Evidence Status and Pathological Uncertainty

A Working Standard for War Contamination Information

Laboratory of Information Systems
Presented by Dmitry Nikolaenko
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Overview 2 · 15-minute presentation · English

1 Opening

Introduction · 0:00–0:55

Our starting point is an unresolved problem. We need to understand the long-term environmental consequences of war, yet the information available describes different places, different periods and different kinds of claim. The environmental process continues while we attempt to reconstruct it.

We therefore need to know why each important question remains uncertain. Is an observation missing? Is a source unreliable? Does our method answer the wrong question? Has access or discussion been restricted? Has the object itself changed?

This presentation establishes a working standard for addressing those questions. We preserve the origin and status of information, investigate the sources of uncertainty and identify the next action that could improve understanding. We also examine how a morphological approach can help us follow a developing process without forcing it into a fixed description.

2 The sources of uncertainty

Background · 0:55–1:50

We distinguish several sources of uncertainty because they require different responses. An empirical gap may call for sampling or archival work. An information problem may require tracing a statement to its origin. A methodological problem may require changing the question or adding another kind of observation.

Institutional conditions can also restrict what we are able to know. We may lack permission to enter a territory, access to a dataset or an opportunity to examine a disputed methodology. These restrictions must remain visible in the research record.

In the published abstract, pathological uncertainty describes a condition in which different sources and types of uncertainty accumulate and their origins disappear. Here we extend the working analysis to the methodological and institutional conditions that can sustain that condition. Naming them helps us choose a response.

3 Uncertainty in a developing object

Methods · 1:50–2:45

The developing object adds another dimension. We may know a site's condition at one date and remain uncertain about its subsequent trajectory. A historical source can be accurate about an earlier event while leaving later transport or exposure unresolved.

Persistent uncertainty is a normal condition of investigating such an object. It becomes pathological when our information system hides the changing scope of knowledge. We combine observations from different stages, remove their dates or present a result from one period as a permanent description.

The response must preserve both histories: the history of the environmental process and the history of our understanding. A revised interpretation may reflect better evidence, a changed object or both. The record should allow us to distinguish those possibilities and specify what a new observation could resolve.

4 The dioxin jazz of a changed environment

Background · 2:45–3:38

Massive wartime contamination can introduce a configuration that is new to the affected territory: particular quantities and distributions of substances, damaged environments and altered patterns of use. The subsequent trajectory depends on the conditions of that territory.

I describe this metaphorically as nature beginning its own dioxin jazz. The metaphor concerns a developing configuration whose full sequence has not been observed. It does not imply that dioxins never existed in nature. Natural processes can also produce them, and these compounds can persist for long periods.

The scientific question is how this particular contamination history develops through environmental relationships. The original release is one stage. Later conditions determine which pathways matter and what evidence we need. An initial inventory alone cannot answer every question about that continuing trajectory.

5 Morphology as a means of investigation

Methods · 3:38–4:27

A morphological approach examines the organisation of the developing process. Which condition follows another? Where does material become concentrated or redistributed? Which environments become connected? Which transition changes the practical question?

This approach can help reduce uncertainty by making the missing relationships explicit. We can compare sequences across cases and ask whether a recurring form predicts an observation in a new location. Differences in local conditions remain part of the comparison.

Morphology is a guide to investigation. A pattern that appears coherent in an information system still requires testing. Similar descriptions do not establish identical mechanisms.

The result is a more selective programme. We identify the transition requiring examination and observations that could challenge the proposed sequence.

6 Vietnamese archives as a practical example

Application · 4:27–5:16

The two publications on Vietnamese archives provide a concrete opportunity. The study of National Archives Center III introduces records on chemical-agent use and later investigation of consequences. The study of National Archives Center II identifies relevant Republic of Vietnam records, including materials concerning defoliation and recorded damage.

These collections add documentary perspectives that can be compared with other sources. They help us ask more precise questions about events, places, dates and the history of investigation.

We identify each record’s purpose, distinguish direct reporting from repetition and retain conflicts between accounts. Archival work can improve reconstruction and direct later investigation. It provides a route to reducing particular uncertainties without promising a complete account of every environmental consequence.

7 The limits of archival conclusions

Methods · 5:16–6:10

Consider an illustrative sequence. A document reports an operation at a named location. Another records crop damage. A later file discusses a suspected consequence. Together, they do not automatically establish a causal chain.

We must examine whether the records refer to the same place and period, whether one repeats another and whether the reported observations support the proposed connection. Translation and changes in place names can introduce further uncertainty.

A reconstruction of chemical use remains distinct from a measured environmental condition. Evidence of contamination remains distinct from evidence of a particular exposure or biological effect.

The information system must preserve these boundaries. The outcome may be a better location estimate, a corrected chronology or a specific field question. Those are substantive improvements even when later links remain unresolved.

8 The origin of each claim

Methods · 6:10–7:02

We retain a simple vocabulary for how a claim enters the analysis. Observed identifies a measurement or direct observation. Documented identifies a statement in a traceable document. Reconstructed identifies an account assembled from several sources. Inferred identifies a conclusion drawn through analysis. Predicted identifies an estimate of an unobserved condition.

These categories describe origin. They do not rank claims automatically from weak to strong. An observation may be mistaken, while a reconstruction may have substantial support.

The published abstract also names Verified. In the operational record, we place verification on a separate coordinate. This makes it possible to describe a reconstruction as partially checked or a prediction as awaiting field comparison. The record preserves how the claim was produced and what examination it has undergone.

9 Verification within stated limits

Methods · 7:02–7:51

Verification must state what was checked. Authenticating a document establishes its identity or origin. It does not independently verify every statement inside it. Repeating a measurement can test a result, but does not by itself establish the source of the measured substance.

The same discipline applies to scale. A result at one location cannot verify a conclusion about an entire region without additional justification. A historical finding cannot establish the current condition of a site.

We therefore record the verification procedure, outcome and limits. We also record the grounds for confidence. Confidence can be expressed qualitatively when numerical estimation is unjustified.

Another expert must be able to examine the assessment and identify evidence that could change it.

10 Source dependence and apparent confirmation

Methods · 7:51–8:43

Information volume can create false reassurance. Several documents may repeat one initial statement. Their number increases while their evidential origin remains the same. AI-assisted processing can multiply this error if the system treats each appearance as independent support.

We trace dependence between records and group repetitions. We retain contradictions instead of silently selecting the account that fits our hypothesis. We also separate missing information from evidence that an event did not occur.

An archive may omit an activity because the relevant record was never created, was lost or remains inaccessible. Their implications may remain unresolved.

The standard requires us to state the gap and its consequence for the claim. It prevents absence from becoming an unsupported conclusion through the convenience of a database field.

11 The question and the available method

Methods · 8:43–9:40

Methodological uncertainty concerns the relation between our question and the object. A precise method may answer a narrow question accurately while leaving the principal transformation unexplained. Accuracy within that narrow task does not establish the adequacy of the research design.

The soil protocol treats soil after war as a configurational object. It connects military effects with the territory's earlier history, changes in use and relationships with other systems. Chemical contamination is an important part of that configuration.

This gives us a direct test of our programme. Which relationships are included? Which are excluded? Could an excluded relationship change the conclusion?

We retain established methods where they answer the relevant question. We revise the programme when the object requires more. The boundary of an available method must remain distinguishable from the boundary of the investigated process.

12 Political decisions and material continuation

Methods · 9:40–10:32

War involves human decisions, but its environmental consequences develop through physical, chemical and biological processes. A political declaration of peace or recovery does not establish that those processes have ended.

If our questions remain confined to political responsibility, we leave the material trajectory insufficiently investigated. We need to examine what continues in the territory, through which relationships and under which conditions.

This does not mean that every possible consequence must occur. Environmental conditions and effective interventions can change the trajectory. Those changes also require observation.

The paper on political taboo examines how restrictions on questions and connections can obstruct this investigation. Its relevance here is operational: the information system must retain environmental questions even when the political account treats the event as closed.

13 Institutional limits to knowing

Methods · 10:32–11:27

Some uncertainty reflects the organisation of research. A group may be unable to obtain repeated access to a site. Relevant datasets may remain separate. A methodological proposal may receive no substantive examination.

We should describe the concrete mechanism and its consequences. What information is unavailable? Which test cannot be performed? Which question has been excluded from the programme? This makes the limitation available for analysis and distinguishes it from the inherent complexity of the object.

We do not need to assign a hidden motive to every participant. We do need to preserve documented restrictions, unanswered objections and their effects on investigation.

A blocked test remains a blocked test. Institutional acceptance cannot replace its result, and institutional rejection cannot perform its empirical work. The research record must keep that distinction clear.

14 The working evidence record

Methods · 11:27–12:16

For every significant claim, we preserve its formulation, source and origin. We record the relevant place and time, the method where available and the changes made during extraction or translation.

We then identify the uncertainty that matters to interpretation. We link supporting and contradictory information, record dependencies and specify the limits of any verification. Finally, we identify a next action: inspect a primary file, resolve a place name, compare an independent source, revise a hypothesis or conduct a field test.

Assessment changes while the original source remains preserved. The history explains revisions prompted by later evidence.

This record connects information management with a developing object. It keeps uncertainty visible and makes the next research decision reviewable.

15 The expert–AI system

Methods · 12:16–13:09

AI can assist with multilingual documents, candidate claim extraction and comparison across collections. It can help identify repetitions, locate possible contradictions and propose relationships for examination. The expert checks consequential sources and decides whether the proposed relationships are justified.

Automated processing must retain pointers to the source passage. Otherwise a larger processing capacity produces a larger body of claims that cannot be inspected. Extraction, reconstruction and acceptance remain distinguishable operations.

We design the system so that evidence records and their history survive changes of model. Improved capabilities can enter the workflow through documented evaluation. Source histories and accepted conclusions remain available for review across changes of model.

The durable element is the working standard. Tools can change while the basis of an adopted conclusion remains inspectable.

16 An open research architecture

Results · 13:09–14:03

The Scientific Recognition Architecture supplies the positive organisational alternative. Scientific Recognition here means making the object progressively recognisable through investigation. It does not mean approval by a scientific community.

The architecture keeps the object primary, allows research questions to change and records the development of uncertainty. It provides continuity while explanation remains incomplete. Our evidence standard and expert–AI workflow give this approach an information implementation.

Progress must be stated specifically. We have resolved a source dependence, narrowed a location, identified a missing transition or designed a test that can distinguish alternatives. Reducing one uncertainty may expose another. That can improve understanding rather than represent failure.

The architecture remains open to revision through use. Its value depends on whether it helps investigation follow the object and produce better grounded decisions.

18 Uncertainty as a research task

Key Takeaways · 14:03–15:00

We cannot promise complete certainty about the long-term consequences of war. We can organise inquiry so that uncertainty does not become an excuse for stopping, a hidden defect of the database or a convenient declaration that the problem has disappeared.

We preserve the evidence, state the limits of interpretation and investigate the developing process. Morphological comparison helps us recognise transitions and identify relationships that require testing. Archival work, field observations and conceptual revision address different parts of that task.

For each important unknown, we state why it remains unknown, what has already been established and which next action could change our understanding. The expert–AI system supports that work under explicit responsibility.

This is our working standard for war contamination information. Its purpose is improved understanding of the object and a more reliable basis for action.

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