprisal can exceed $\ell - 1$ (accepted in substance). A-M3: Δ-free bound figures corrected. A-M4: two lemmas false; proposition reproved. A-M5: arm alphabet restricted to $\{h, e\}$. A-M6: adjacent contacts correlated; transfer matrix used. A-M7: channel ceiling conditional on H_{draw}. A-M8: premise registered. A-M9: checks that cannot fail replaced. Second round: alphabet threshold made sharp; scale-free deviation used; residue order stated.

Concordance findings (Referee B)

B-C1: Ruling misreported Article 84 (accepted; clause struck). B-C2: hypothesis numbers corrected. B-C3: lattice caveat cited to wrong remark. B-C4: no supersession occurs (rebutted on the strength of A-M1). B-C5: H_{frame} refined, not discharged. B-C6: credit given to Article 84. B-C7: $\ell = 54$ is a node count, not a column. B-C8: sighted D unit is Article 77's Dm. B-C9: stocking inference registered as H_{stock}. Second round: convention range, Target 14.4 phrasing, and H_ν premise corrected.

Independent multi-axis confirmation

Mathematical structure rigorous and self-correcting: overlap separation, degree-8 polynomial, group-theoretic uniformity, information-theoretic separation, transfer-matrix treatment. Concordance seamless with Articles 40, 57, 77, 79, 80, and 84. Chemical treatment lucid: Dm is the physical ground of the equivariance; experimental decidability of H_ν proposed. Three minor revisions requested: unamended phrase in Proposition 14.6(ii); clarify the $4+8+16 = 28$ decomposition; align preamble header comments.

2 Full dual-agent review history (verbatim)

The following is the complete text of the dual-agent orthogonal review history with editorial dispositions.

Editorial note on the process

This article was reviewed under the journal's *AI-augmented peer review by orthogonal constraint*. Two referees read the submitted manuscript independently and without sight of each other's reports, each confined to one constraint: Referee A to the mathematics—definitions, proofs, the correspondence between each statement and what its proof establishes, and whether the verification script checks what the appendix says it checks—and Referee B to concordance, that is to whether every claim the manuscript makes about another document is true of that document. Neither referee was told what the other was asked. Both then read the revision and reported again.

The editor adjudicated each point under the journal's standing instruction: a recommendation is not implemented in order to discharge it, and a recommendation whose implementation would alter the paper disproportionately to the validity of the comment is rebutted rather than followed. Of the nine major points raised by Referee A and the nine raised by Referee B in the first round, sixteen are accepted in full, one is accepted in substance with the proposed remedy declined, and one is rebutted. Three further major points were raised in the second round and all three are accepted. Every change they produced is recorded inside the article as well as here—in its precedence ruling, its hypothesis register, its falsification register, and two remarks that record a withdrawn claim rather than absorbing it.

The finding that the review reversed

The largest change between the submitted and the published versions is a reversal of the paper's headline, and the editor records it here plainly because the submitted version was wrong.

The submitted article claimed that cleavage lowers the price Article 84 set on a prescribed alignment field: from $\ell - 1$ bits to $(\ell - 1)[1 - \mathbb{E}(1 - H(\theta))]$, about three per cent lower at Article 79's worst operating point. Referee A showed that the quantity computed is not the quantity Article 84 defines. Article 84's selection cost is a *surprisal*, $-\log_2$ of the marginal mass of the prescribed field; what the submitted paper computed was the *conditional entropy* of the field given the configuration of units. The two agree only at the uniform law, which is why the arithmetic had looked like a special case of itself.

The referee then showed that the marginal law is in fact uniform, and supplied the mechanism. The inversion ι fixes the disubstituted and tetrasubstituted locant sets setwise but not the initiator's, and Article 79's cleavage law is independent and identical across arms; so relabelling a unit's arm word by $a \mapsto a \circ \iota$ is a measure-preserving involution that reverses that unit's presented pattern, and therefore exchanges the two registration numbers at both contacts the unit belongs to. The induced bit-flips generate the whole translation group of the alignment field, so the field's law is uniform at every cleavage level. The editor verified this independently before acting on it: in exact rational

arithmetic the field law is uniform to the last digit when the initiator is absent, and departs by of order f_I^2 when it is present.

The consequence is that the paper's three findings are better than the ones claimed. Cleavage does open an orientation channel, and the knife-edge computation stands untouched. But the channel has no direction, so Article 84's figure of $\ell - 1$ bits is *exact* off the pure limit rather than an upper bound attained at it: its blindness hypothesis is sufficient and not necessary. What cleavage creates is a mutual information between the arm words and the alignment, collectable by an agent that can read arm words and not by the placement system that pays the price—and every number of the submitted version survives, under the name the mathematics supports. A paper that set out to amend its predecessor ends by strengthening it.

Referee B, blind to all of this, reached the same section from the other side: the submitted Ruling asserted that Article 84 "does not say" that its blindness hypothesis fails below the one-reagent limit, and Referee B established by quotation that Article 84 says so three times—in its falsification register, at its Scholium 7.12 and at its Theorem 7.13—and carries the restriction in the statement of the cost theorem itself. The two referees between them removed both halves of the submitted Ruling: Referee A its mathematics and Referee B its history. What remains, and is now titled *For* Article 84 rather than against it, is a magnitude the predecessor asked for and a reason better than the one the predecessor gave.

One further consequence deserves recording. Because the uniformity proof needs only that the contact weight be a function of the two presented patterns, the symmetry survives the one premise the paper's own falsification register concedes could break its channel ceiling. The robust finding and the fragile one thus changed places during the review.

Referee A — mathematical constraint, first round

Recommendation: accept with major revision.

A-M1. *The computed quantity is not Article 84's selection cost; the marginal law of the field is uniform at every π_h, so that figure is unchanged.*

Disposition: Accepted in full, and it restructures the paper. Verified independently in exact arithmetic before acting: the field law is exactly uniform with the initiator absent at $\ell = 3, 4$, $\pi_h = \frac{1}{10}, \frac{1}{2}$ and $e^{\Delta} = 3, 10$, and departs by at most 8.1×10^{-8} with it. The referee's mechanism is now Theorem "The relabelling involution" at status [A] and Theorem "The law of the alignment field is uniform"; Corollary "Article 84's selection cost is exact off the pure limit" draws the consequence; Section "The capacity of the channel" replaces the former cost section and reports the same numbers as a mutual information; and Scholium "Why a channel can be open and change no price" states the conflation the submitted version made. The signed bias of the stream is also emitted, exactly zero absent the initiator.

A-M2. *Article 84's figure can be exceeded, the conditional surprisal of a particular field being field-dependent; the range of Thm. 7.10(b) should be reported wherever its mean is.*

Disposition: Accepted in substance; the proposed headline declined. The

range is now reported, at Remark "The conditional cost is field-dependent, and can exceed $\ell - 1$", and Article 84's Theorem 7.10(b) is credited there as the source of the mean-entropy form rather than left as this paper's own. The editor declined to make "the cost can exceed $\ell - 1$" a headline finding: under the corrected reading that is a third object—the conditional surprisal borne by an arm-word-reading agent—and three readings of the word "cost" in one paper would obscure the finding rather than sharpen it. The referee accepted the decision on second reading and asked instead that the excess be shown to be generic rather than lucky; that is done at A-M2′ below.

A-M3. *Corollary "A bound free of Δ" quotes the wrong figures: the Δ-free bound is $(\ell - 1)(1 - \sigma) = 4.8380$, and the maximum shortfall $(\ell - 1)\sigma = 0.1620$, not 0.077.*

Disposition: Accepted in full. Under the corrected reading the corollary becomes a bound on the *capacity*, and it now reads $I \le (\ell - 1)\sigma$, which is 0.1620 bits at $\pi_e = 0.90$ and is emitted by the script at each operating point. The figures the referee identified as misapplied have been withdrawn from that role; the number 0.077 survives as the mutual information at $\Delta = 1$, which is what it always was.

A-M4. *The proof of "The two families behave differently" rests on two lemmas that are both false.*

Disposition: Accepted in full; the conclusion kept and reproved. Both counterexamples confirmed. The proposition is reproved from a difference formula, $\nu_0 - \nu_1 = [a_6{=}b_6] + [a_{12}{=}b_{12}] - [a_6{=}b_{12}] - [a_{12}{=}b_6]$, with a four-case analysis; the two false lemmas and their counterexample counts are recorded in a remark rather than absorbed, per the journal's convention that a correction is recorded in the paper. The proposition is retitled "D is the exception", the I family having been shown by the same enumeration to behave like T and not like D, so that the submitted dichotomy was mis-drawn.

A-M5. *The structural section is computed over three arm types and every quantitative section over two; the third letter is never justified and cannot occur in the admitted stream.*

Disposition: Accepted in full. A new Convention "The arm alphabet" declares $\{h, e\}$, grounded in Article 79's statement that phosphorylation is downstream of admission, and the T figures are restated over it: a cleaved T pair is sensitive with frequency 0.722, not the 0.806 the submitted scholium rounded to "about four times in five". Both alphabets are run in the verification and the three-letter figure is reported beside the two-letter one.

A-M6. *Adjacent contacts share a unit and are positively correlated, so the binomial counts are wrong.*

Disposition: Accepted in full. Confirmed: the ratio $\mathbb{P}(\text{both sensitive})/\sigma^2$ is 50.4, 10.5 and 5.6 at the three operating points. The dependence is now a numbered proposition, and every distributional figure is recomputed by transfer matrix over the 28 unit types—$P(\ge 1 \text{ sensitive})$ falls from 0.8255 to 0.7804 at $\ell = 54$ and the half-lengths rise from 23/78/1768 to 26/85/1802 sites. The binomial figures are printed beside the exact ones and asserted in the script to be the larger. The means are unaffected, by linearity, and

the proof now says so. Non-implication (xi) and the falsification register both carry the dependence, which the submitted version used twice without naming.

A-M7. *The channel ceiling's Δ-independence is stipulated, not proved: under a Δ-weighted ensemble the bound is violated.*

Disposition: Accepted in full, as a qualification. The referee's counterexample—0.0413 bits per contact at $\Delta = 6$ against $\sigma = 0.0324$ under a reweighted pair law—is quoted in the scholium, and H_{draw}'s composition clause is named in the statement of the theorem and credited in the register with the Δ-freedom, which it previously was not. The ceiling is retained: H_{draw} is Article 84's own hypothesis and does forbid the reweighting, so the theorem is sound; what was missing was the acknowledgement that it is conditional on it.

A-M8. *"A blind contact carries no information" holds only if the registration term is the whole of the orientation dependence.*

Disposition: Accepted in full. The premise is now a clause of the theorem and an entry in the hypothesis register. On second reading the referee observed that the uniformity theorem, unlike the ceiling, survives a further orientation-dependent term; that observation is now Remark "What the generality in w buys" and is the reason the theorem is stated for an arbitrary weight (see A-m1′).

A-M9. *Two described checks cannot fail, and one body number is not computed.*

Disposition: Accepted in full. The block Y1 check that compared an identity with itself is replaced by one that counts the pairs verified and states that the content is the one-sided form of the criterion. The ceiling check no longer resums the gap distribution—which, running over sensitive contacts only, totals σ by construction—but is tested against an independent sum over the whole pair ensemble, with the blind mass asserted to be $1 - \sigma$ and the gap-based sum asserted to agree. `VsiteHeritable` is now emitted by the script and removed from `macros.tex`, which again holds no numeric value.

Minor points, first round

All fifteen are accepted, with one substitution. The abstract's "first correction is quadratic" is corrected to linear-coefficient-with-quadratic-regime (m1); the quadratic coefficient is printed to five decimals and given exactly as 16176842/4044121 (m2); the claim that T–T and D–T pairs dominate σ is replaced by the true attribution to D–D, which carries 98.9 per cent of it (m3); the gap distribution is reported as concentrated at $g = 2$ with share 0.99997 rather than as a mean over a range (m4); the favoured state is noted to be sometimes the unaligned one, which is the mechanism of A-M1 (m5); six mis-numbered citations into Article 84 are corrected (m6, and see B-C2); the Ruling's claim about what Article 84 does not say is withdrawn (m7, and see B-C1); the realised information figures, computed but unused, are now reported beside the ceiling (m12); the duplicated ceiling table is removed (m13); the partition-against-labelling distinction is added as a remark and is load-bearing for the refinement theorem (m14); and the ν-reading non-implication is given its missing stipulation (m15). For m8 the referee's

proposal of a Sturm count was replaced by a Bernstein-coefficient certificate for σ' on $[0, \frac{1}{5}]$, which is exact in the rationals and shorter; the referee accepted the substitution.

Referee A — second round

Recommendation: accept with minor revision. All three major points accepted.

A-M1′. *"D is the exception" is asserted over any arm alphabet; the threshold is four letters, and the proof's exclusion step is vacuous.*

Disposition: Accepted in full. Confirmed: 0 of 4 both-sighted D pairs are blind over two letters and 0 of 36 over three, but 24 of 144 over four and 120 of 400 over five. The statement is restated at the sharp threshold, the vacuous disjunction is replaced by the referee's counting argument—a zero difference needs a_6, a_{12} outside the two-element set $\{b_6, b_{12}\}$ and distinct, hence two further letters—and a remark records the withdrawn claim. The verification now checks the first alphabet at which the claim fails, the referee having rightly noted that a test confined to the alphabets where a universal claim holds cannot discover that it is not universal.

A-M2′. *`VfieldDev` is an absolute mass deviation, which is not scale-free and bounds nothing at $\ell = 54$; the quantity the corollary needs is the per-contact deviation of the cost in bits.*

Disposition: Accepted in full. Confirmed, including the referee's observation that the absolute figure necessarily shrinks with ℓ while the relative one grows. The script now emits the scale-free quantity, maximised over π_h, over e^{Δ} up to 10^3 and over $\ell \in \{3, 4, 5\}$, at which it saturates: 2.83×10^{-7} bits per contact, one part in 3.54×10^6. The corollary and the abstract are restated with it, and the proof says why the mass figure is not the right one. The referee's point strengthens the claim as well as correcting it, the bound now being uniform in ℓ.

A-M3′. *Theorem "The capacity" takes its first term as exactly $\ell - 1$ from a theorem whose conclusion is exact only without the initiator.*

Disposition: Accepted in full. The proof now carries the order of the residue—$H(\text{field}) = \ell - 1 - O(f_I^4)$, the entropy defect being second order in the mass deviation—and notes that this matters only for the pure-limit column, where the whole capacity is an initiator effect.

Of the second round's minor points, m1′ is the most useful and is accepted with thanks: the uniformity theorem needs only that the contact weight be a function of the two presented patterns, so it is now stated for an arbitrary such weight and H_{rgy} is removed from what it rests on. Remark "What the generality in w buys" draws the consequence—that the symmetry, unlike the ceiling, survives a further orientation-dependent term—and the register is corrected in two rows. m3′ is accepted: the Gibbs-inequality form, which shows the conditional cost to exceed $\ell - 1$ on average rather than only for an unlucky field, is emitted at four points and replaces the submitted "happens to". m2′, m4′–m8′ are accepted as written.

Referee B — concordance constraint, first round

Recommendation: accept with major revision.

B-C1. *The Ruling asserts that Article 84 "does not say" something its own text says three times.*

Disposition: Accepted in full. The clause is struck. A new subsection, "What Article 84 proved, and what it already said about this", quotes that paper's falsification register, Scholium 7.12, Theorem 7.13 and the "with blind contacts" clause of its cost theorem, and states that the gap this paper fills "is not the observation—it is the number". A new non-implication disclaims priority over Article 84's statement of the failure, and the "Found" entry is rewritten to claim the magnitude and its consequence rather than the mechanism. This is the correction the editor regards as most necessary to the paper's standing in the corpus: a later article may supersede an earlier one, but not by misreporting it.

B-C2. *Two of the three imported Article 84 hypotheses are mis-numbered in the hypothesis register.*

Disposition: Accepted in full. H_{draw} is Hypothesis 4.16 and not 4.11; H_{frame} is 4.5 and not 4.14. Corrected throughout, together with the four further mis-citations the referee listed and the two environment-name swaps at c1.

B-C3. *The lattice caveat is cited to the wrong remark, and does not in fact apply unchanged.*

Disposition: Accepted in full, including the substantive half. Remark 9.6 corrected to 9.4. The referee's observation that the caveat bites harder here than in Article 84—σ depending on the specific arm word and not only on its ι-constancy, so that the consumption of primary arms as linkers changes the distribution rather than merely leaving a figure unproved—is now a numbered remark, and a new Target asks for the free-terminal distribution at a lattice node.

B-C4. *Undeclared contradiction of Article 84's Remark 9.6, that the registry term is irreducible by any redesign of the source.*

Disposition: Rebutted, on the strength of A-M1. Once the selection cost is seen to be $\ell - 1$ bits at every π_h, Remark 9.6's conclusion is not contradicted but confirmed on a wider domain, π_h joining the parameters that do not lower it. No supersession is declared because none occurs. The editor notes that this disposition was not available when the referee wrote: it is the mathematical referee's finding that dissolves the concordance objection, which is the process working as intended. On second reading Referee B accepted the rebuttal of the conclusion and required a qualification of the ground: Remark 9.6 argues from Theorem 7.3 that no parameter of the registration model couples to orientation, and under H_ν one does. That qualification is now in the Ruling—what is confirmed is the conclusion and not the stated reason, the conclusion surviving because the coupling is symmetric rather than because it is absent—together with Article 84's own Remark 7.8, which had already conceded the point for the initiator fraction.

B-C5. *H_{frame} is recast from a stack-level hypothesis into a per-contact one, and Article 84's Remarks 4.20 and 4.21 deny the identification the discharge rests on.*

Disposition: Accepted in substance; both proposed remedies declined. The theorem is retitled "H_{frame} is refined, not discharged" and the identification is registered as this paper's own hypothesis, H_{dist}, which quotes both remarks and says that Article 84 does not grant it. The editor declined the referee's first remedy, restating the theorem at stack level, because the local statement is the true one—the submitted scholium had already said the degeneracy is removed locally—and declined to leave it at a declaration of refinement, because Referee A's parallel point (m14) shows what is actually supplied: a sensitive contact furnishes the *partition* of its two states and not their labelling. The theorem now says that, which is weaker than either referee asked for and is what the mathematics gives. Convention "Inheritance" no longer claims that no hypothesis is added.

B-C6. *The corrected-cost formula is already Article 84's Theorem 7.10(b) and is not credited.*

Disposition: Accepted in full. Credited at Remark "The conditional cost is field-dependent" and moved out of "Proved here". What is this paper's own is the gap-dependence of θ and the expectation over the stream—and, as it turned out, the observation that the clause does not reduce the selection cost because the bias it posits has a random sign.

B-C7. *$\ell = 54$ is Article 80's node count for a $3 \times 3 \times 6$ box, not a column length; such a box carries 45 stacking contacts, not 53.*

Disposition: Accepted in full. The box arithmetic is now emitted by the script and asserted. A remark states that 53 is the nominal $\ell - 1$ carried for continuity with Article 84's arithmetic and that 45 is the physical figure, and the abstract no longer calls the box a column.

B-C8. *The Target misstates Article 79's acceptance sets: the sighted disubstituted unit is the catalogued Dm, which Article 79 accepts and recommends.*

Disposition: Accepted in full. A good catch which improves the paper. The Target now distinguishes D from T and withdraws the claim for D; the scholium and the molecular commentary identify the sighted D unit as Article 77's Dm, formula $C_{20}H_{16}O_3$, with its table and Article 79's H_{acc} cited. Since D carries almost all of σ, the channel runs through a species the architecture consumes rather than through a surplus the architecture refuses, which is the opposite of what the submitted Target implied.

B-C9. *The [C] label on the cleavage definition covers an inference Article 79 does not make—that cleaved units stack.*

Disposition: Accepted in full. Split. The definition is [C] for the quoted model only, and the stocking inference is now Hypothesis H_{stock}, registered, with Article 84's Remark 4.17 cited for the fact that Article 79's columnar model carries no orientation variable. The referee was right that the step is load-bearing; the paper now says so.

Minor points and missing citations, first round

All of c1–c13 and M1–M7 accepted. The abstract regains the initiator exception (c2); the scholium's account of what Article 84 premises and of its most consequential open quantity is corrected (c3); "discharged" becomes "discharged in its first clause" and then, after the second round, is restated again (c4, and see B-d2); the two definitions of ρ^* are reconciled where the substitution is made (c5); $\rho^* = 200$ and $p_3/p_4 = 1/10$ are credited to Article 84's Proposition 9.5 as stipulated illustrations and the second is stated in the body for the first time (c6, c7); Article 84's convention of reporting both cost figures is noted (c8); the registry field and the alignment field are identified as one object (c9); the Sources table is corrected, Article 57 marked as context only and Article 77 added (c10); the overstated "every statement is proved at $\pi_e = 1$" is narrowed to the application (c11); the gloss on Article 79's conditional is softened to match it (c12); and the bibliography header and two stale cross-references inherited from Article 84 are repaired (c13). Remarks 7.8, 4.17, 4.20, 4.21 and Theorem 7.10(b) are now cited where they bear, and the $\Delta > 0$ stipulation is carried in the notation.

Referee B — second round

Recommendation: accept with minor revision. All three points accepted.

B-d1. *The revision broke the convention range: the two conventions named are Article 84's 2.3 and 2.4, not 2.2 and 2.3.*

Disposition: Accepted in full. Corrected. The error was introduced by narrowing the list of inherited conventions from three to two and moving the wrong end of the range—a reminder that a citation range must be re-derived and not edited.

B-d2. *Target 14.4's first clause asks about flip-visible* sites *and about a threshold, not about a fraction of contacts.*

Disposition: Accepted in full. The clause is now quoted as written, and the paper says that the second is answered and the first answered in the form it admits—not a threshold on sites, Article 84 being elsewhere careful that the orientation datum cannot sit at a site, but the fraction of sensitive contacts induced by a per-arm cleavage probability. The referee's point is a real one: this paper and its predecessor put the datum at the contact, and a target phrased over sites cannot be discharged verbatim by either.

B-d3. *H_ν is missing from the uniformity theorem's premise list, although the strengthening of Article 84's cost theorem is obtained under it.*

Disposition: Accepted in full. H_ν is added to the statement, and the register's H_ν row now records that the strengthening rests on a premise Article 84's own theorem does not carry, and that the uniformity holds under either reading of ν for different reasons—trivially under Article 79's, where every contact is blind. The referee's Q1 is answered in the corollary itself: what is replaced is the hypothesis and not the conclusion.

Referee B's two remaining questions are answered in the article: the cleavage definition now points to the molecular commentary's reading of h and e as the two fates of one

oxalate arm, so that the independence being imported is visibly independence at that step; and the scholium's account of Δ_{rgy} now reads "supplying no value beyond two illustrative magnitudes".

Summary of dispositions

Round	Disposition	Points
A, first	accepted in full	M1, M3, M4, M5, M6, M7, M8, M9; m1–m7, m9–m15
A, first	accepted, remedy declined	M2 (range reported; the third reading of "cost" not made a headline)
A, first	accepted, remedy substituted	m8 (Bernstein certificate for a Sturm count)
A, second	accepted in full	M1′, M2′, M3′; m1′–m8′
B, first	accepted in full	C1, C2, C3, C6, C7, C8, C9; c1–c13, M1–M7
B, first	accepted, both remedies declined	C5 (partition, not labelling, supplied)
B, first	rebutted	C4 (no supersession occurs; ground qualified on second reading)
B, second	accepted in full	d1, d2, d3

The verification script grew from seven blocks and 90 emitted values to eight blocks and 153. Two statements were withdrawn outright and are recorded as withdrawn in the article rather than silently removed: the two lemmas of the submitted proof on the two families, and the claim that the D proposition holds over any arm alphabet. One claim of the submitted version was reversed in direction, and the reversal is the paper's principal finding.

The editor thanks both referees. The article is materially better than the one submitted, and in one respect—the direction of the channel—it says the opposite of what was submitted, which is what review is for.

3 Full independent multi-axis report (verbatim)

The following is the complete text of the independent referee report evaluating the manuscript across mathematics, concordance, and chemistry.

Recommendation: Accept with Minor Revisions.

This manuscript investigates the behavior of Article 79's self-separating substituted-chrysene source when it operates off the pure one-reagent limit. In Article 84 the author proved that in the pure limit both the disubstituted family D and the tetrasubstituted family T are invariant under the C_{2h} inversion ι, rendering every stacking contact except rare initiator pairs blind to its relative alignment bit. Article 85 resolves both questions of Article 84's Target 14.4 in exact arithmetic and uncovers a striking structural dichotomy: a knife-edge sensitivity polynomial of degree 8 whose quadratic term dominates, and exact equivariance that leaves the marginal law of the alignment field exactly uniform. Consequently Article 84's selection cost of $\ell - 1$ bits is exact off the pure limit. What

cleavage creates is a symmetric Shannon channel whose mutual information is bounded above by $(\ell - 1)\sigma(\pi_h)$.

Mathematical assessment: overlap separation criterion and the sharp three-letter alphabet threshold on D; exact rational construction of the degree-8 sensitivity polynomial; group-theoretic proof of marginal uniformity via the relabelling involution; information-theoretic separation of unconditional surprisal, conditional entropy, and cross-entropy; Markov transfer-matrix treatment of correlated contacts and Bernstein monotonicity certificate.

Concordance assessment: endogenous chrysene material purity and the identity of the sighted carrier as Article 77's Dm; complete resolution of Article 84's Target 14.4 and strengthening of Theorem 9.2; architectural separation of stock columns from the Interior Chrysene Lattice; exemplary hypothesis and precedence accounting.

Chemical assessment: chemical origin of the $\{h, e\}$ alphabet and post-admission phosphorylation; molecular symmetry of Dm as the physical ground of Theorem 8.2; thermodynamic coupling between Δ_{rgy} and column composition; experimental decidability of H_ν via mixed-arm stacking association constants.

Specific technical revisions: unamended "over any alphabet" phrase in Summary Proposition 14.6(ii); clarifying the decomposition $4 + 8 + 16 = 28$ for the 28 unit types; aligning preamble header comments with final title, pagination, and BibTeX filename.

Recommendation

Accept with minor revisions. The dual-agent orthogonal review is complete and reversed the submitted headline in a way that strengthens Article 84. The independent multi-axis report confirms the mathematical structure, concordance, and chemical grounding. The three minor technical revisions listed above should be addressed. No further computation is required. The article is materially better than the one submitted.

References

[Art84] C. D. Schaper. The placed source. *Annals of the Chrysene Formalism* 1(4):1703–1731, 2026. Article 84.

Revision history

Version	Date	Notes
v1.0	2026-11-01	Review record published with Article 85.

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As with any actively developing field, the mathematical and applied claims in this article are subject to periodic re-evaluation as the surrounding formalism matures and as the journal's AI-augmented review tooling advances. Consistent with standard scientific practice for provisional or fast-moving frameworks, this article and its review record may be re-audited by subsequent review systems, and a revised version bearing an updated review history may be issued to reflect developments in the field. Readers should consult the Revision History table above, and the journal's records, for the current version number and audit date of this article.

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