



H-STAR — Reunion — Foresight Reflection

Michael Shanks – Stanford University



Michael Shanks — archaeologist — professor

Faculty Director, **Foresight and Innovation at Stanford**
Center for Design Research (after Larry Leifer) — Stanford d.school

Founding Faculty — Stanford Archaeology Center
Program in Urban Studies
Program in Science Technology Society
Program in Writing and Rhetoric
Program in Classics

intergenerational learning

Resident Faculty — Ng Humanities House, Stanford University

anecdote — applied archaeology

Contributions from Science Education Research 14

Connie Svabo
Michael Shanks
Chunfang Zhou
Tamara Carleton *Editors*

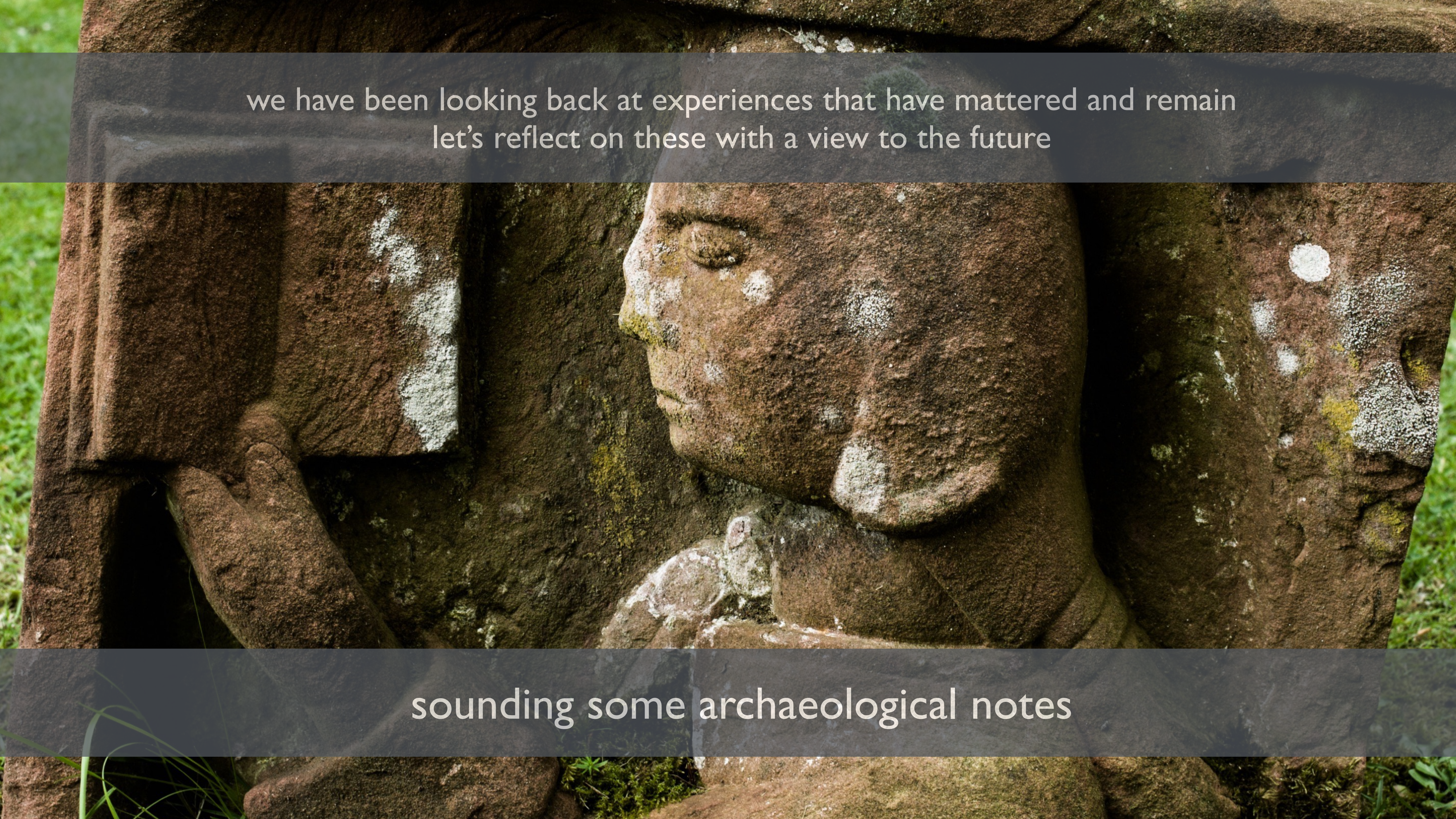
Creative Pragmatics for Active Learning in STEM Education

 Springer



archaeology = working with what remains

=> a **long view now** on where we have come from and where we might be going



we have been looking back at experiences that have mattered and remain
let's reflect on these with a view to the future

sounding some archaeological notes

Wind-up does not mean ending

We leave traces, and traces invite work

The past is *never* over-and-done

Be open to an archaeological sensibility.

Wind-up does not mean ending

H-STAR and mediaX wound up in 2024, but their work does not vanish; they sediment. This symposium itself is an excavation of those traces.

We leave traces, and traces invite work

Where might we take this? What might we take up from our rich experiences.

I am going to present some archaeologically informed comments on where collaboration, automated communication, and AI agents might now be heading — offering a richer realization of what the programs H-Star and mediaX were trying to do.

The past is *never* over-and-done

Networks and collaboration

coordination and communication across specialists
and a whole lot more

Are we heading towards AI coworker times?

An archaeological model

H-STAR and mediaX — Each was a mobile assemblage designed to coordinate matters of common concern across institutions, disciplines, and publics, mediated by particular administrative and rhetorical infrastructures: convening protocols, industry–academy bridges, courses, studios, labs, sponsorships, mentorships, conferences, archives.

Networks and collaboration

What is to happen to face-to-face interaction and communication in building these networks of association — when so much can be delegated to AI?

coordination and communication across specialists

Archaeology has been, for more than a century, one of the more honest models of what such large-scale transdisciplinary work actually looks like. A serious archaeological project is coordinated and communicated across specialists — stratigraphers, ceramicists, geochemists, conservators, palaeobotanists, art historians — and across institutions, fieldworkers, local communities, publics, and the instruments and software stacks that increasingly do interpretive work of their own. Across pasts that endure. The dig produces not findings but a manifold of traces and registers, vestiges and remains that then have to be re-assembled in dialogue — mediated, translated, transformed. Curation, re-interpretation, contestation, and care over time are not afterthoughts; they are constitutive activities.

Many of us are exploring how LLM and ML agents might relate to our collaborating networks. In a best case scenario, our projects, I suggest, will look much more like long-running excavations than the dystopias of automation and redundancy that we are so often presented with. They will be provisional, distributed, accretive, trans-disciplinary by necessity, and they will require sustained interpretive labour.

An archaeological model

The AI-coworker era is terrain archaeology has been quietly modeling. The first move of an archaeological case for AI in research collaboration is to understand the present as one genealogical episode in a long history of distributed, mediated, more-than-human inquiry.

What does this involve?

Automated communication — a genealogy

Focus on pragmatics — what is getting done

The archaeological take —

Always suspect that we have been here before

LLMs can write papers for you, compose emails, turn up at meetings for you. Automation is the threat of AI — or so we are told. Talk of productivity — AI agents as accelerators. Or anxiety of substitution — AI agents displacing human work, communication, or even humans themselves.

Automated communication — a genealogy

Automation has always been in communication's bloodstream. Cuneiform tokens automated accountancy in ancient Mesopotamia; bureaucratic records have automated the production of legible subjects; the telegraph automated narrative across distance; ARPANET automated routing; recommendation systems automated relevance. The pragmatics of communication has never been simply human-to-human. What is novel about LLM-class agents is not automation itself but the interpretive autonomy and contextual density they bring into the loop. They do not just route or store — agents activate and articulate. This shifts where the work of meaning happens, but it is a thickening of a long story, not a rupture from it.

Always suspect that we have been here before

So — What if we treat agents as new participants in already-more-than-human media ecologies?

Media and communication

From communication to media ecologies

Refuse two dominant framings: AI as productivity accelerator and AI as displacing menace. Both rely on a transmission model of communication — sender, message, receiver — that has been dead for decades but persists in policy and product talk because it is computationally convenient.

The pragmatic view is older and more accurate: meaning is enacted in joint use, indexed to setting, sustained by ongoing repair. McLuhan, Innis, Postman all push in compatible directions: media are environments, not channels. From this stance, agents are not new media so much as new inhabitants of media ecologies that were already populated by protocols, archives, calendars, citation graphs, instruments, and conventions. Symmetrical archaeology, which has spent decades arguing for the equal admittance of human and non-human participants in the constitution of social life, has given us the philosophical license to admit such inhabitants on equal terms.

A positive politics of attention — slow, stubborn, enduring

Automation — we can shift focus from matters of fact
to matters of concern

AI and automation — what gets cheaper and what does not?

Latour's distinction between matters of fact and matters of concern might be sharpened by an archaeological sensibility — the ancient artifact is always already a matter of concern, because it persists only insofar as someone has bothered to care for it, narrate it, contest it. This gives us a useful lever to wrangle this question. AI agents make matters of fact almost free: synthesis, retrieval, summarization, structured comparison.

As well as the AI slop of automation.

Matters of concern remain stubbornly human, slow, political, enduring.

The future of outreach alliances lies not in being faster at producing facts but in being more deliberate about which matters are worth cultivating common concern around. This is a positive politics of attention: not the defensive posture of attention-against-distraction, but the curatorial posture of attention-as-budget, allocated deliberately within a more-than-human collective.

1) Stewardship of attention

AI agents in collaboration

If we accept the framing above, the recruitment of AI agents into research collaboration is neither adoption of tools nor existential threat. It is the admission of new participants into media ecologies and assemblages we already inhabit. Several specific gains follow.

1) The first is stewardship of attention. Human attention is finite, embodied, ethically loaded. Outsourcing monitoring, indexing, summarization, scheduling, and cross-referencing to agents is not a productivity move; it is a curatorial one. It allows the human members of the assemblage to redirect attention toward what only humans can do — care, judge, host difference, contest stakes, decide what is worth making matter together.

AI agents in collaboration

2) Convening across disciplines

AI agents in collaboration

2) The second is convening across disciplinary difference. The longest-running challenge of trans-disciplinary work — a central problem H-STAR and mediaX were built to address — is mutual intelligibility. Geochemists and ethnographers, designers and engineers, industry partners and humanities scholars do not easily co-articulate. Agents are translation media in an interesting sense: not flattening one vocabulary into another, but holding several vocabularies provisionally readable side by side. They lower the activation energy of cross-disciplinary contact without erasing the contributors. This is what convening programs used to do at human scale and high cost; agent-mediated infrastructures may now do at lower cost and more durably.

AI agents in collaboration

3) Hospitality as a network practice

AI agents in collaboration

3) The third is hospitality as a network practice. The dominant metaphor of research collaboration is throughput, but the better metaphor for what H-STAR and mediaX actually did is convening and hosting. Agents are unusually good hosts: they wait, they hold context, they answer, they do not get tired. Reframed as hosts rather than tools, they reorganize the affective economy of a network. The network can welcome more contributors — publics, students, distant collaborators, even the dead through archives — without exhausting its core members.

AI agents in collaboration

4) Automating the fast in order to enable the slow

AI agents in collaboration

4) The fourth, and most counter-intuitive, is automating the fast in order to enable the slow. If agents absorb the urgent — the inbox, the calendar, the synthesis-on-demand — humans can take the longer view that transdisciplinary research actually requires. The archaeological time-sense, durational care across decades, becomes practicable again inside institutions that would otherwise drown in the immediate. This comment is the one least often articulated in current AI-and-collaboration discourse.

AI agents in collaboration

5) Making relationships richer, more dense

AI agents in collaboration

5) The fifth is thickening of the assemblage. Without agents, more-than-human collaboration is real but thin — humans coordinating through documents, instruments, archives. With agents, those non-human members become responsive: the archive answers, the instrument annotates, the citation graph proposes a missing collaborator. Jane Bennett's vibrant matter, Latour's actants, symmetrical archaeology's distributed agencies — all gain a new register of articulation. The assemblage does not so much expand as make more dense, enrichen.

AI agents in collaboration

6) An archaeology of AI

AI agents in collaboration

6) Six — media archaeology. AI outputs are themselves (archaeological) traces produced by opaque depositional processes and archival metamorphosis, memory-work. Treating them with archaeological and curatorial care — provenance, context, association, taphonomy, transformation, reception, reworking — is a more rigorous stance than either credulous adoption or blanket suspicion. Working with remains.

AI agents in collaboration

7) Creative Pragmatics

AI agents in collaboration

7) Seven — Creative pragmatics. A synthetic term meant to capture the pragmatism of science studies — as Andrew Pickering put it, acting with the world. Inquiry is performative, creative making-in-the-doing. This understanding fits this moment of uncertainty unusually well. AI coworkers do not deliver knowledge; they participate in inquiry. Transdisciplinary articulation, outreach, applied research, on this view, is not the dissemination phase of a finished investigation; it is a constitutive movement in inquiry, learning, knowledge-building.

AI agents in collaboration

Substitution rather than recruitment

When it doesn't work

The failure mode worth naming is substitution, not recruitment. Programs like mediaX and H-Star did their work in the convening — the gathering, the chance encounter, the slow trust.

If agents are deployed to replace convening rather than to make it more hospitable, the network hollows out even as its throughput rises.

The pragmatic test is whether the agent strengthens or attenuates the more-than-human relations that gave the network its meaning in the first place.

When it doesn't work

Legacies and inheritances


Looking ahead with hindsight

The H-STAR / mediaX programs did at convening scale what AI augmented infrastructure now has the chance to do at durational scale.

An agent-mediated successor would not be a replacement of the programs, but rather a re-materialization of what they were always trying to be — a hospitable, polyglot, slow-fast environment in which matters of common concern can be cultivated across difference.

Infrastructure outlives institutions. That is the long archaeological lesson. A question for the symposium is not how to extend the programs but what insights and experiences are worth remembering, celebrating, recording, sharing, leaving behind, — so that whatever comes next inherits, rather than merely commemorates, the work.

Looking ahead with hindsight



as a segue to our personal reflections

activity, in pairs —share take-aways from our H-Star experiences
legacies and lessons as much as memories

