Field Verification in the Scientist–AI System

From Pathological Uncertainty to Quality Data

Laboratory of Military Ecotones

Overview 2 / Artificial Intelligence and Research on the Consequences of War / 15 minutes

Theory and empirical correction

Every site, depth and date reflects assumptions about the object

Military ecotones provide an explicit framework for our investigation

Competing explanations require observations that distinguish them

Results can change the research contour and the theory

Uncertainty and the next observation

An unknown source and an uncertain pathway need different tests

Each gap requires a question and a proposed corrective observation

Some questions need archives, others need fieldwork or experiments

A convenient measurement may leave the original question unanswered

Archives and site priorities

Vietnamese archives offer complementary historical evidence

Candidate sites retain their documentary basis and location uncertainty

Historical reconstruction includes later changes to the territory

An archival reference justifies investigation of present conditions

Soil as a changing configuration

The soil profile connects territorial history with present conditions

The hypothesis determines which relationships require observation

Water connections and buried material require different designs

Later observations update an open profile of the military ecotone

Site selection and competing explanations

Access determines feasibility, while the question determines relevance

Source areas, transport routes and receiving areas have different roles

Comparison sites require documented histories

Incomplete coverage limits the conclusions we can draw

Repeated observations and experiments

Observation timing follows the proposed process

Reference stations and verification sites serve different purposes

Pilot studies assess methods before a larger programme begins

Experiments test mechanisms under stated conditions

The record behind each result

Sample identity and location include uncertainty

Date, depth or matrix and collection method remain traceable

Handling, analysis and quality controls stay connected to the sample

Analytical accuracy and interpretive relevance require separate checks

Non-detection and interpretive limits

A non-detection retains the detection limit and sampling conditions

A local result cannot establish absence across a territory

Detection alone does not establish a wartime source

Raw records and revisions allow criticism and reanalysis

The pathway from source to possible harm

The research framework connects source, release and distribution

Exposure and biological outcomes require additional evidence

Each transition creates a distinct research question

The full pathway remains a programme for investigation

Exposure and later health outcomes

Fieldwork examines specified environmental connections

Exposure and health research need additional designs and partners

Direct prenatal exposure differs from proposed effects in later generations

Alternative explanations and missing periods remain visible

AI across the research programme

AI assists multilingual processing and comparison of documents

Provisional spatial reconstructions preserve uncertain locations

Competing hypotheses help identify useful observations

New data can reveal assumptions that require reconsideration

The next useful observation

The next test should change our assessment of competing explanations

Information value, feasibility and cost inform the choice

Physical evidence requires observations and measurements

Experts check consequential interpretations and authorise claims

Organisation and continuity

The laboratory charter connects fieldwork, analysis and interpretation

A shared record links documents, samples, results and decisions

Assigned responsibilities preserve continuity between campaigns

A justified pilot provides a concrete first step

Sources 1

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Field verification and quality data

Theory guides a justified field design

Documented results can confirm, reject or reformulate a hypothesis

AI helps organise inquiry and identify the next useful observation

Quality data allow the object to correct our account of it