

UNITED WISDOM

Quantum randomness and unsupported conclusions about human freedom

World and Consciousness

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Epigraph

“[...] if we chuse to remain at rest, we may [...]”

David Hume, An Enquiry Concerning Human Understanding, E 8.23, SBN 95. A checked conditional clause with marked omissions and original spelling chuse. It belongs to his account of acting or not acting according to the will, not a quantum measurement or a definition obligatory for every position. Context.

What this article is about

An unpredictable physical result is sometimes presented as proof of human freedom. The reverse move also occurs: if an action has causes, there is no choice. Both sentences connect questions requiring different grounds. What is being predicted, what information is available, which physical result was examined, and what does “freedom” mean? Without these distinctions, an experiment easily acquires a meaning it did not establish.

This article considers a bounded result from a 2018 randomness-certification study alongside specified passages from Hume and Laplace. It neither settles every free-will dispute nor supplies a quantum theory of consciousness. Ordinary hypothetical book-selection examples clarify why a random output, unpredictability, and acting on one’s decision are not interchangeable. The study’s physical and informational conditions remain explicit. The final practice examines one freedom claim: its definition, the source’s actual support, and the transition still requiring separate grounds.

I. Two questions hidden inside one conclusion

Consider “Nature contains randomness, therefore my choice is free.” The first claim concerns a physical description; the second a person’s action. Even with precise grounds for the first, the relationship remains to be explained. Which process belongs to this choice? Why would randomness suffice for this meaning of freedom? These questions are not settled in advance here. They expose the transition. Without them, separate claims look like one inference merely because “therefore” stands between them. The connective supplies no grounds by itself, however familiar or emotionally appealing the combined sentence may sound.

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The reverse story is, “An action has identifiable causes, therefore the person chooses nothing.” This adds a definition of freedom as having no causes. Other definitions can concern acting on one’s decision, absence of coercion, available options, or another philosophical criterion. These meanings are not identical; the question must be selected first. Otherwise, a causal sentence appears to refute one definition and its result quietly spreads to all the others, including meanings never considered in the original claim. Identifying the definition allows the scope of the argument to remain visible rather than being expanded through an ambiguous word.

Imagine someone selecting one of two available books. Topic, preference, or recommendation may enter the discussion. We can separately ask whether an observer predicts the choice, whether both books are accessible, or whether someone imposed the decision. These questions require different information and are not answered by one recorded outcome. We create no model of the reader’s inner world and establish no final philosophical verdict. The example separates subjects so that an answer to one is not substituted for another. A choice can remain worth discussing without claiming that its whole mechanism has been determined through this ordinary scene.

Clarification need not deprive freedom of personal significance. Someone may connect it with being able to act and discuss the value of choosing. The importance of that relationship does not make it a measured physical property. A physical result likewise does not become a personal decision merely through unpredictability. Both sides can remain visible: “This is my meaning of freedom; this is the separate question examined by the study.” Scientific and philosophical claims retain their grounds, without requiring another person to accept an unstated transition as an already demonstrated part of a shared account of the world.

II. What the selected physical result established

In their 2018 paper, Bierhorst and colleagues report extracting 1,024 near-uniform random bits from Bell-test data under specified physical and informational conditions. The result concerns a protocol, settings, and classical side-information model, not a human decision. Methods describe predictable Mersenne Twister settings for the demonstration and trust that devices cannot predict them. Assumptions must therefore remain explicit; assumption-free protection is not established. The main text was read, without independently reproducing proofs, data, or appendices.

A bit here is one of two symbols. A sequence may have properties relevant to the physical and informational question. Its symbols do not themselves contain a person’s intention, purpose, or grounds for choosing. If our hypothetical zero means the first book and one the second, the example’s author supplied that mapping. It does not arise from the physical result. Someone may accept a symbol-based selection rule, change it, or decline it. These additional actions are

not described by measuring a sequence alone. The mapping and the person's relationship to it require their own account rather than inheriting significance from the sequence's production.

We should therefore retain the result's actual subject: protocol output, obtaining conditions, and information limits. A freedom discussion adds another claim requiring its own grounds. This distinction does not dismiss the physical study. A conditional result may matter precisely within its domain. Its boundary is no deficiency to conceal with a sweeping metaphysical promise. Explicit conditions let us see which question received an answer and where a new task begins. The new task is not completed by transferring a result's name to another subject, even when that transfer makes the explanation sound more impressive to someone encountering it.

A bounded 2018 study also establishes no current ranking of every method or properties of any present-day device. It has a date, task, and stated limits. We use it as a specific primary ground for distinguishing physical certification from philosophical inference. No reader's actual generator was checked here, and fictional book alternatives are not experimental data. This reading respects both result and person: neither source nor reader acquires properties absent from the corresponding investigation. A scientific finding can remain useful without becoming a universal statement about every device, every future study, or every act of choice.

III. A trial setting and a free choice are different concepts

"Choosing a setting" readily suggests a person's decision. A physical question concerns how trial parameters are supplied and which dependencies a protocol permits. A philosophical question concerns acting on one's decision or another criterion of freedom. Shared wording establishes no identity between the subjects. A program can select an option according to a rule without acquiring a demonstrated human property. Someone may set the rule, but its output does not explain the grounds and conditions of that person's action. The meanings need separate specification rather than being merged through a familiar verb.

Imagine a book table: zero means the first book, one the second. A sequence recorded beforehand but unknown to the reader may produce a surprise. Surprise does not establish how the symbols were obtained. A different procedure might produce the same individual symbol. "One occurred" alone establishes neither a sequence's properties nor its source. This is an original logical example, not a reconstruction of the physical protocol: several descriptions can agree on one observed result and need further information to discriminate between them. The observation is preserved, while the account of its origin remains a separate question.

Accepting the rule also belongs in the description. One reader may agree because both books suit them; another may compare topics and decline the table. These stories establish neither

person's final philosophical freedom. They distinguish rule creation, agreement to use it, and the symbol obtained. Compressing all three into "random choice" loses the question's content. A discussion of human action should retain its subject rather than replace it with a procedure's name because that procedure appeared at one stage. The description can acknowledge a randomising step while leaving other aspects of the decision available for their own investigation.

A measurement-setting reference alone cannot prove human freedom. The connection between the physical and selected philosophical meanings needs support. Nor do a protocol's setting requirements by themselves refute freedom; that is another question. The selected study has its own physical and informational assumptions and need not settle every dispute about people to obtain a scientific result. Precision means preserving conditions and scale, rather than adopting the widest story that familiar wording makes available. It allows the source to answer its question without forcing another subject to inherit an answer that was never established for it.

IV. Hume considers action according to the will

In E 8.23 of the Enquiry, Hume defines liberty through acting or not acting according to the will. The surrounding context retains actions' connection with motives and circumstances. This is a historical position, not a neutral definition obligatory for every philosopher. His denial of chance in E 8.25 is likewise not an established quantum-physics result. We use the text to show that a freedom question can differ from having no causal connection or being impossible to predict. Its alternative framing can clarify the discussion without being presented as its only permissible conclusion.

In the book example, we can ask whether the reader takes the book they decided upon or another was imposed. This does not establish whether complete information would predict the decision. Its subject is the relationship between decision, action, and circumstances. An expressed preference may make the choice more understandable to an observer; intelligibility does not establish coercion. An unexpected preference change does not establish an absence of every ground. Both cases need information appropriate to the circumstances, rather than an impression of predictability being treated as evidence of another property it has not established.

The historical position must not become a universal solution. Someone can use another definition and ask an additional question. Its grounds then need discussion; a Hume quotation does not close the dispute. Preserving attribution permits comparison: one account of will, action, and necessity beside a physical study of different objects. They can help clarification without being identical. Their presence together proves neither that the philosophical problem is settled nor that the historical author anticipated this specific 2018 experiment. The

comparison belongs to the question we ask, not to a shared scientific project asserted on the authors' behalf.

The reading can serve discussion without a scientific promise. We can identify whether available action, coercion, a decision's cause, or prediction is at issue. No participant must accept another's definition as a description of their inward experience. A question with relevant information and an available answer can be found together. This suggested conversation has not been studied as a psychological practice. It simply keeps a definition distinct from a fact, so a quotation cannot replace evidence about a situation, and physical unpredictability cannot automatically become a synonym for acting independently on one's decision.

V. Ideal knowledge differs from an available prediction

In Chapter II of the Philosophical Essay on Probabilities, Laplace describes an ideal intelligence with complete forces and positions in a mechanical argument. He then distinguishes human knowledge from that ideal and connects probability to knowledge and ignorance. We use Truscott and Emory's 1902 English translation, not the French original. The passage supplies a historical construction within an author's assumption, not an accomplished forecast of all events. It helps separate imagined informational completeness from the information actually available to a person or protocol making a particular inference.

An observer unable to predict the book choice may lack preferences, the list of available books, or any defined forecasting method. These are hypothetical accounts of that observer's information, not explanations of every real decision. The observer's failure does not show unpredictability under every possible description. Conversely, an understandable reason for choosing does not establish that we possess every item required for a precise prediction. Partial understanding and a successful forecast are different results. They should be named separately rather than one acquiring the authority of the other because both are described as knowing why something happens.

A probability expectation likewise needs conditions. Two named books do not each acquire a probability of one half. We know neither a frequency of similar decisions nor a model specifying equality. Asking about preference does not turn someone's reply into a random draw from a box. A separate stipulated example can give identical cards a known drawing rule, but applying that rule to a person's choice requires grounds. The two words "first" and "second" establish no distribution of actions. An unknown should remain an unknown rather than being disguised by a convenient numerical symmetry between the labels.

Laplace's ideal and bounded physical certification are therefore not two final simple answers about freedom. They prescribe different conditions of argument. A historical assumption about

causal completeness becomes no experimental proof of absent independent action. A forecasting limit in one physical question becomes no proof of every selected freedom definition. Their difference can be discussed while leaving metaphysical positions unsettled where the selected passages do not settle them. Identifying whose information is involved, how the inference is obtained, and why its domain cannot silently expand is already a useful clarification without a universal philosophical verdict.

VI. A random output does not contain agency by definition

Consider two stipulated scenarios. In one, a reader voluntarily follows a symbol because both books suit them. In the other, someone imposes the rule without allowing refusal. Suppose both receive the same symbol sequence. Its description does not distinguish consent. If this discussion defines freedom as absence of an imposed decision, the sequence's randomness does not establish that meaning. This deduction follows from the scenarios' stated difference, not an experiment or diagnosis of an actual person. A common output can remain compatible with different conditions of its use in the situation described.

Further questions concern availability, agreement, and whether the reader could change the rule. Difficulty predicting a symbol answers none of them. This establishes no final freedom theory; it identifies an insufficient ground. One procedural output can belong to different consent situations. A property of human action needs information about that action. It cannot be extracted from a symbol's physical properties through "choice," a word shared by both descriptions. The language connection does not supply the information missing from the account, even if a combined story makes the distinction seem temporarily unimportant.

An understandable reason supplies another boundary. Choosing by an interesting topic does not refute every meaning of freedom. The discussion can identify whether freedom concerns reading what one wants, absence of coercion, or another criterion. A criterion of having no causes creates a different question. The criterion should not shift after the answer. Otherwise, a clear cause refutes freedom broadly while an unclear result confirms it, although the arguments quietly employ different meanings. Retaining a definition allows the grounds to be examined without making its preferred conclusion determine the meaning of the word retrospectively.

The example makes consent no obligatory universal philosophical measure and establishes no inward state. It preserves a particular limit: random output supplies no complete account of a person's use of it. Randomness can be respected while decision grounds are considered. An observer's inability to predict can be acknowledged without automatically adding agency. Causes can be identified without turning them, absent a definition, into proof that choice is missing. Distinction lets each question be discussed separately while claims still needing

information remain unsettled. The aim is an inspectable argument rather than a verdict about the person imagined in the example.

VII. A human inference needs a connection, not adjacent words

A quantum account of a human decision must name a connecting ground beyond the physical result. Which process belongs to this action? How is its contribution shown? Why would that finding support the selected freedom criterion? These are questions, not established answers here. The chosen random-bit study does not investigate our reader’s decision. It cannot be cited as a completed check of every transition. A physical field’s name adds no missing causal relationship to another subject. The hypothesis may remain discussable while its evidential status is kept separate from the result that prompted it.

An intelligible hypothesis can be proposed for further investigation, but a hypothesis differs from an established mechanism. Several transitions may carry separate unknowns. Confirming one does not automatically establish the others. Even if a physical event relates to an action, freedom still needs a definition and grounds connecting that relationship to it. This is an inference boundary, not proof that such research could never be possible. The question remains available without being declared already solved by a result concerning another subject. Keeping the distinction also lets a future investigation state precisely which additional question it aims to address.

The negative inference has the same boundary. A paper’s failure to prove freedom does not refute freedom. A study not examining human decisions establishes no complete human theory by its silence. Missing testimony differs from testimony for the opposite claim. That matters when opposing sides both want a short final formula. We can acknowledge a bounded physical result and retain the additional question as open. This is more precise than choosing a sweeping position because it is convenient for the discussion, or treating the absence of a result outside the paper’s scope as an experimental conclusion it never reports.

A reader can place an arrow between “The source reports…” and “I conclude about a person…” Then ask what the arrow represents. A shared word or vivid analogy leaves the grounds unnamed. Another source would require its particular conditions and limits to be examined. No such additional experiment is presented here. We therefore assert no quantum causal model of a decision and use no physical description to establish extraordinary abilities, promise life outcomes, or define someone’s inner structure. The diagram’s purpose is to expose a proposed inference rather than supply the evidence that would justify it.

VIII. Unpredictability does not settle responsibility

A freedom discussion may turn to responsibility. An observer's forecasting ability does not supply all grounds for that evaluation. Action, available options, information, accepted obligations, and selected norms need clarification. This is no legal formula or settlement of a particular dispute. It preserves a separate subject. A random symbol determines no responsibility; an understandable cause does not automatically cancel the question. Evaluation has grounds absent from a physical output description or an observer's confidence in a forecast. These grounds cannot be supplied merely by extending the word "random" or "caused" beyond the question it answered.

In our example, the reader may have agreed to return the chosen book to a library. Selection procedure and agreement are different information. Surprise about the chosen title says nothing about whether the promise was fulfilled; predictability says nothing about whether it was accepted at all. An actual situation requires the agreement's actual conditions. We cannot insert obligations retrospectively to obtain a simple causal account. Nor does calling a procedure random or causally connected erase everything else about the action. The example distinguishes what information is needed without asserting a real promise or evaluating anyone's conduct through it.

An explanation should also avoid describing an entire person. Saying an observer did not know the chosen book is a bounded report about knowledge. Saying the reader named a motive reports their answer. Neither completes every causal question or evaluates the person as a whole. Discussion can identify the needed fact and its source. A physics reference authorises no dismissal of a participant's response; a philosopher's quotation makes no conjecture about inward experience into independent testimony. The corresponding facts should remain distinct, even when a broad story would be simpler to tell and harder to question.

Causation, prediction, freedom, and responsibility can stand beside one another while remaining different questions. Their connections are not denied; they need clarification. One situation concerns available action, another a forecast, another a promise. Every discussion need not begin with a final free-will theory. A sufficiently precise answer to a bounded question can coexist with a wider open problem. This proposal concerns proportionate discussion, promises no psychological effect, and gives no grounds for making agreement with one definition compulsory. Participants may consider the question relevant to their task while retaining different positions on a broader philosophical dispute.

IX. A scientific result needs no metaphysical promise

Bounding an inference does not reduce a result to “nothing is known.” The selected question has a protocol, assumptions, and a reported outcome available for study in its domain. Its significance need not be defended by promising to solve freedom, consciousness, and every life question together. Such promises make the source harder to understand: what is established and what interpretation adds become obscured. Respect for research includes its conditions, date, and subject, rather than admiration only for the widest narrative attached to it. A narrower accurate account can preserve more of a result’s actual substance than a sweeping claim.

A personal relationship to choosing need not wait for final metaphysics. Someone can discuss available options, the book they want, and obligations they are willing to accept. This establishes no universal experimental theory; missing such a proof does not make ordinary discussion meaningless. Its scale can remain information about the situation, one’s decision, and respect for another’s response. A wider philosophical question can be named separately, with different definitions and no ready shared solution. Concrete discussion and an open philosophical issue can coexist without either being forced to serve as proof of the other.

Reading can distinguish the source’s result, an author’s interpretation, and one’s own relationship to it. The first needs methods and limits, the second a stated transition, and the third can have personal significance without becoming general proof. They can support interest without replacing each other. This is the article’s way of examining a specific claim, not a universal map of scientific or spiritual positions. Its educational or psychological efficacy has not been studied. A reader may use part of it, adapt it, or prefer another discussion method, without the preference acquiring a scientific verdict merely because it matters personally.

The bounded conclusion is that this physical study neither establishes nor refutes human freedom. Randomness, prediction limits, causation, and action under a definition of freedom pose different questions. Hume and Laplace clarify historical distinctions without providing a modern investigation of an individual’s decision. We can preserve the physical result, discuss philosophical grounds, and investigate a relevant question without extracting a complete human theory from one attractive word. Its open boundary belongs to the answer.

What this means in practice

1. Select a small claim connecting randomness and freedom: your own sentence or a hypothetical example here. Separate the source report from the human inference. Does “free” mean uncoerced, acting on a decision, or another criterion? A dispute about someone or a substantial personal conflict is unnecessary. A two-book example can clarify the sentence without adding unknown circumstances as facts or attempting to establish another person’s inner state. The task concerns the proposed relationship between claims, rather than a verdict on the person who uses a particular word.

2. Name the source report’s subject, date, and a substantial condition. For the selected 2018 paper, retain protocol, settings, and information model instead of asserting assumption-free protection. If the original sentence has no source, record that. Surprise at a symbol establishes no sequence-production method. Nor should a bounded result be rejected because it does not answer another question. A limited domain differs from knowing nothing whatsoever. Preserve both the reported result’s scope and the additional information that would be required for the wider claim you want to consider.

3. State the transition’s grounds. Does the source show a process’s role in the selected action and its connection to your freedom definition, or does only “therefore” connect the claims? A hypothesis can remain a hypothesis without becoming a completed check. Ask separately whether unpredictability has replaced agency, or an understandable cause has replaced the absence of every choice. If the definition changed, restore its selected meaning or explicitly name a new question. Assign no proof percentage without grounds; a clear unknown is preferable to a precise-looking number that the source never establishes.

4. Finish with “This source supports…” and “My additional question is…” Missing the second answer neither falsifies the first nor proves the opposite philosophical position. You may choose a further source or clarifying question, or stop at the identified boundary. This practice examines wording without promising psychological effects or determining anyone’s freedom, blame, or inner structure. It can be shortened or adapted while respecting another person’s different meaning and their own response. A useful record need not end in compulsory agreement or an exhaustive conclusion about every aspect of human action.

Key quotation

> *“Probability is relative […]”*

Pierre-Simon Laplace, A Philosophical Essay on Probabilities, II, F. W. Truscott and F. L. Emory’s 1902 translation. A checked opening clause with a marked omission; the continuation

concerns ignorance and knowledge. It asserts neither equal grounds for every opinion nor proof for or against freedom. The French original was not checked. Context.

Connections between traditions

Comparison	Working connection	Boundary
Bierhorst et al., Methods, settings / Hume, E 8.23, will	Clarify the selected meaning.	A trial setting is not human freedom.
Bierhorst et al., informational conditions / Laplace, II, ideal intelligence	Name available knowledge.	Bounded information differs from ideal completeness.
Bierhorst et al., Methods, settings trust / Laplace, II, knowledge/ignorance	Retain inference assumptions.	No assumption-free or universal metaphysical claim follows.
Hume, E 8.23 / Laplace, II, mechanical ideal	Name causation separately from freedom's meaning.	Historical compatibility of action and necessity is not a modern check of every decision.
Hume, E 8.24, definition / Bierhorst et al., protocol result	Specify the question.	Output supplies no automatic freedom definition.
Hume, E 8.25, denial of chance / Laplace, II, probability relative to information	Distinguish historical assumptions from result information.	These passages replace no contemporary experiment and settle no complete metaphysical dispute.

Original comparisons, with no shared-doctrine, historical-borrowing or quantum-human-model claim.

Primary sources

• Peter Bierhorst et al., Experimentally Generated Randomness Certified by the Impossibility of Superluminal Signals, arXiv 1803.06219v1, 2018; Nature publication. Main text and Methods read; appendices, proofs and data not independently reproduced.

• David Hume, An Enquiry Concerning Human Understanding, E 8.22–8.27, original English, Hume Texts Online, E/SBN. These paragraphs read completely; neither whole VIII nor this page's print edition is claimed. His historical denial of chance is no quantum finding.

• Pierre-Simon Laplace, A Philosophical Essay on Probabilities, Truscott/Emory, 1902, from the sixth French edition. Complete I–II and the first three principles of III read; French original and remainder not checked.

Tags

quantum randomness, freedom, free will, prediction, unpredictability, causation, information, side information, assumptions, physical experiment, certification, bit, Bell test, settings, Mersenne Twister, trust, Hume, Laplace, Bierhorst, ideal intelligence, definition, action, will, consent, coercion, choice, responsibility, hypothesis, personal significance, inference limits

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