

UNITED WISDOM

Multiple causes: why one contributing factor is not the whole explanation

World and Consciousness

Andrey Zarinsh & Maria Evilkut

W-13-N03 · EN

@andrey.zarinsh @ilkutki

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Epigraph

> *“There are often several independent modes in which the same phenomenon could have originated.”*

John Stuart Mill, A System of Logic, III.10, §1. The complete checked sentence concerns plural causes and complications of inference from agreement. “Often” is retained; it does not impose an identical cause count on every result. Context.

What this article is about

After an event, its conspicuous final step is easily named as the cause. A book fell after a shelf moved; a meeting was delayed after a late message. This can suffice for a narrow question. It does not necessarily describe the complete set of conditions, another route to the same result, or the grounds of a responsibility judgment. Calling a factor “to blame” adds a question that causal enumeration alone does not settle.

Here, multiple causation covers different relationships: joint conditions for one result, alternative routes to it, and different “why” questions. We examine specified passages from Mill and Aristotle, with a bounded methodological example from Pearl. Hypothetical catalogue and meeting cases show why an important factor need not act alone, while numerous conditions need not cancel responsibility. The title imposes no universal cause count on every narrowly defined outcome. The final practice clarifies one causal sentence and the boundary beyond which information is still needed.

I. Define the event first

Imagine a needed record appearing in a small catalogue. Someone says, “It appeared because a button was pressed.” Another replies, “Because the data were prepared.” A third mentions access. These answers may identify different conditions for one result. Before choosing between them, we should clarify the result: data entered, record saved, reader able to see it, or a separate check completed? “Appeared” can merge several states whose required conditions need not be identical. The question therefore needs its own object before a cause label can be assessed against the evidence available.

@andrey.zarinsh @ilkutki

We will select a simple hypothetical result: a new record was saved in a specified catalogue at a stated time. No actual program's mechanism is asserted; the subsequent rules are explicitly stipulated. This separates a screen display from saving or later acceptance. Changing the question requires changing the result's description. Otherwise, participants compare answers about different events and treat different wording as evidence that someone ignores an obvious sole cause. Clarifying the event gives the disagreement a subject that can be investigated rather than leaving it attached to an ambiguous everyday expression.

Relevant conditions depend on the question's scale. Asking why saving occurred now may emphasise the final action. Asking why it became available may emphasise data and permission. Asking why the record has this form requires its field structure. These questions can complement each other without making every answer equally precise or exempt from evidence. Each selected condition needs a stated question and grounds appropriate to it. We can then examine whether the explanation actually answers that question, instead of assuming that all uses of "why" demand one identical causal sentence.

A useful opening is, "We are explaining this record's saving, rather than its indexing, quality, or significance to a reader." The boundary does not impoverish the account. It prevents a quiet transition to a result not yet established. Another question can receive another description and be examined separately. Multiple causation thus begins with a precise subject rather than a long list of everything surrounding an event. Without that subject, one factor looks universal while many factors become an indefinite answer that cannot be checked or used to select a next action in the task being discussed.

II. Mill: the final step does not exhaust the conditions

In Book III, Chapter 5, §3 of A System of Logic, Mill distinguishes a named final step from the assemblage of conditions. One condition can be conspicuous because it completed the others' conjunction. That does not make the remaining conditions irrelevant to the selected result. He also considers persistent states, negative conditions, and the purpose of naming a cause. We use the original English eighth edition of 1882. Historical medical and legal examples are not adopted as present guidance; the causal sentence's structure and completeness are the issue here.

For our catalogue, stipulate a rule: saving requires acceptable data D, permission P, and action S. All three are present in the case. S happens last and attracts the account's attention. Without P, however, the press would save nothing; unsuitable D would also prevent the result. This deduction follows from our stated rule, not a check of any actual service. It shows why the condition completing a set cannot automatically be equated with the entire set simply because it is the most recent or conspicuous element in the story someone tells afterwards.

Naming the final action can be appropriate. People who already know about the data and access may need only an answer about timing. Every conversation need not repeat every condition. Omitting shared information nevertheless differs from claiming that the conditions do not matter. A broader question, or changed shared knowledge, calls for their return to the description. Otherwise, brevity changes the claim: “S completed an already prepared set” becomes “S alone ensures the result in every circumstance.” Our model establishes no such universal sufficiency of the isolated action, however clear the final step looked at the time.

A persistent state can contribute even when it did not change during the selected minute. Permission was granted beforehand and attracted less attention than the button press. That does not eliminate its role in the specified rule. Mere precedence, conversely, does not make every state a cause: many surrounding things are absent from the saving relationship. Grounds are needed to distinguish rule conditions from incidental surroundings. A real task requires those grounds to be checked. Our toy example states them openly so that the reader can examine the inference’s structure without mistaking a stipulated condition for an observed mechanism.

III. Joint conditions differ from alternative routes

Several conditions may be jointly required for a result, or the result may arise through different routes. These relationships should not be merged into “many factors have an influence.” Our first rule requires data, permission, and action together. For another hypothetical catalogue, we can stipulate two routes: manual saving through D, P, and S, or automatic saving through a separate prepared pair T and U. This is a different model. Its routes establish no actual catalogue mechanism; they expose the difference between conjunction and alternatives, which would require separate investigation in an actual system.

In Book III, Chapter 10, §§1–2, Mill examines multiple ways of producing one effect and their complication of inference from observed agreement. A condition may contribute to this case without being necessary in every case of the same result. Participation in one route is not universal necessity across a class. His historical formulation does not establish our catalogue’s scheme. The scheme remains an openly stipulated example used to clarify the question, rather than an empirical finding that gains authority through being placed beside a historical source.

If the record took the manual route, S may have mattered to this event. A prepared automatic route might instead have saved it without S. “Would it have appeared without the press?” requires the other route’s state at that time. Listing conceivable methods is insufficient: an alternative must apply to this case. Conversely, a second route in some other catalogue does not show that it operated here. We distinguish a stipulated alternative, a confirmed available route, and the actual history of a particular saving. Each is a different result with its own need for information.

The clarification changes the practical question. Restoring manual saving concerns its joint conditions. Establishing access to saving generally involves comparing the routes actually available. Explaining this event means determining which route operated and what else was prepared. A single factor list does not answer all three questions equally. Select the result and relationship, then obtain the relevant information. Multiple causation becomes an explanatory structure rather than a long enumeration capable of defending any account regardless of the conditions' actual state or the particular event that the question was originally intended to explain.

IV. Aristotle: different answers to different "why" questions

In Physics II.3, Aristotle distinguishes kinds of causal answer: what something is made from, its form, the source of change, and the purpose of action. Hardie and Gaye's English translation retains an ancient philosophical framework. These are not four identical preceding events and do not automatically become a modern scientific model. We use the difference among questions while retaining its origin. It helps explain why several answers can coexist without any one becoming a complete explanation of every feature of the subject being discussed.

For our meeting, we can ask why it was organised and why it started late. The former concerns participants' purpose; the latter the start's timing conditions. "To discuss a book" does not explain why the room became accessible later. "We awaited access" does not establish why the group wanted to meet. Both may suit their questions, but information about this meeting is needed to confirm them. We do not assert that every action must receive a complete Aristotelian classification or that its purpose is identical to the physical mechanism through which an event occurs.

A catalogue record can similarly be discussed through its fields, saving action, and preparation purpose. A format question differs from a timing question. When speakers say "cause," asking which "why" they mean can clarify the dispute. Sometimes clarification removes the apparent disagreement. Elsewhere the proposed answer genuinely conflicts with evidence, and specifying the question does not rescue it. Different questions do not make all explanations equally justified. They identify the claim requiring support, rather than inviting us to compare incompatible answers merely because they share a familiar word that obscures the task of their explanation.

The comparison's boundary matters. Mill's assemblage of preceding conditions and Aristotle's kinds of "why" address different problems. Calling them one doctrine would erase the distinction between purpose, construction, and a condition of occurrence. Here they meet through our question about explanatory completeness: which result are we explaining, and what answer is needed? That is our reading's connection, not proof of one historical teaching. Both distinctions can be useful without asking an ancient passage for a ready-made modern

algorithm, or turning the latest conspicuous condition into an answer to every possible question about the subject.

V. A scheme exposes assumptions rather than replacing information

In Pearl's methodological overview, the selected §3.2 and §3.4 definitions state dependencies and background context, supporting conditional answers. We use the distinction between a specified relationship and grounds for its application. A scheme does not establish its assumptions. This is an author's approach, not a catalogue study, replicated proof, implementation, or evidence of philosophical consensus.

Our rule could be drawn as three inputs leading to an output: D, P, and S. The drawing would merely abbreviate the stipulated condition. Arrows add no fact about a real catalogue. If a service saves differently, an elegant scheme remains inappropriate. Applying it requires information about the subject's mechanism or relevant evidence of the relationship. The diagram's form cannot become independent testimony. Its value here is explicitness: readers can see what is included, what is excluded, and the conditions under which an answer has been deduced from the rule supplied in this example.

Suppose permission P was omitted because every observed case already had it. If permission disappears, the shortened account may predict wrongly. This does not require every persistent factor to appear in every scheme. The question and application domain matter. Where P is guaranteed, it can become an explicit background condition. A comparison with P absent requires that background to be reconsidered. A changed question changes what the account must specify; it does not change the fact merely by renaming the condition. Omitting a shared condition should therefore remain visible as a bounded simplification.

The record supports discussion without demanding knowledge of literally everything surrounding an event. We need a sufficiently specified relationship for the selected question, not a complete inventory of the world. Yet convenience alone cannot establish sufficiency. A newly found omitted condition that changes the result must be considered. The scheme can be revised, its application narrowed, or missing data acknowledged. Internal consistency makes a deduction intelligible, while its fit to a subject needs separate grounds that may change with further information. That distinction remains useful even when the model seems simple and its drawing especially convincing.

VI. Presence alone does not make background a cause

Multiple causation can be read too broadly: several conditions are involved, so everything nearby is called a cause. Presence and causal role differ. Another book may lie on the desk, a conversation occur outside, or a cup stand nearby while a record is saved. Our specified rule involves none of them. A real model needs reasonable grounds for omissions, but proximity itself establishes no influence. A relationship to the selected result is needed, rather than merely a shared location and time that makes an incidental detail easy to add to the account.

In III.5, §3, Mill considers negative conditions, including absent counteracting circumstances. The distinction is useful without requiring an infinite inventory of everything absent. We can stipulate that our catalogue permits saving only when prohibition Z is off. The absence of Z then becomes explicit in its rule. An absent unrelated book on a nearby desk receives no such status. The distinction depends on the stated relationship, not merely on whether the condition is phrased positively or negatively. An absence can matter, but describing something absent does not establish that it matters here.

Conditions also have different durations. Permission might persist all day, while acceptable data were checked just before pressing. Duration does not measure the strength of an influence. A condition becomes no less necessary within this rule through having been fulfilled earlier. The final condition becomes no more “to blame” through being tied to the result’s minute. Timing may matter for a selected question, but temporal prominence does not replace analysis of the relationship. We should name whether we explain occurrence time, availability, or a particular property, rather than letting one timing observation answer every version of the question.

A working record can separate rule conditions, retained background, and unknowns. Something is background because this question holds it fixed, not because it is permanently excluded from every explanation. An unknown must not enter the conditions as an established fact. New information can change a circumstance’s role and require revision. This preserves proportion: neither every worldly detail becomes a cause nor substantial background gets ignored. The account stays bounded while showing the grounds of the boundary and what could require it to change. A bounded description can thus be usable without pretending to include all information about the event.

VII. Counting conditions does not measure their shares

Three required conditions can tempt us to assign each a third of the result. A condition count supports no such calculation. Our D, P, and S rule requires them together; the outcome is not divided into three equal pieces. We can examine one changed input, compare available routes, or select a condition for repair. These are different questions, not ready-made shares. A numerical evaluation needs a defined quantity and method of measurement. It cannot arise from a list of letters alone, however much confidence is added to the explanation accompanying them.

One condition can also be described broadly or divided into smaller ones. “Acceptable data” might include format, completed fields, and a selected identifier. Naming five conditions instead of three changes the account rather than the result itself. Division by the number of items would depend on the list’s arbitrary detail. This establishes neither that numerical contribution research is impossible nor that every measurement is arbitrary. It identifies an insufficient ground: the number of words or list entries is not itself a measure of influence on this event under the selected criterion by which its outcome is defined.

A more precise question asks what happens when S changes while D and P remain. The toy rule supplies an explicit answer. Another question asks how often that change affects the result across a stipulated collection of states. The collection’s composition is then needed; one successful saving does not provide it. An actual catalogue requires corresponding information. Neither answer automatically evaluates a person’s responsibility. Model change, group description, and normative judgment remain distinct even when all concern one event. Sharing a subject does not remove the separate grounds required for the different claims we might make about it.

Practical priority need not match a hypothetical share. Permission P may already be secure while data D need work. Acting on D can then be reasonable even though S remains necessary within the rule. Elsewhere access requires repair. A next step depends on what can presently be changed and what the task needs. We can prioritise a condition for action without declaring it the sole cause. The explanation need not invent percentages to remain useful for a concrete decision with actual constraints. It can identify the relevant condition and the reason for acting on it while preserving the broader causal account.

VIII. Several causes do not automatically cancel responsibility

“A factor to blame” mixes questions. A factor may contribute to occurrence, while blame concerns another evaluation. Data, permission, and a press do not establish who knew what, which obligations were accepted, or which actions were available. Discussing a person requires information relevant to that action and the chosen evaluative grounds. A condition list cannot replace it. The list supports neither universal accusation of one participant nor an automatic conclusion that everyone has equal responsibility or that nobody is responsible. Multiple causal conditions do not settle a normative question merely through their number.

In III.5, §3, his casting-vote example, Mill notes a responsibility-related purpose in singling someone out. This is not legal advice here. It reveals a selected subject: one purpose names a completing condition, another examines an assemblage. Contemporary evaluation needs separate grounds. Our catalogue has no legal or moral norm for judging its participants. Even mathematically symmetric inputs do not become people with identical authority and obligations through an analogy. A toy mechanism can clarify one causal relationship without supplying all information relevant to the people involved in an actual situation.

Suppose a meeting was delayed by both unavailable premises and a late message. If someone promised to check access and did not, multiple conditions do not remove the question about that promise. Without a promise, it cannot be inserted retrospectively to obtain a simple account. These are hypothetical alternatives identifying needed information, not established cases. Actual circumstances should be heard and confirmed actions distinguished from guesses. Multiple causation supplies neither a convenient excuse for everything nor a way to distribute accusation across everyone present. It clarifies the causal question while leaving the separate evaluative question in need of evidence.

Improving a process can be discussed separately from evaluating a person. Checking access, clarifying message timing, and making a condition visible are concrete proposals rather than diagnoses. Their suitability depends on consent and circumstances, not victory in a dispute about the sole cause. Sometimes both actions and obligations need discussion, but they need not be compressed into one sentence. The distinction keeps responsibility available for reasoned consideration while preventing a causal scheme from claiming to explain another person’s inner world completely or from requiring them to accept an evaluation chosen before their circumstances were heard.

IX. A useful explanation is bounded by its task

Our hypothetical example cannot inventory every cause in the world, nor does every decision need that inventory. We may answer a manual-saving condition fairly precisely without knowing every alternative route. We may find an individual event's history unsettled while selecting an acceptable organisational step. Sufficiency for one result must not transfer to another. An explanation useful for restoring access need not describe the record's history; that history does not replace content checking or establish significance for a reader. Each additional result requires its own question and grounds rather than inheriting confirmation from the previous one.

Multiple causation reveals three directions. Joint conditions specify what combines within a selected route. Alternative routes indicate other ways to produce the same defined result. Different "why" questions clarify whether we explain occurrence, construction, or purpose. These directions should not be summed into one cause count. Each needs appropriate information and boundaries. Historical sources support the distinction, but their authority does not establish an actual subject's conditions. Those must be investigated separately if a scheme stipulated for this article is to be applied beyond the hypothetical case in which its rules were openly supplied.

A small next step may clarify the result, check a condition, ask about an accepted obligation, or separate two questions. Everyone need not first adopt one final account. A bounded explanation can remain revisable; new information about another route or an omitted condition changes the corresponding part. This is the article's proposal about proportionate work, not an established educational or psychological technology. It promises neither to eliminate conflict nor to change behaviour or ensure the desired result of a shared task. Readers can choose the clarification relevant to their question without treating it as an obligation to analyse every surrounding detail.

One condition can be important, last, changeable, or selected for a particular question without becoming the sole cause. Several conditions need not turn explanation into a refusal to choose or act. A clarified causal sentence states its result, justified relationships, and open boundary. We can respect a substantial contribution, acknowledge background, investigate alternatives, and discuss responsibility on appropriate grounds. A precise short answer remains available without being mistaken for all knowledge of an event. Missing information need not be replaced by the general word "multicausality," which is useful only when it clarifies the particular relationships under discussion.

What this means in practice

1. Choose an ordinary causal sentence about a hypothetical or small organisational task: “The press saved the record” or “The message delayed the meeting.” Specify the result and time. Does one verb combine saving, visibility, quality, and acceptance? Select one result separately. A personal conflict or consequential judgment about someone is unnecessary: the explanation’s structure can be examined through a calm conditional example without adding unknown facts merely to obtain a convenient conclusion or a simple cause label that the available information cannot yet support.

2. Name the proposed joint conditions for one route. Separate established information, toy-model stipulations, and unknowns. Then ask whether another route could produce the same result. A possible route should not be called operative without information about its availability at that moment. Distinguish a conspicuous final action, persistent background, and an alternative. Do not make every surrounding object a cause merely because it was nearby. Each proposed relationship needs grounds appropriate to the selected question, rather than acquiring a causal role through presence in the scene alone.

3. Identify the purpose of selecting a main condition: occurrence time, repair, construction, or evaluation. If a person is involved, note missing information about knowledge, available actions, and accepted obligations. A condition count establishes neither a contribution share nor equal responsibility. A substantial action can be acknowledged without becoming the complete cause; several conditions can be recognised without cancelling every obligation question. A toy example supplies no norm for evaluating an actual person, even when its inputs seem symmetric and its result is easy to describe in a compact table.

4. Write a bounded sentence: “For this result on this route, the relevant conditions are...; about another route, we currently know...” Select one proportionate next question, or stop if the record is sufficient. New information can revise the corresponding conclusion. The record is no established psychological or educational practice and guarantees no agreement. It makes the explanation’s subject and boundary visible; it may be shortened, adapted, or left without further steps while preserving a reader’s option to discuss the task differently. Its value does not require an exhaustive final account of everything surrounding the event.

Key quotation

> *“[...] the statement of the cause is incomplete [...]”*

John Stuart Mill, A System of Logic, III.5, §3. A checked subject-and-predicate clause with marked omissions. Its continuation qualifies incompleteness unless the conditions are introduced in some form. The context distinguishes a final completing step from an

assemblage and allows purpose-appropriate omissions. It does not demand an inventory of the entire world. Context.

Connections between traditions

Comparison	Working connection	Boundary
Mill, III.5, §3, final condition / Aristotle, Physics II.3, kinds of cause	One conspicuous step may not answer every question about a subject.	An assemblage of conditions and kinds of causal answer are different classifications, not one modern model.
Mill, III.10, §§1–2, alternative routes / Aristotle, II.5, an incidental purpose-related result	Specify whether the question concerns occurrence routes or the result's relationship to intention.	Multiple routes are not identical to chance in an ancient framework of purposes.
Mill, III.5, §3, background and negative conditions / Pearl, §3.2 and §3.4, stated context	Make retained conditions explicit.	Philosophical analysis and formal assumptions differ; model fit still needs grounds.
Mill, III.10, §1 / Pearl, §3.4	An alternative answer depends on specified routes and context.	A route list does not identify an outcome or establish model fit.
Mill, III.5, §3, a casting vote's selected responsibility / Aristotle, II.3, for the sake of	Name explanatory purpose separately from action purpose.	Selecting a condition for responsibility is not an action's final cause and establishes no contemporary blame norm.
Mill, III.8, §2, an indispensable part / Aristotle, II.3, source of change	A source of change should not quietly replace all relevant conditions.	A comparison method and a causal-answer type have different grounds; ancient classification establishes no modern completeness.

Original bounded comparisons, without a shared-doctrine, historical-borrowing or equal-responsibility claim.

Primary sources

• John Stuart Mill, A System of Logic, eighth edition, Harper & Brothers, 1882, original English. Complete III.5, §3; III.8, §2; III.10, §§1–2 read, with the specified selected III.8, §3 context. Historical medical and legal examples are not practical recommendations.

• Aristotle, Physics II, R. P. Hardie and R. K. Gaye's translation. Complete II.3–6 read during this task. Ancient classification and purpose framework are not a ready-made modern scientific model; Greek not checked.

• Judea Pearl, Causal inference in statistics: An overview, Statistics Surveys 3, 2009, 96–146, DOI 10.1214/09-SS057. Specified model/intervention definitions and complete §3.4 read; proofs and whole paper not reproduced. A primary methodological source for the author's approach.

Tags

multiple causation, cause, condition, result, event, joint conditions, alternative route, background, final action, persistent state, negative condition, model, scheme, access, data, saving, catalogue, purpose, source of change, Mill, Aristotle, Pearl, Method of Difference, indispensable part, responsibility, blame, contribution share, question scale, checking, explanatory limits

About the authors

Andrey Zarinsh is the author and founder of United Wisdom. He explores inner transformation, the unity of traditions, intercultural dialogue, and contemporary spiritual discipline. Instagram: @andrey.zarinsh.

Maria Evilkut is a co-author of United Wisdom. Alongside her research, she seeks to test these ideas in practice and observe how principles of unity and mutual understanding work in real life between people and cultures. Instagram: @ilkutki.