AI-Assisted Hypothesis Generation

From Fragmented Manifestations to the Morphology of War Contamination

Laboratory of Military Ecotones

A problem that started the discussion

Conference preparation revealed a gap in substantive soil contributions

The expert brought the organisational observation into dialogue

The discussion developed possible institutional explanations

A published protocol preserved the conceptual development

The development of the question

Initial observation identifies something that requires explanation

A first hypothesis names a possible mechanism

Dialogue examines scope, alternatives and missing information

The revised hypothesis specifies a route to investigation

The dialogue changes hypothesis work

The expert adds context and corrects the formulation

AI proposes alternative structures and consequences

Each correction becomes the starting point of another round

The resulting hypothesis contains explicit conditions for testing

A changing environmental object

Military material enters an existing environmental system

Clearance and disposal can introduce further transformations

Water and sediment connect different places and periods

A hypothesis must specify the stage and conditions it describes

Fragmented manifestations

A soil result describes a sample at a particular place and time

An archive records a selected part of the material history

A water observation may reveal movement beyond the source

The hypothesis proposes relationships between these fragments

An illustrative contamination problem

Illustrative observation: an elevated concentration near a former military site

Candidate sources include military activity and later disposal

Industrial history and geological background remain alternatives

Sampling or interpretation errors also require examination

Competing predictions

A disposal hypothesis directs attention to documented handling locations

A geological hypothesis calls for appropriate background comparisons

A transport hypothesis requires a plausible pathway and chronology

The best next observation separates explanations

Hypotheses as working material

A formulation can change without ending the investigation

A rejected assumption remains part of the research record

Disciplinary methods examine particular relationships

The developing process determines the wider question

Controls within the dialogue

The expert asks for contradictions and competing explanations

Claims retain their sources and their status

Agreement within a conversation adds no independent evidence

The record preserves reasons for revision

The hypothesis record

The formulation states scope, time and proposed mechanism

Evidence and assumptions occupy separate fields

Alternatives have predicted and potentially refuting observations

The record identifies the next test and the responsible expert

Morphology of war contamination

Morphology concerns recurring forms and transitions of the process

Dispersal may precede collection and local concentration

Hazard removal may introduce another environmental condition

Comparison tests whether the proposed form recurs

Updating the developing hypothesis

A new observation may change the mechanism or its scope

Changed land use can alter the conditions of the proposed pathway

The revised record retains the previous formulation

Unavailable verification remains an explicit research task

The qualitative change in the standard

Hypothesis development becomes a sustained dialogue

Alternatives remain available throughout the investigation

Each revision makes assumptions and tests more explicit

Progress appears in a better question and a better investigation

Sources and working basis

Laboratory of Military Ecotones (2026). AI-Assisted Hypothesis Generation.
DOI 10.66659/bap6zf89

Nikolaenko (2026). Why Were There No Papers on War-Affected Soil? Protocol v1.0.
DOI 10.66659/rpharj84

A hypothesis that leads to investigation

The expert brings the object and the unresolved problem

Dialogue develops alternative mechanisms and their consequences

The record makes revisions and verification requirements explicit

The next investigation tests the relationships that matter