

ON WORKING WITH AI: REASONED RECOMMENDATIONS



Orientation – some recent personal anecdotes and thoughts about AI

In May our reunion of H-Star academic collaboration between Stanford and Denmark prompted me to reflect upon AI in research collaboration [\[Link\]](#).

A new white paper from Stanford's Accelerator for Learning – *Responsible Assessment in the AI Era* – prompted me to comment that we already have tried-and-tested pedagogical models that can embrace AI in learning [\[Link\]](#).

In June I made a trip to Germany to explore with Sabine Remdisch our Trans-nation Co-creation project [\[Link\]](#) in a series of visits to centers of AI development – including the new AI campuses at Heilbronn, the Rittal works at Haiger, European Factory of the year 2025, the Airbus plant in Hamburg, and Sabine's project with IKEA, modeling the AI-enhanced office of the future [\[Link\]](#).

A new report from MIT's Ad Hoc Committee on *AI Use in Teaching, Learning, and Research Training* [Link] is an excellent and progressive statement and represents, I suggest, a maturing of policy about the uses of AI in the academy and beyond.

As Gabriella Giannachi and I work on our new book *Archaeologies of AI* (see below), I have taken a few moments to compose this reasoned reflection on working with AI that summarizes what I am learning.

Recommendation: enthusiastically embrace work with artificial intelligence – openly, in research, writing, creating, designing, learning, teaching. Experiment, test capacities to limits – mindfully, critically, responsibly.

And don't defer to the caricatures of technology as demon / technology as savior.

This statement explains the understanding and reasoning behind this recommendation. Many dealings with AI in the academy are policy-oriented on administrative regulation, behavioral norms, the management of student and instructor experience – under an agenda to maintain or restore a supposedly healthy chain of reading, attendance, attention, unaided work, deadlines, testing, and supervision that existed before the pandemic and generative AI. Instead, one might focus on the character of knowledge and learning itself, treating the roll out of AI as an opportunity to rethink assignments, modes of participation, collaboration, and yes, the nature of learning itself.

AI is not a tool kit

A common way of speaking about AI is as a new set of tools, powerful and unpredictable in their agency and impact, that raise questions of regulation in their use and application, now and in the future. This underestimates what is happening.

I suggest we put to one side the metaphor of AI as a tool or tool kit.

Why? AI, and all that is implicated – machine learning, chatbots, artificial general intelligence, agency, data manipulation, task and project management, is much about knowledge and know-how. What is known, how that is generated, and how applied. A standard model of building knowledge is that it is fundamentally about perception and cognition, human minds acting upon engagements with the world,

learning and discovering how it works, and organizing and sharing the insights, the knowledge. Tools and instruments can help – augmenting perception (microscopes, telescopes), measuring (meters and gauges), communicating (writing, transmitting information), and much more. Here tools are something a mind-in-quest-of-knowledge picks up and puts down.

Building knowledge

But knowledge has never been made this way. Knowledge is not discovered by a detached observer contemplating a world held at arm's length. It is made: built through engaged, situated work with materials, instruments, archives, laboratories, field sites, institutions, colleagues, funding, publication – a whole heterogeneous ecology of participants working with and on one another. This is one of the oldest and best-established findings we have – from the philosophies of pragmatism, from epistemology, from the sociology and history of knowledge, from decades of close empirical study of how science and scholarship actually work. Truth itself is fabricated, in the old and honorable sense of the word: *verum ipsum factum* – the true is precisely what is made. And the maker is never outside the making. We are part of what we seek to understand; the knower is entangled with the known, and this entanglement is not a contamination of knowledge but its very condition. Building knowledge has always been project team work: assembling resources, coordinating different kinds of agency, negotiating with things and people that resist and surprise.

AI enters this ecology not as another tool on the knowledge-worker's bench but as a new kind of participant – one that generates, responds, proposes, errs, and provokes. Working with it is what Andrew Pickering calls a mangle of practice: an open-ended back-and-forth in which human intention and the agency of things accommodate one another, and something neither could produce alone takes shape. This is not a metaphor imported to flatter the technology. It is how experimental science, fieldwork, design, and scholarship have always proceeded. We act with the world, not upon it. AI makes this old truth newly visible – and newly consequential.

Wrong-headed policies

Most AI policies now circulating in the academy rest on a very different and much more fragile picture: the solitary author, the individual mind whose skills,

competencies, genius, and flaws are the sole source of the work, and whose unaided output is what (academic) examination and credential certify.

(Consider the concept of plagiarism in the academy and intellectual property. One must cite the originating mind behind an idea and not appropriate without compensation/acknowledgement what is conceived as the property of that originating mind. In an unresolved tension, at the same time knowledge is produced in institutions and communities of learning, where sharing, copying, collaboration, even theft of ideas and findings, are essential.)

In such a model of learning and knowledge, AI can only appear as a foreign, alien element in what should be pure – the mind working on the world to figure out what is going on. It is commonplace to hold that generative AI is at best a way to augment, speed up, automate, substitute for what are essentially individual competencies (analyzing, assessing, authoring); at worst AI is a way of faking what individuals cannot genuinely do themselves, because they are deferring to the tool kit.

This model of building knowledge was always a fiction. No scholar has ever worked unaided; no author has ever created alone; the individual talent has always been sustained by collaborators, editors, traditions, instruments, and institutions that the title pages of books and journal articles typically omit. And learning has never been well-described as the acquisition of a body of knowledge in the mind of the learner, transmitted by an instructor. Policies built on this fiction are defending an authenticity that never existed, and this is why they misread the present moment so badly: they experience the visibility of collaboration as a crisis of fraud.

Trust and participation

This misreading has consequences, and we should voice objection. A policy that begins from suspicion ends in policing. Across the university sector we now see the apparatuses of surveillance and policing assembling: detection software, proctoring, overseeing behavior and “effort,” rituals of exposure and confession in which students must clear themselves of the presumption of fakery, and the steady conversion of pedagogical questions into questions of compliance with administrative norms. Whatever this is, it is not education. It corrodes the one condition that learning cannot do without – the collaborative trust between teacher

and student in participatory-learning that makes real intellectual risk-taking possible – and it teaches the wrong lesson thoroughly: that what matters is not the work but the appearance of having followed the rules.

Nor should rigor be equated with the absence of tools. Rigor lives in the work – in the seriousness of the problems engaged, the discipline of the craft, the honesty of the judgement – not in the conditions imposed around it. Where education has become hollow, a credential acquired while the experience of learning is abbreviated or skipped, the remedy is not to police the hollowness but to redesign the experience until it is worth having. That is harder work than enforcement. It is the work.

From the understanding set out here follow some specific commitments and recommendations.

- **Engage** AI as a collaborator whose contributions, like those of any collaborator, should be tested, questioned, and judged.
- **Transparency.** Disclose AI involvement in work, acknowledge any substantial intellectual debt. Open up the black-box of research, learning, authoring.
- Remain **answerable** for collaborative project work: within an ecology of many agencies, accountability is precisely the human part, and it cannot be delegated.

In teaching, the same understanding applies.

Invite students to work with AI transparently and critically, and to treat that work as itself an object of inquiry: what did this exchange produce, what did it foreclose, where did the machine's proposals need resisting, what was learned in the resistance? Some capacities are built only through unmediated engagement with materials and difficulty, and parts of our work will deliberately set the machines aside – always with the reasons given, because a rule without a rationale teaches only compliance. The larger aim is the formation of practitioners who can navigate

a knowledge ecology that now includes these agencies – with judgement, honesty, and skill.

Knowledge ecologies

Such recommendations reach well beyond the academy.

Responsible AI use also requires attention to the wider ecology from which AI systems emerge.

These systems are sustained by data, energy, water, computational infrastructures, institutional investment, human labor, intellectual property arrangements, and corporate priorities. They involve questions of political economy, of access, privacy, ownership, bias, environmental cost, and dependency.

Critical competence therefore means asking not only whether an output is useful or correct, but also: What system produced it? What assumptions and exclusions shape it? What information am I providing to it? Whose work and knowledge sustain it? What dependencies am I creating? What consequences extend beyond the immediate task?

Such questions are not external additions to learning. They are part of understanding the socio-technical conditions under which contemporary knowledge is made.

The capacities at stake here – working openly with many kinds of collaborator, human and otherwise; testing what one is given rather than accepting or forbidding it; matching the mode of work to the situation at hand; remaining answerable for the whole – are the working core of creative and effective practice everywhere: in design studios and research labs, in business and enterprise, in civic life and community governance. Every one of these is an ecology of knowledge and action in its own right, with its own materials, constraints, and stakes. What I describe here is not a compliance regime for coursework. It is a model of working well, sensitive to context, in a world where the company we think and work with has grown.

This understanding is not mine alone, far from it. It draws on long traditions of thought about how we relate to the world and build knowledge within it. and is a

widening community of educators, researchers, and institutions committed to integrating AI thoughtfully into learning and research rather than policing it. This is exemplified most recently by MIT's Institute-wide report on AI in education (2026), which rejects surveillance and detection, insists that every AI policy carry a pedagogical rationale, and calls for the renewal of experiential, project-based, socially embedded learning: augmentation, not automation [Link].

The educational case for project-based studio-based active and participatory learning is made in the book *Creative Pragmatics for Active Learning in STEM Education*, edited with Connie Svabo, Tamara Carleton, Chunfang Zhou (2025) [Link].



The company gathered around the instrument. Joseph Wright of Derby, *A Philosopher Giving a Lecture on the Orrery* (1766) – candlelight, faces of all ages leaning in around a machine that models the cosmos, wonder rather than dread. It is public domain, endlessly reproducible, and its subject is literally an epistemic ecology: knowledge happening *between* people and a device.

Archaeologies of AI: archives, robots and the ecology of intelligence

Such an argument about AI is developed at length in a book I am now completing with Gabriella Giannachi, *Archaeologies of AI: archives, robots and the ecology of intelligence*. We ground an argument for embracing and experimenting with these new companions in the long-term story of human ecologies – the hundred-thousand-year record of a species that has never thought alone, and has always made itself through what it makes.

Archaeologies of AI argues that artificial intelligence is best understood as archival intelligence: the automation and scaling of operations – inscription, classification, summarization, retrieval, delegation – that societies have performed within infrastructures of memory for five thousand years. Against the two framings that dominate current debate – AI as unprecedented rupture on a path to superintelligence, and AI as a narrowly technical matter of engineering and governance – we offer a third: an archaeology of the present, tracking continuities and discontinuities in how knowledge has been stored, staged, delegated, owned, performed.

Our approach is distinctive in combining science and technology studies (knowledge as performance) with archival theory, archaeology, and narratology. We show that whenever societies address what is now called AI, they draw upon a durable repertoire: personae (the custodian, the reader of signs, the oracle, the hidden operator), plots (the runaway, the counterfeit, the animating word, threat and subterfuge), and settings, architectures, from the Mesopotamian temple store to the data center. This mythology is not commentary on the technology; it guides action – pricing companies, drafting regulation, scripting fear and desire. What is genuinely new about AI lies not in intelligence, which was always distributed and performed rather than possessed, but in political economy: scale, speed, capitalization, and planetary substrate. The archive is the past captured; capitalization is the future pledged; contemporary AI stands where the two meet.

The message is practical, and distinctively so. Intelligence, on our account, is an ecology (oiko-logy – the management of habitat): performed across bodies, tools, institutions, archives, and environments, in a coevolution of humans and technics as old as knapped stone, fired clay. The ecology of intelligence names the distributed milieu – bodies, tools, institutions, archives, environments – within

which knowing is performed; ecology is thus an aspect of the performance of knowledge, the frame we take from science and technology studies.

“Artificial” intelligence is not the opposite of the living but a new participant in life’s oldest habit(at) of composing novelty through partnership – sympoiesis. Taking symbiosis seriously – after Margulis and Bateson, for whom the unit of survival is organism-plus-environment – dissolves the binaries of technology and biology, machine and milieu, and with them the fantasy of the autonomous machine. In their place we offer working instruments: responsible embodiment, a diagnostic locating responsibility across the material, labor, perceptual, ecological, archival, and temporal dimensions of distributed systems, including accountability for the futures a system pledges; and a design orientation – acting-with our machines, building commons of archive and memory, labor and energy. The horizon is sur-vival: living-on together, the shared maintenance of human and machinic intelligence within the fragile living systems on which both depend.



Working with clay. An Egyptian statue [Link] confabulated as the clay Golem. The word traditionally written on the forehead is emet (אמת), the Hebrew word for “truth”. According to Jewish folklore, particularly the famous legend of the Golem of Prague, writing this word on the clay creature’s head brought it to life. To deactivate, one would erase the first letter (aleph), changing the word to met (מת), which means “dead”.

NOLAN’S ODYSSEY (3) – THE COLLAPSE OF CIVILIZATION AND THE SHAPE OF HISTORY



Performing the archive – a study in theatre/archaeology

In July I posted a response to Nolan’s Odyssey [Link] – an old story, I argued, but not the one that was being talked about. The movie faithfully restages not Homer but a nineteenth-century grand narrative of civilization and its fall. A month of

reviews and a billion dollars later, and I'm the only one to have questioned the source and validity of this metanarrative. This post restates my case plainly, and then investigates the media machinery that has installed and sustained this understanding of the shape of history – the genre of “big history”, rolled out by academics since the eighteenth century, and now a fundamental component of popular cultural ideologies. Again I flag the question that all the reviews and commentary keep burying: not why civilizations fall, but how any world holds together at all.

The question nobody has asked

The reception of Nolan's *Odyssey* is now an archive in its own right: I have tracked four hundred and eighty-nine reviews, a wave of extended essays, a translator's feud, a celebration of interest in Classics, a casting conflict, even a geopolitical incident. Points of debate: fidelity (is this Homer?); accuracy (Corinthian helmets, a masked Agamemnon); casting; the missing gods; the constrained women; the ethics of the shoot; Nolan as auteur interested in certain psychological configurations of masculinity. Some of these debates matter; I contributed to several in my July post – on the disenchanted cosmos, on the dual role of actor Nyong'o, on media spectacle fighting the movie's message – and I stand by all of it. I will not rehearse those arguments here; they are on this site already [Link].

But run through that whole archive looking for one particular question and you will come up empty. The movie's scaffold – a story of the fall of civilization – has been named by nearly everyone. A film journalist saw in week one that “the collapse of civilization comes from within, and from the corruption and erosion of literal civility.” *Rolling Stone* called the movie “a powerful warning about the dangers of civilizational collapse for our time.” A classical archaeologist praised Nolan for marrying literary tradition to “the historical reality of the Bronze Age collapse.” The Hudson Institute celebrated “a defense of Western civilization”; the essayists of the center-left read the third act as an indictment of contemporary imperial decline; Ezra Klein found a civics lesson [Link].

Named, endorsed, deplored, weaponized – across a month of debate and through every position on the political compass, this framing, this plot, this scaffold has never once been treated as what needs examination.

Civilization = stability, threatened by moral failure, ending in fall: nowhere is

this equation questioned.

The description is unanimous, and I suggest that the unanimity is telling. When the same narrative frame can host the defense-of-the-West celebrant, the anti-imperial essayist, and the civics columnist simultaneously – three incompatible politics in one structure – ideological work is being done by the narrative scaffold, not by the tenants.

So let me restate what the frame is, where it comes from, and why it deserves the examination it has not received. And then let me go somewhere my July post did not: to the question of how a two-hundred-year-old historiography came to be so completely installed in a modern audience that a filmmaker could build a billion-dollar movie on it without a word of explanation – and no reviewer would think to ask about it.

The old story

The movie's scaffold is a grand narrative, a metanarrative, and an old one: the fall of civilization. Nolan's *Odyssey* moves through a world in which Zeus's law of hospitality – that strangers be offered welcome – is being abandoned. This *xenia* is the basic law of "civilization" in the movie's moral economy, the root of social and cultural stability; when one can no longer trust it to be universally respected, the way lies open to violence and chaos. The episodes are serial manifestations of this fall from social grace – the sack of Troy; Polyphemos the monstrous host; the Laestrygonians massacring visitors from the sea; the suitors devouring their host's stores. The drama registers the fall in the story of Odysseus himself, a reverse Bildungsroman in which the hero is educated downward into the ruin of an old way of life.

Note the shape: a stable order, secured by a universal ethics, held in trust by a fellowship of men, threatened by mobile others, strangers not like them, lost when the men who should know better abandon the values that bind. That shape has a birth certificate. The concept of civilization in this sense – civility, civil society, set against barbarism and savagery – took its decisive form in roughly 1750–1830; the second half of the nineteenth century institutionalized it, diffused it globally, and put it to work in the service of colonial governance. Its narrative arc – stable civilization undone by the ethical failure of its own men and loss of civic virtue – is the trope Edward Gibbon made canonical in *The History of the*

Decline and Fall of the Roman Empire published 1776–1788. Neither anachronistic nor woke, Nolan's movie is a key trope of colonial-imperialist ideology transcribed into Hollywood spectacle.



Thomas Cole, *The Course of Empire: Destruction* (1836, New-York Historical Society). The Universal Collapse Narrative as a painting – the wheel of civilization rendered in five canvases, American anxiety dressed in classical drag, ruin as sublime entertainment decades before Maspero coined the term “Sea Peoples.”

The movie maps this narrative scaffold onto an archaeological setting: the “collapse” of the eastern Mediterranean world at the end of the Bronze Age. Nolan has Odysseus declare, after Troy, that the age of bronze is ending – a character inside the thirteenth century BCE announcing his own archaeological periodization, naming his civilization as a bounded, datable, terminable thing. And the sea peoples, invoked throughout, arrive as the harbinger of the end of times: anonymous, armed, seaborne. The popular source is not in doubt. One reviewer would “bet money Nolan read Cline’s book” – Eric Cline’s *1177 B.C.: The Year Civilization Collapsed*. A journalist’s speculation, but a telling one, because it shows how completely the collapse story now circulates as received truth: an archive to be performed rather than a question to be asked.

Yes, the movie complicates its own allegory. The third act reveals that the “people from the sea” are the Greeks themselves – the victorious coalition, brutalized by its own war, together with those displaced by Troy’s fall. We are the sea people, the movie all but states, and some have celebrated this twist as the film’s redemptive political move. I take the point; it is a better movie for it. But the twist confirms rather than escapes the old story. Moral failure of the men who should have known better; civilization undone by the abandonment of its own values – the villain is swapped (outsider strangers to insiders), but the historiography stays. America-as-fraying-empire is not a subversion of Gibbon’s narrative of decline. And a late revelatory twist does not un-show two hours of images of civilization threatened by armed arrival by sea, in a mediascape where such imagery has a settled political charge. The conservative right, receiving the movie gratefully as “anti-mass-migration propaganda,” understood the iconography perfectly well. Iconography works below the level of plot.

There is another piece of evidence that the scaffold is modern, and it comes from the movie’s most prominent admirer. Ezra Klein, celebrating the film in the New York Times, concedes (“as a horde of classicists have pointed out”), that the movie’s Zeus’s-law is not Homeric *xenia* at all, but a Judaeo-Christian ethic [Link]. Homeric *xenia* is narrower, prudential, enchanted: the stranger might be a god. What the movie preaches instead, Klein documents chapter and verse – Leviticus, Hillel, Matthew – is “the core of Judeo-Christian ethics,” which Nolan has “smuggled” into the poem; Klein calls the smuggling Nolan’s “finest trick,” and applauds. Note what has happened: Klein the celebrant documents the import, names it smuggling, and celebrates. And the case goes deeper than he allows, for “Judaeo-Christian” is itself substantially a twentieth-century coinage, forged to give “western civilization” a shared moral pedigree. So the movie’s universal ethic is a twentieth-century composite of Gibbon’s civic virtue and Judaeo-Christian commentary, retro-projected as the timeless Golden Rule, retro-projected as Zeus’s law, retro-projected onto the Bronze Age, a construction of nineteenth-century archaeology founded upon eighteenth-century philosophical anthropology. Rehash stacked on rehash. Even those who love the movie agree: the ethics is not Greek, and the civilization it secures is not ancient.

What the archaeological archive does not tell you

Now set the trope against the evidence to which it looks for support. The

archaeological evidence of the end of the Bronze Age *does not* deliver a story of the fall of civilization. That story has been coming apart for a decade, in detail. The old case has a wave of destruction occurring c1200 BCE across the eastern Mediterranean – a map of catastrophic collapse. Jesse Millek went back to the excavation reports and found that of 153 destructions, some sixty percent are false – misdated, assumed without excavated evidence, or resting on citation chains the original reports do not support. The genuine destructions are smeared across fifty to a hundred years and more, most of them partial, many touching a single building; single episodes in long sequences of destruction and rebuilding. The famous distress letters from Ugarit name no destroyer at all; read closely, the richest of them point inward, to a Hittite tribute demand escalating into overdemand – famine worsened by the empire's own extraction. And the consistent picture across the millennia since the emergence of city states in Mesopotamia is not of stable states, alliances, empires, but of constant conflict, competition, interaction marked by dynamic shifts in dominance and subordination.



Schliemann's Trench at Hisarlik, the 17-meter cut he drove through the mound between 1871 and 1890, which today displays the superimposed cities in open

section. Stratigraphy and argument in one: the man hunting a single Homeric horizon cut straight through eight other Troys to reach it – destruction-and-rebuilding stacked in one face of earth, with the “one collapse”, the fall of Troy. nowhere to be seen.

What’s more, the very term “Sea Peoples” is a modern coinage – Maspero came up with the term in 1881 – consolidating heterogeneous Egyptian references into a single invading force. Ramesses III’s inscriptions at Medinet Habu, documenting his military victories, are pharaonic propaganda obeying pharaonic convention. The unified seaborne destroyer, collectively termed “the sea peoples” three thousand years later, is a construction of their enemies’ imaginations. And the movements the label bundles together included ox-carts, women, and children – migration, not armada. The movie has made literal a propaganda construct: ancient Egyptian state media, laundered through nineteenth-century migrationist fantasy, projected onto the screen as archaeology. And even here the movie’s paradigm of armed invaders is behind the times: the thesis that warfare was behind the systems collapse was discarded decades ago. The supposed science on screen is, at best, the fake archaeological science of c1993.

Beneath the horizon of 1200 BCE run deep continuities of settlement, practice, and lifeway that point to transformation in elite lifestyles and power networks rather than “systems collapse.” And more fundamentally: social stability is not the norm in prehistory and antiquity, to be assumed until it fails. Mobility, volatility, diversity, change are ever-present. What requires explanation is **metastability** – how elite networks held together as long as they did, in the face of tension and contradiction; what it cost to keep the tin moving and the tribute flowing and the palaces standing; how often these systems wobbled and were repaired before the wobble we retrospectively crown “the collapse.”

Here’s a quick elaboration of this crucial concept. Metastability: the appearance of permanence in a system held far from rest – an order that persists not because it is stable but because it is continuously maintained, at cost, against ever-present volatility, and that can therefore shift abruptly when the maintenance fails. Applied to antiquity: the palace, the trade network, the tribute system were not the ground state of a stable civilization occasionally toppled; they were ongoing accomplishments – daily work of supply, negotiation, and repair – whose seeming solidity was the work made invisible. Stability is not the default that

collapse interrupts; it is the achievement that needs explaining.

The question is not why civilizations fall but how they ever manage to stand – and why they get called “civilized” in the first place by the archaeologists, anthropologists, and historians of the nineteenth century and after. Ask that question and the entire moral apparatus of the collapse narrative – the warning, the declension, the fall from grace – simply dissolves. Which is, I suspect, why nobody asks about it.

Except that someone did ask it. And that someone – Edward Gibbon himself – is devastating to this current debate. Gibbon was no careless mythmaker; he was the scrupulous one. Momigliano, a paragon in the scholarship of antiquity, located Gibbon’s greatness precisely in fusing the two traditions his eighteenth century held apart – the antiquarians’ erudition, the footnote, the primary source, against the philosophers’ narrative sweep – and his accuracy commands respect to this day. The narrative arc he upheld was not a failure of his scholarship; it was a choice made prior to it, the form the scholarship was poured into. And Gibbon knew. Here he is at the very summit of the narrative of decline:

“the story of its ruin is simple and obvious; and, instead of inquiring why the Roman empire was destroyed, we should rather be surprised that it had subsisted so long.”

General Observations on the Fall of the Roman Empire in the West,’ appended to ch. 38 of *The Decline and Fall of the Roman Empire* (vol. III, 1781)

The founder of the fall-of-civilization tradition concedes that the real question is the one I am asking in this post – how did “civilization” hold together at all? He states the question and then writes a story of the fall anyway, because the fall was what his form, his readers, and his irony required. The metastability question I am raising here now is not a twenty-first-century revision of Gibbon. It is Gibbon’s own buried comment, smothered for two and a half centuries by the narrative arc he closed over it.

Where the reflex to accept the narrative of collapse came from

Here is the puzzle worth dwelling on. Specialist archaeological research has spent decades moving away from the collapse story – toward transformation, continuity, regional divergence, the dissolution of the very unit “a civilization.” Yet a filmmaker in 2026 could assume, correctly, that a mass audience would hear “the age of bronze is ending” and supply the whole apparatus themselves: the stable golden world, the barbarians at the sea-gate, the fall. Where did that reflex come from? Not from the excavation reports. It came from a *genre*.

Call it big history, the universal synthesis, the whole-human-story book. Gibbon is its ancestor, Spengler and Toynbee its systematizers; its current bookshelf runs from Diamond’s *Collapse* and Harari’s *Sapiens* through Graeber and Wengrow (*Dawn of Everything*) to Kemp’s *Goliath’s Curse*, with Cline’s *1177 B.C.* as the Bronze Age franchise. Its contract with the reader is constant beneath the changing covers: the author will give you the whole human story and its moral in one volume. Its dominant product is what might be called the Universal Collapse Narrative – the past organized as a cycle of rising and falling civilizations/societies/states/empires, with the present read as the latest, highest-stakes turn of the wheel. And Greece and Rome, I note with professional discomfort, are the genre’s load-bearing examples – the cases that made the templates of rise, decline, and fall feel like descriptions rather than inventions.

The complicity runs much deeper than the shelf of trade books, for the arc is built into classical scholarship’s own chronology. Hellenistic critics back in the 200s BCE invented this scheme for art – rise to an acme after which, in the tradition Pliny transmits, *cessavit deinde ars* (“then art ceased”). Vasari revived the scheme in the sixteenth century as an ascent to perfection. And Winckelmann, in 1764 – squarely inside the window in which “civilization” itself was being forged – welded it to Greek art and to liberty: style rising with freedom, declining with its loss. The nineteenth century hardened his sequence into the period labels every student still learns, and the labels perform the parabola all by themselves – “archaic” means before-the-classic, “Hellenistic” has long meant decadence. Every survey course that walks from archaic through classical to Hellenistic teaches rise, maturity, and decline before anyone has mentioned a sea people. This was exactly my target in ten years of research into the design and making of ceramic “art” in the

early Greek city state – to challenge on every ground this template of rise, maturity, decline and fall (Art and the Early Greek State, 1999).

The discomfort is also local: big history has a Stanford address. Ian Morris wrote the energy-capture version down the corridor, scoring civilizations across fifteen millennia like decathletes; Walter Scheidel, the school's most disciplined member, counts levelling violence through five thousand years. Across campus at the Hoover Institution, in their "applied history", Victor Davis Hanson retails ancient annihilations as warnings for the present emergency, while Niall Ferguson has issued to the West its six "killer apps." The gradient runs, within one university, from survival curves to civilizational league tables to the defense of the West. When the movie's celebrants called it a defense of Western civilization, they were not misreading it; they were shelving it correctly.

Now here is the point I most want to make, because it revises my own critique. The narrative trope has *not* been consolidated primarily through academic research. The research, as we have seen, points the other way. The consolidation has happened in the trade press, in two decades of collapse bestsellers, TED talks, TV documentaries, and YouTube videos that have installed the wheel of civilizations as ambient cultural apparatus, something an audience carries into the theater without needing to know where it came from. That is why the movie needs no exposition: the books did the teaching maybe, but what they taught has now detached from them. The Universal Collapse Narrative has escaped its genre. It no longer needs the six-hundred-page synthesis with its dataset and its hedged footnotes; it persists as a free-standing scaffold available to any work – a film, a column, a security-policy essay – that wants the authority of deep time without the argument. The movie is not big history. It is what big history leaves behind in culture once the books are read and forgotten: the shape without the argument, the moral without the data, the wheel without the machinery that drives it. The genre's true product, it turns out, was never the thesis. It was the reflex.

In science studies this gets called **black-boxing**. Complex processes and apparatuses packaged and contained within a closed box that one doesn't need to open and inspect, because one can simply observe the regular inputs and outputs. Performance over inspection.

And with the data gone, what the reflex delivers stands exposed as something older

than historiography. Watch what the movie actually provides, in IMAX: an ordered world under law; a charter – honor the law or the world dissolves; and an ending, forecast and consummated, with the wheel's next turn gestured in the coda. Cosmogony, nomos, eschatology. Genesis, Law, and Apocalypse. Two hundred and fifty million dollars, delivered – the future colonized. Big history was always mythography – the grand récit that postmodernism pronounced dead, re-authorized by data rather than by Spirit or Progress; myth that disavows itself as science. The movie completes the disavowal's collapse: the myth performs naked with no evidence, argument, no costume. And nobody in the audience needs the footnotes, because the footnotes were never the point.

But is the story not simply there?

I am highlighting and finding fault with the significance of overarching scaffolds and frames – metanarratives. This target of metanarrative is sometimes taken as a foundation of postmodern critique. Let me anticipate an objection to such a critique of metanarrative, and at full strength, because it is the big historians' best defense.

Incredulity toward metanarratives, a critic might say, is itself a metanarrative: a story about the end of grand stories, told with all the sweep it forbids, self-consuming from the first page. Implied is a counter metanarrative, at best, of complexity, indeterminacy, relativism (we are trapped in the prejudices of our own contemporary times) – a postmodernist nihilism that finds fault in every foundation, including that of the intrinsic worth of "civilization". Beneath such a criticism sits a serious empirical claim. Some processes in history really do have regular and recognizable shapes. States form, extract, over-extend, and fail; demographic and fiscal rhythms recur, and the cliodynamicists model them with genuine predictive risk; the Aegean palaces really did burn, and Linear B really did vanish before the alphabet arrived in the Aegean four centuries later.

On such a view the grand narrators are not imposing arcs but detecting them, as geology detects cycles of orogeny and erosion – and the humanist's insistence on irreducible particularity is the anecdotalist's refusal of statistics. Compression, summary, pattern finding, the critic might continue, is not a vice but a *necessity* of scale: any account of ten millennia must compress; a thesis is honest compression; a plural past held open is compression by evasion.

Grant what must be granted. Recurrence is real; compression is unavoidable; the best quantitative work does expose itself to disconfirmation. No one mobilizing forty story-scenarios of antiquity, as I am with Gary Devore in our long-in-composition account of antiquity *Greece and Rome: Speculative Scenarios*, gets to claim the high ground of no-stories. The critique was never that there are no regularities, patterns, dynamic processes, no shapes to history. This critique of metanarratives is about what the shapes of history are, where they come from, and how they are held, who they serve, and who gets left out in the summary compression.

If the metanarrative of collapse was a discovery or detection of real pattern, its instances would converge – the same evidences yielding the same narrative arc, as the rocks do for the geologists. Instead the genre's own history is a sequence of incompatible shapes and patterns confidently extracted from essentially the same evidence: Gibbon's declension, Spengler's organism, Toynbee's challenge-and-response, Diamond's environmental verdict, Harari's ascent of fiction, Scheidel's escape, Kemp's curse. One might claim that there is new evidence; this is a regular claim in archaeological news – “this new evidence changes the way we understand history”. What I am saying is that, whatever the evidence, old and new, narrative account is always *underdetermined* – never fully substantiated. Gaps and inconsistencies always have to be filled. Underdetermination on the scale of big history is not about detecting faint traces. This is projection, serially. Each narrative arc, each pattern or shape of history is read off the same data with equal assurance, just as each author assures the reader of such unique command of the evidence that affords them fresh insight (“it's not civic virtue, or demographics, or geography, but creative serendipity”, says the recent offering from Patrick Wyman).

The (meta)narrative arc curates the data rather than the reverse. That is what Millek's audit of the archaeological evidence for the Bronze Age collapse points to – curation. Sixty percent of the destructions on the collapse maps are false, accumulated through citation chains drifting, decade after decade, toward the story everyone already knew. The narrative did not summarize the excavation reports; it *edited* them. A critic might claim the metanarrative is empirically valid; the Bronze Age case shows the empirical record itself was shaped by the metanarrative. That is not a postmodern assertion. It is a finding, with percentages.



The 1874 photograph of Sophia Schliemann wearing the “Jewels of Helen” from “Priam’s Treasure”. A person literally performing the archive – the present dressing itself in a fabricated past and calling it recovery. It condenses “an archive to be performed rather than a question to be asked” into a single face.

Hayden White, the philosopher of history, a sadly-missed friend and colleague, saw all this coming. His book *Metahistory* argued – half a century ago now – that before a historian explains anything, the historical field is prefigured and emplotted: Romance, Tragedy, Comedy, Satire. Poetic acts, prior to the evidence, determining the shape of the account and carrying an ideological payload the historian need not intend. White read the late Enlightenment, Gibbon included, under Irony – the solemn scoffer-sceptic whose scrupulousness was the vehicle of an emplotment chosen in advance (I recall finding exactly this scholarly character in the debates involving Walter Scott, James Macpherson, Joseph Ritson at the end of the eighteenth century and covered in my book *The Archaeological Imagination*). His point was never that historians lie or that evidence does not matter; it was that the shape is made, not found, and that the making does political work. The maps of prehistoric destructions drifting toward the expected catastrophe are prefiguration caught in the act, in the citation record; big history is emplotment industrialized; and the movie is emplotment with a production budget – tragedy at two hundred and fifty million dollars, earning many times more in real cash, not just cultural capital.

So my stand with Hayden is not incredulity toward metanarratives; it is attention to their **poetics**. Every account emplots – my own included. The difference that can be defended is not innocence but avowal: say what shape, pattern, narrative arc you have chosen, hold it in the plural, and submit it to the same tests you apply to others. My own metastability inversion does not get a pass on such an evaluation – I have said elsewhere what would count against it, and the Aegean, where something did rupture deeply and irreversibly, is exactly where the accounting is due.

Six questions to carry out of this theatre/archaeology

These questions, I should say plainly, are Hayden White’s insights turned into a playbook – *Metahistory* turned into an instrument you can use in the bookstore.

This is why the main line of critique of Nolan’s *Odyssey* should run through the concept of civilization and the shape of history – not through fidelity, accuracy,

or even (though the matter is real) the politics of its casting. Replay rather than reenactment, as I argued in the first review I posted of Nolan's *Odyssey*. The instrument I use on the genre works just as well on the movie, and I offer it to any reader; it is six questions.

1) Strip out the deep history: does the present-day warning weaken? (It does not – the Bronze Age was costume, supplying authority rather than evidence.)

2) Name the thing that is said to rise and fall: would any specialist accept “Bronze Age civilization” as a bounded organism with a lifespan – and who, in 1200 BCE, could have possessed that unit?

3) Name the master key – here, the abandonment of hospitality – and list what it must flatten to stay master: imperial over-extraction, regional divergence, millennia of smeared and partial destructions.

4) Ask what observation would count against the thesis – and notice that in a month of reception, every reading of the movie, including the twist that seemed to refute the migration allegory, was absorbed as confirmation of collapse; that is not insight but a mood.

5) Find the story's implicit shape or form – tragedy – and ask where the shape, not the evidence, is doing the selecting. (The movie's one open moment, “You are the people from the sea,” is spent as a plot twist and reabsorbed into moral allegory within minutes, because tragedy has no slot for an open question.)

6) Separate the historiography from the contemporary moral/message: the movie carried three incompatible political payloads in three weeks, which tells you the vehicle is indifferent to its cargo. A moral that needs millennia to sound true probably is not. The movie's familiar nineteenth-century narrative frame carries the message – not Homer, or archaeology, or ancient history.

The movie fails all six. So does the shelf that taught it how – including the wing of the shelf at my own address.

How does any world hold together at all?

I can hear the reply: this refusal of the grand narrative offers only weak talk of

“continuity” and “complexity” – the academic cop-out, nothing to inform a decision. Here are two answers, briefly, because they point to where my projects go next.

First, the objection mistakes a property of a medium for a property of knowledge. The definitive statement is a formal requirement of the 600 page book and the three-hour movie; and we have seen what its decisiveness delivers – fate. The wheel turns; the seeds sprout; prepare to mourn. That is not a means to support assessment and decision-making. I seek a pragmatist stand (and have outlined such at length in the collaboration *Creative Pragmatics* [Link]). Definitive statements – “this is the way history is” – foreclose any decisions that might counter the essential summary, with quietism in the face of expert authority dressed as realism. It is the genre of big history, not its critics, that commits the cop-out, for a definitive account of forces beyond anyone’s agency tells the reader precisely nothing about what to do.

The alternative is not vagueness but different mediations of past-in-present, built around agency – how things get done: who kept the grain moving, how a treaty was patched, what it cost to repair a harbor, a network, a peace. Efficacy, improvisation, maintenance, *métis*. A public equipped with the working knowledge of repair is better placed, not worse, before the seemingly intractable, fate-driven forces of today – because it has been shown that the forces were never fate. They were held together, by people, at cost; and what is held together can be held differently.

The shape of history really is multiple – multivocal, polyphonic, polytropic – but multiple is not chaotic, and refusing the single narrative arc or analytic thesis is not refusing knowledge. The aim is a different kind of knowing: a heightened sensitivity to atmosphere, ambience, milieu – the shifting weather of the worlds people inhabit – awareness good enough to navigate by, to find one’s way. This is what a toolkit of dynamic concepts is for: agency as the capacity to get things done; heterarchy alongside hierarchy; lifeworld, assemblage, mobility, temporality – verbs rather than nouns, instruments that sharpen attention rather than representations to be judged true. Again I have attempted to show what all this looks like, and what it delivers – from accounts of the early years of the Greek city state, through temporal landscapes, to contemporary automotive design.

Odysseus, of all figures, is the emblem of exactly all this, as I outlined in my

criticism of Klein's review under the concept of *mētis* – trickster intelligence [Link]. Nobody has ever had a definitive account of the sea; the sailor has weather-sense, and gets home. *Polytropos Odysseus* – the man of many turns – is not a failure to be one thing; it is the oldest name we have for adequate knowledge of an unstable world. The movie straightened the many-wayed man into a man of a single way, as the genre straightens the many-wayed past into a single arc. The remedy is the same in both cases. Keep the turns – and keep asking the question this movie, its admirers, and its detractors have all alike declined to ask.

Not why civilizations fall.

How anything holds together at all.

My July response to the movie: "Christopher Nolan's Odyssey – an old story, but not the one that's being talked about" (this site, July 28). The archaeology drawn on here: Millek on the destruction horizon; Cohen & Torrecilla on the Ugarit grain letters; Ben-Dor Evian on Medinet Habu; Fischer & Bürge (eds.), "Sea Peoples" Up-to-Date; Knapp & Manning; Middleton, Understanding Collapse. On Gibbon and historiography: Gibbon, "General Observations on the Fall of the Roman Empire in the West" (Decline and Fall, ch. 38); Momigliano, "Gibbon's Contribution to Historical Method" (1954); Hayden White, Metahistory (1973) and The Content of the Form (1987). The genre: Gibbon; Spengler; Toynbee; Diamond; Harari; Cline, 1177 B.C.; Graeber & Wengrow; Wyman, Lost Worlds; Kemp, Goliath's Curse; Morris, Why the West Rules–For Now; Scheidel, The Great Leveler and Escape from Rome; Hanson, The End of Everything; Ferguson, Civilization. On mediation: Lyotard on the grand récit; Haraway on speculative fabulation; Detienne & Vernant on mētis; my "Re-playing Remains: Theatre/Archaeology," Performance Research 31.2 (forthcoming), and "Social Theory in Archaeology" (2023).

CREATIVE PRAGMATICS FOR

ACTIVE LEARNING — IMPLICATIONS OF AI IN ASSESSMENT

Contributions from Science Education Research 14

Connie Svabo
Michael Shanks
Chunfang Zhou
Tamara Carleton *Editors*

Creative Pragmatics for Active Learning in STEM Education

 Springer

Assessment in the AI era: a moment we have been preparing for since the 1980s

A comment on the Stanford Accelerator for Learning white paper "Responsible Assessment in the AI Era" (2026)

Quick summary – AI is revealing the flaws of traditional pedagogy based on standardized testing of final course deliverables. I am not alone in pointing out that we have known this for a very long time, and we already have tried-and-tested ways of making pedagogy more centered on skills and competencies, and on the people that really matter – students themselves.

The Stanford Accelerator for Learning, with ETS, has just published the findings of its January 2026 convening, Responsible Assessment in the AI Era. Some hundred leaders from research, technology, K-12 and higher education gathered around a question posed by Candace Thille: "How do we shape the current moment?"

The paper is a lucid statement of where assessment now finds itself, and I recommend it. Its diagnosis runs in three parts. Traditional assessment is misaligned with how learning actually occurs – learning unfolds as a process, while assessment remains largely event-based, a snapshot at a single point in time. Generative AI has exposed the limits of judging learning by final outputs, since a learner can now produce a high-quality product without engaging in the learning processes the product was meant to represent; outputs alone, the authors conclude, "can no longer be assumed to serve as reliable indicators of human capability." And there is a growing gap between what we measure and what matters: as AI absorbs routine cognitive tasks, what education must cultivate are the durable, distinctly human capabilities – critical thinking, creativity, collaboration, curiosity, agency, adaptability – precisely the things our assessment instruments were never designed to see.

The prescriptions follow: move from isolated testing events to systems of inference built on evidence accumulated over time; expand what counts as evidence to include social and relational learning; extend the role of formative assessment; adopt portfolio- and competency-based approaches that capture artefacts, projects, and collaborative work; co-design assessment with the people it affects; and keep humans in the loop.

All of this is very familiar to some of us. This is the diagnosis – and some indication of the cure – that a group of us set out last year in *Creative Pragmatics for Active Learning in STEM Education* (Springer, 2025, edited with Connie Svabo, Chunfang Zhou, and Tamara Carleton [Link]). And the book itself is a distillation of a much longer practice – half a century and more of project-based active learning, in my case reaching back through the d.school and Stanford Humanities Lab, the modular research-led curriculum we built at Lampeter in the 1990s, integrated curricula in a classics classroom in the 1980s, and a master's thesis I wrote in 1981 on the radical tradition of student-centred learning – alongside the Danish tradition of problem- and project-based learning at Roskilde and Aalborg that my co-editors carry.

The white paper describes a future for assessment sensitive to the implications of AI. It is a future that active learning has been rehearsing for decades.

AI didn't break assessment; it exposed it

The deepest point of contact is philosophical, and it matters because everything practical follows from it.

The white paper observes that when a machine can produce the product, the product ceases to be evidence of the person. Quite so. But notice what this concedes: the equation of learning with outputs was always a convenience of measurement, not a truth about knowing. *Creative Pragmatics* begins from Vico's aphorism *verum ipsum factum* – truth itself is made. Knowledge is not a commodity transmitted and then inspected; it is a performance, an achievement, situated and iterative, accomplished by people working with materials, instruments, institutions, and each other. That is the settled finding of half a century of science and technology studies, and it is the working assumption of every studio, lab, and project team.

If knowing is a performance, then assessing only the frozen end-product was always a category error. Generative AI has not created this problem; it has made it impossible to ignore. The paper's own trajectory – from testing events to “continuous, context-rich, and developmentally oriented” assessment – is exactly the move from what Andrew Pickering calls a representational to a performative model of knowing, which is the theoretical spine of our book.

The solutions on offer are time-served

Take the paper's areas for action in turn, and in each case project-based active learning turns out to hold a worked solution – not a proposal but a repertoire, tested in classrooms, studios, and national programmes.

Portfolio- and competency-based assessment, “evidence of learning across time and contexts,” “artifacts, projects, and collaborative work” – this is simply a description of the project studio. The brief, the research, the iterations, the prototypes, the critique, the final review: a semester of studio work generates continuously exactly the accumulated, socially situated evidence the paper calls for, and it has done so since long before anyone thought to call it a system of inference. Our book treats this machinery in detail – how project briefs are crafted with external partners (a decade of data from the Stanford-linked SUGAR network), how design studios at Columbia, Stanford, and Nebraska scaffold and assess competence in context, how summative assessment of integrated STEM competencies can be made sensitive to affect and engagement, and how “feedback literacy” is itself a competency to be taught, through rehearsal and enactment.

Formative assessment “embedded in instruction to guide next steps,” with peer feedback in the loop – this is the daily texture of studio critique and problem-based learning, where feedback is not an adjunct to the work but the medium in which the work proceeds.

The durable human skills the paper worries we cannot yet define or measure – adaptability, collaboration, creative problem-solving, judgement under uncertainty – are what our book calls competencies for navigating complexity, and they are not undefined: the European Qualifications Framework, the OECD's transformative competencies, and a large research literature specify them, expecting graduates to “integrate knowledge and handle complexity, and formulate judgments with incomplete or limited information.” What Creative Pragmatics adds is the pedagogical mechanism: you do not teach judgement in unpredictable situations by lecturing about it, and you cannot assess it with an item bank. You place learners in open-ended projects with real stakes and distributed responsibility, and you attend to how they perform.

And sociocultural responsiveness – Kadriye Ercikan's point that learners bring their “full self” into assessment – is what the tradition from Dewey through Lave

and Wenger has always insisted on: knowing is situated; the “enviroming conditions” are part of the cognition. A pedagogy built on situated performances of knowing does not need to retrofit context; it starts there.

A shared caution

The paper is also honest about the risks, and here too we converge. Measurement signals what systems value, as OpenAI’s Sara Caldwell put it; assessment shapes what education prioritises, and repeated use narrows what counts as learning. Our third chapter presses the same warning through Pasi Sahlberg’s critique of standardised, accountability-driven reform: competence-based approaches themselves turn reductive the moment we assess only what is easily measured. The paper’s call to “clarify and operationalize complex constructs” is necessary work – but operationalisation must not collapse holistic competence back into isolated, testable skills. That is the specific challenge Creative Pragmatics is designed to avoid, by keeping competence whole: knowledge, skill, judgement, responsibility, and the agency to act.

I would add one note of friendly pressure. The paper looks chiefly to AI to expand the evidentiary base – stealth assessment, process data, continuous data streams – and, to its credit, immediately registers the concerns: privacy, learner awareness, more data not meaning better insight, and Ben Domingue’s caution that passive collection raises hard ethical questions. The active-learning tradition suggests the alternative was available all along: rather than instrumenting ordinary instruction ever more densely so that assessment can be extracted from it, design the learning so that rich evidence of competence is what the work itself produces – visibly, with the learner’s knowledge and participation, in portfolios, prototypes, performances, and critique. Co-designed with learners, as the paper itself recommends. Trust, its authors note, is built through transparency; a studio review is about as transparent as evidence gets.

In the classroom, now

This is not, for me, only a matter of frameworks. In my own teaching policy the same commitments are operational. Assessment is designed to test the competence a course actually develops, with criteria public and intelligible, self- and peer-assessment as serious components, and a clear distinction between the formation of capacity and the certification of completion. Student AI use is met not with

surveillance but with transparency and reflection: disclosure of prompts and exchanges, and critical analysis of what the tool did and did not do, so that AI use becomes an object of pedagogical work rather than a credentialing risk. Some assignments are deliberately AI-resistant – fieldwork, studio work, work with original sources – not to defeat the machine but because certain cognitive musculature is built only through sustained, unmediated engagement. And one refusal above all: pedagogy redesigned around preventing AI use, rather than around developing competence, a defensive pedagogy, is a deformation of teaching. The white paper’s plea that we strengthen learner support “without turning every moment of learning into another layer of assessment” makes the same point from the other side.

Shaping the moment

The paper closes where it should: AI can expand what is feasible, “but it cannot be held accountable for the consequences of assessment decisions. People can... humans must decide which possibilities are worth pursuing.” That is a statement about agency – and creative agency, the capacity of people, cooperating with the world, to make it otherwise, is the very heart of Creative Pragmatics.

Dan Schwartz says in the paper: “We need instruction that produces adaptive learners and assessment that can tell.” Dewey was making that argument in 1938; the Roskilde experiment institutionalised it in 1972; the studios and labs have been quietly practising it ever since. What the AI era has changed is not the answer but the urgency of the question. The moment the convening asks us to shape is one that the tradition of active learning through creative pragmatics has long been preparing for. The invitation now – and our book is meant as exactly this – is to stop treating these practices as boutique alternatives and to take them up as the mainstream design of teaching, learning, and responsible assessment.

The white paper: Nneka J. McGee, Candace Thille, Ikkyu Choi, Kadriye Ercikan, and Isabelle C. Hau, “Responsible Assessment in the AI Era: Key Insights from a Future-Focused Convening,” Stanford Accelerator for Learning, Stanford University, 2026.

The book: Connie Svabo, Michael Shanks, Chunfang Zhou, and Tamara Carleton (eds.), Creative Pragmatics for Active Learning in STEM Education, Springer, 2025. [Link]

Contributions from Science Education Research 14

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TRANS-NATION CO-CREATION



Studio Michael Shanks Stanford

This week I am off to join Sabine (Remdisch) and colleagues as part of our collaboration – Trans-nation Co-creation.

Here's a kind of prospectus.

TNCC Tour and Dialogues: A Week of Innovation, Leadership, and Foresight

From June 13 to 19, 2026, the Institute for Performance Management at Leuphana University Lüneburg holds a week of TNCC (Trans-nation Co-creation) Leadership Dialogues across Germany. The week brings together company visits, discussions, and leadership interviews, all exploring how organizations are transforming in the age of artificial intelligence and how AI finds its way into companies.

At Leuphana University, led by Prof. Dr. Sabine Remdisch and joined this year by Prof. Dr. Michael Shanks, one of Stanford University's most influential thinkers at the intersection of archaeology, culture and innovation, the tour moves between

very different settings, from an AI innovation park to a Celtic museum, on the premise that the conditions for innovation are best understood by seeing them up close and asking the people inside them how change takes hold. Shanks, whose work examines how organizations create and how the spaces and cultures around them shape what they are able to build, gives the program its through-line across the week – treating culture, history, and innovation as a single subject rather than separate ones. Remdisch, whose research focuses on the conditions that enable successful innovation and who brings a particular attention to the psychological factors shaping how individuals and organizations navigate AI transformation, anchors the program in the human dimensions of change.

The study conducts qualitative interviews with organizations of varying sizes and AI maturity levels in Germany to assess their current stage in AI transformation, the key challenges they face in adopting and scaling AI, and their readiness in terms of strategy, capabilities, culture, governance, and technology. The goal is to develop a comprehensive understanding of the current state of AI transformation and to use these insights to create a practical Performance Leadership Playbook with actionable guidance for leaders driving AI-enabled organizational change.

The week opens with an exchange between Shanks, Remdisch and Kerstin Fischer, Professor of Language and Technology Interaction at the University of Southern Denmark, whose research on trust in human robot interaction asks how people come to rely on machines, and how to guard against trusting them too much or too little. It is a fitting start to a week about innovation in the age of artificial intelligence, where the harder questions are often less about capability than about trust and judgment.

From there, the dialogues pair leading German enterprises with sites of cultural and historical significance. In Heilbronn, participants visit the Innovation Park Artificial Intelligence (IPAI) – one of Europe's largest AI campuses, bringing together research, industry and startups to advance artificial intelligence as a driver of innovation – and the Campus Founders, a leading accelerator and entrepreneurial hub that supports startups and young entrepreneurs in building scalable businesses, with a leadership interview with Chief Executive Oliver Hanisch.

In the Wetzlar region, they tour the LEICA manufactory and speak with Chief

Technology Officer Dirk Voelkel, visit RITTAL – one of the world’s leading manufacturers of industrial enclosures, power distribution and IT infrastructure solutions, known for its commitment to innovation and digitalization – and meet regional small and medium-sized enterprises. At the Keltenwelt, the group tours the Celtic museum with its director, Dr. Marcus Coesfeld.

The program continues in Hannover with a meeting at the Lower Saxony Ministry of the Interior, Sport and Digitalization, before heading north to the Institute for Performance Management in Lüneburg, and a lunch hosted by Leuphana President Prof. Dr. Sascha Spoun, who will share insights into Leuphana’s distinctive study model and how the university, as an organization that began positioning itself in the field of artificial intelligence at an early stage, continues to shape and advance this transformation.

At Leuphana University, the group also holds a leadership interview with Prof. Dr. Michael Frese, an internationally recognized scholar of entrepreneurship and work psychology whose research examines how individual initiative and leadership drive innovation and organizational performance.

The tour concludes on Friday with a site visit to IKEA in Hamburg, focusing on the “Reimagining Work places” project (a cooperation between IKEA and Leuphana), where a functional model office has been created that makes innovative work concepts tangible and researchable. The tour then concludes with a visit to the Artificial Intelligence Center Hamburg (ARIC) and a leadership interview with Alois Krtil – CEO and founder of the ARIC and one of the most prominent voices in AI in Germany and Europe.

Context – performance management

Trans-Nation Co-Creation (TNCC) is a cross-border AI & innovation program of the Institute for Performance Management at Leuphana University Lüneburg, funded by the German Federal Ministry of Research, Technology and Space (BMBFTR). It connects German innovation leaders with experts, networks, and ecosystems of Germany and Silicon Valley, in the belief that meaningful innovation depends on collaboration across organizational and national borders.

Navigating the AI Transformation

Running through the week is a qualitative interview study that hears from organizations of every size, from large enterprises to SMEs and young startups, about where they really stand with AI.

Big topics

1 Organizational Readiness & Strategic Positioning

Readiness: Where do organizations currently stand in their AI transformation journey – how prepared are they in terms of AI readiness, including strategy, capabilities, culture, governance, and technology?

Strategy: How does AI transformation affect competitive positioning and existing business models?

2 Organizational Culture & Human-Centered Transformation

Culture: How do organizations foster a culture of innovation and openness that enables AI adoption?

Humans-in-the-loop: How do organizations balance efficiency gains through AI with employee well-being and human-centered work design?

Trust: How do leaders address resistance and build trust during AI transformation?

Communication & Storytelling: How do leaders effectively communicate the vision and purpose of AI transformation across all levels of the organization?

3 Organizational Learning & Change

Challenges: What are the most significant challenges they face when adopting and scaling AI?

Scaling: What distinguishes organizations that successfully scale AI initiatives from those that struggle to move beyond pilot projects?

Learning: How are organizations building the skills and competencies needed to

thrive in an AI driven environment?

4 Leadership

Leader Self-Efficacy: How does the way leaders engage with AI themselves shape the transformation of their organization?

Leadership: What are the critical leadership responsibilities required to successfully steer AI-driven transformation?

Psychological Safety: How do leaders create an environment of psychological safety that encourages experimentation, learning from failure, and creative problem-solving in the context of AI?

Ethics & Responsibility: How do leaders ensure the ethical and responsible use of AI, and what frameworks are in place to manage associated risks?

5 Organizational Impact & Collaborative Ecosystems

Impact: How do organizations measure the success and impact of their AI initiatives?

Collaboration: How do organizations collaborate with external partners, startups, and research institutions to accelerate AI innovation?

The insights gathered from these interviews will provide a comprehensive view of the current state of AI transformation in German organizations. The findings will serve as the foundation for developing a practical *Performance Leadership Playbook*, offering leaders actionable guidance on how to navigate, lead, and accelerate AI-enabled organizational transformation.



A critical-heritage complement to the Janus Maneuver –
[Link]

More notes on futures studies. A second component to the same conclusion: that working with the past is a way of making futures.

Convergence – the “Janus Maneuver” and heritage futures

In a recent post I made the case for “The Janus Maneuver” [Link] – that an archaeology of design supplies futures studies with a worked-out philosophy of time, materiality and knowledge. Janus, Roman god, performed hindsight and

foresight at the threshold of pasts and futures – the Janus Maneuver; archaeologists work with remains in the actuality of now, with a care for what is to become of what was. Over the past two decades a strand of archaeology and heritage studies has been arriving, by a different road, at a closely related conclusion: that heritage management is not fundamentally about the past at all, but about the future. To care for what remains, to decide what to keep and what to let go, to conserve, restore, list, archive or rebuild, is always to act on behalf of some imagined future and some future public. Heritage, in a phrase that now organises a whole research field, is a *future-making practice*.

This is a strong complement. Where the design-foresight argument enters futures studies from the front door – through strategy, scenarios and prototypes – the critical-heritage argument arrives from within the management of the past by the back door, taking preservation to be a theory of the future. Two disciplinary fields, two directions, one itinerary.

There is a genealogical point worth making at the outset, regarding the way concepts and practices propagate in academic and professional fields (for archaeology, as explored in *Archaeology in the Making*, 2013) [Link]. The leading figure in the heritage-futures field, Cornelius Holtorf, now Professor of Archaeology and holder of the UNESCO Chair on Heritage Futures at Linnaeus University, took his doctorate at University of Wales Lampeter in 1998. We were both part of a great experiment – building a new kind of archaeology department centered on critical thinking about pasts-in-the-present, and I was Cornelius's supervisor. His pioneering doctoral dissertation, *Monumental Past*, traced the long "life-histories" of megalithic monuments in north-east Germany – the ways prehistoric tombs were reused, reinterpreted and re-presented across millennia (Holtorf 1998). It was already an argument about the past as something continuously remade in successive presents; the step to future orientation was a short one.



haecceity — it happened here, and let me tell you something ...

Constructing senses of place. Hadrian's Wall, border of the Roman empire, 2nd Century CE, Northumberland UK. The whole landscape was purchased by local Town Clerk and landowner John Clayton in the nineteenth century and transformed into a heritage monument. Concern over this process of heritage place-making was the inspiration for my 2013 book (updated 2019) – *Heritage – Performance – Design: Let me tell you about Hadrian's Wall* [Link].

From the past as cultural property to heritage as process

The groundwork was laid by the critical turn in heritage studies, which displaced the commonsense view of heritage as a set of valuable old things to be protected – cultural property

David Harvey's "Heritage pasts and heritage presents" (2001) argued that heritage is not a thing but a *process*, present in every period and not the invention of the modern conservation movement, and called for a longer and more reflexive historical scope for heritage studies. Laurajane Smith's *Uses of Heritage* (2006) pressed the point into a now-canonical thesis: heritage is "not a thing" but a *cultural and social process* of meaning-making in the present, and the field had been captured by an "Authorised Heritage Discourse" that privileges the old, grand, monumental and expert-certified, naturalising particular narratives of nation, class and science. The Association of Critical Heritage Studies, founded at Gothenburg in 2012, turned this into a programme, its manifesto declaring that heritage studies needed to be "rebuilt from the ground up," democratised against the Authorised Heritage Discourse and opened to marginalised and non-Western practices (Association of

Critical Heritage Studies 2012).

If heritage is a process enacted in the present, the question of *for what, and for whom* follows immediately – and that question is about the future. Rodney Harrison's *Heritage: Critical Approaches* (2013) drew the consequence, proposing a “dialogical” model of heritage that connects it to pressing social, economic and environmental concerns and asking, in a chapter title that names the whole problem, for “a future for the past.” The pivot from object to process had quietly become a pivot from past to future.



Computation, archives and records, statistical summaries, management, business, governance. IBM punched-card machine. Computer History Museum, Mountain View, California. Contemporary heritage – double-sided origin of AI agents.

Heritage as future-making: the Heritage Futures program

The explicit move was made by the *Heritage Futures* research programme, a large, AHRC-funded, interdisciplinary collaboration whose findings appear in the open-access monograph *Heritage Futures: Comparative Approaches to Natural and Cultural*

Heritage Practices (Harrison et al. 2020). Its premise is that conservation and preservation practices, natural and cultural, are best understood as techniques for *assembling and resourcing futures*, and it compares them across four cross-cutting themes – **diversity, transformation, profusion, and uncertainty**. Heritage, on this account, is one of the principal ways modern societies attempt to build and provision the worlds to come; the museum store, the seed bank, the archive and the nuclear repository are all, in their different idioms, future-making machines. Sharon Macdonald's parallel work on memory, identity and "difficult heritage" anchors much of the program's account of how societies negotiate contested pasts on behalf of the future (Macdonald 2013).













Miners' Gala, Durham, UK. The annual "Big Meeting" of often 200000 people in memory of the coal mining industry that was dismantled in the wake of class conflict in the 1970s and 80s.

Two strands of the programme bear especially on our argument. Caitlin DeSilvey's *Curated Decay* (2017) confronts the preservation paradigm at its most basic by asking what happens when we stop trying to arrest change. Through cases of "curated ruination," she develops a notion of *palliative curation* in which decay and loss are not simply failure but can be productive of meaning – a heritage practice that works *with* transformation rather than against it. DeSilvey and Harrison (2020) generalise this into a rethinking of "endangerment": rather than treating loss as the thing heritage exists to prevent, they ask what social and cultural work is done by anticipating, managing and sometimes accepting it. Tellingly, those papers were first given at the Second International Conference on Anticipation in London

in 2017 – the heritage-futures researchers meeting the anticipation-studies community on shared ground, the very ground where Riel Miller's futures literacy also stands (Miller 2018).

Holtorf, resilience and deep-time futures

Cornelius has made the future-orientation of heritage his central theme, and pressed it furthest. Against what he calls the loss-aversion built into conventional conservation – the reflex, in Kahneman's behavioural-economics sense, to weight any loss far more heavily than an equivalent gain – Holtorf argues for *averting loss aversion*: appreciating heritage objects as things persistently transformed in ongoing processes of change, growth and creation rather than as fragile originals to be frozen (Holtorf 2015). In "Embracing change" (2018) he reframes heritage as a contributor to *cultural resilience*: its value lies less in the specific fabric preserved than in its capacity to help communities absorb disturbance and adapt – to change well – for the future. The edited volume *Cultural Heritage and the Future* (Holtorf and Högberg 2021) gathers the international case for this position, and the UNESCO Chair on Heritage Futures, established at Linnaeus University in 2017, institutionalises it – significantly, under the same UNESCO roof that houses Miller's futures-literacy programme.

The most literal expression of heritage-as-future is Holtorf and Högberg's work on the long-term communication of nuclear waste (Holtorf and Högberg 2014). Safe geological disposal requires transmitting knowledge, warning and memory across tens of thousands of years – time spans for which no record has ever demonstrably survived. Treating a repository as *living heritage* rather than a sealed message reframes the problem: not how to freeze a warning for the deep future, but how to keep meaning alive through continuous re-interpretation, the way heritage always has. Here the archaeology of the very ancient and the design of the very distant future meet – hindsight and foresight as a single operation, at the scale of the *longue durée*.

The convergence, and the complement

Set beside "The Janus Maneuver," the heritage-futures literature does three things.

First, it corroborates. The central claim of the design-foresight argument – that working with the past is a way of making futures, and that the preservationist and

predictive paradigms (freeze the past; forecast the future) should give way to an active crafting of plural futures from what remains – turns out to be the independent conclusion of a substantial body of heritage scholarship. DeSilvey's transformation-over-stasis, Holtorf's change-over-loss-aversion, and Harrison's assembling-of-futures are, in heritage idiom, the same refusal of the freeze that the Janus argument makes in the idiom of foresight. The position is not idiosyncratic; a whole field has been building it.





Desks that belonged to William Armstrong, Lord Armstrong, in his house at Cragside, Northumberland UK. He remains celebrated as an innovator and philanthropist – tech and business “magician of the north”. On the desks – four slaves carrying a golden cage, letter-writing materials, an artillery piece, scientific instruments and specimen slides. Armstrong was the first global arms dealer who normalized the practice of selling weapons to all comers, was national leader of employer resistance to the labor movement throughout his life, and a beneficiary of imperial naval expansion who profited from every colonial war of the late nineteenth century. His support for tech innovation and philanthropy were real and funded by

activities whose human costs were borne by ordinary people – industrial workers, strikers, conscripts, colonial subjects.

Second, it extends the reach. The two literatures divide the labor helpfully. Heritage futures concentrates on institutions of conservation and memory and on the management of loss, decay and transformation – the care of what remains. The archaeology-of-design strand concentrates on strategy, innovation and organisational change – the design of what comes. Together they span the arc of the Janus Maneuver: looking back to care, looking forward to make, with the same gesture. Critical heritage supplies the missing institutional and ethical hinterland – questions of whose past, whose future, what may be let go – that a foresight practice needs and rarely has; design foresight supplies the generative, propositional, prototyping orientation that heritage practice, trained on protection, can lack.

Third, it sharpens a shared politics. Both literatures insist that futures are plural and contested – Smith's critique of the Authorised Heritage Discourse and the critical-heritage demand to democratise the past run exactly parallel to the warning, in futures studies, against *colonising* the future on behalf of the few (Sardar 1993). To ask "whose heritage?" and to ask "whose future?" is to ask the same question.

Hindsight, foresight, and future worlding

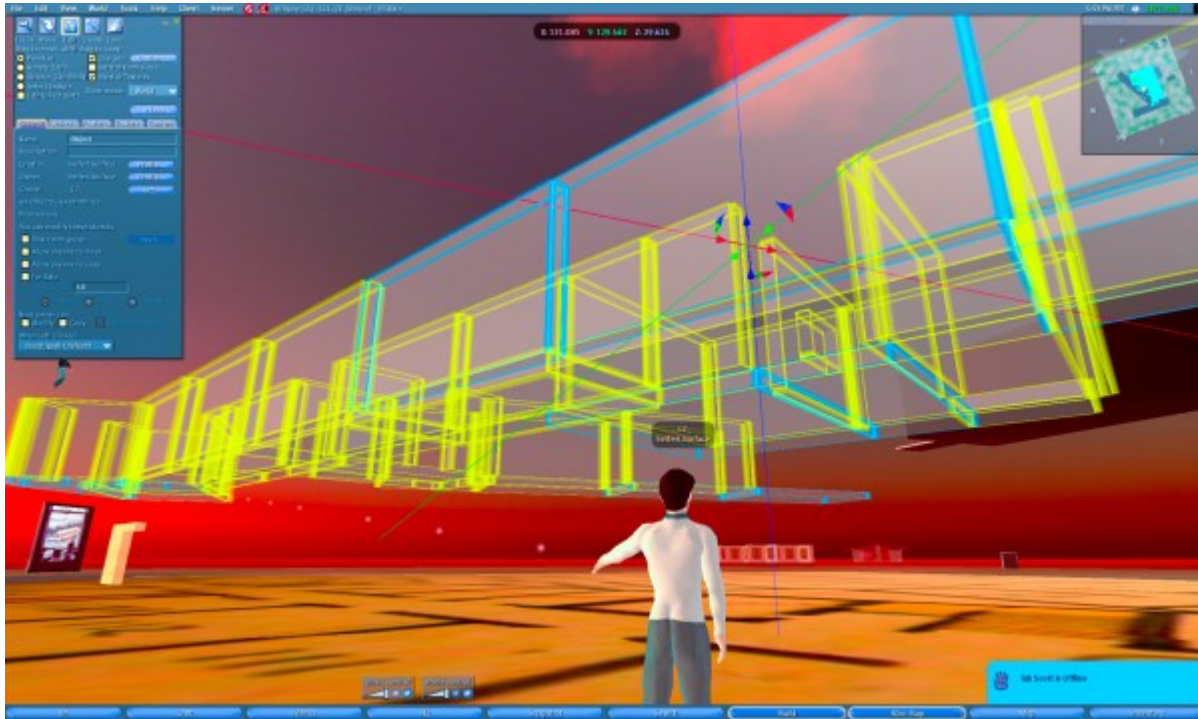
Heritage is a future-making practice. That sentence, now a commonplace in critical heritage studies, is the same proposition the Janus Maneuver reaches from the side of design and foresight: that hindsight and foresight are one movement, and that the material remains of the past are the resource from which futures are crafted. The convergence is striking precisely because the two literatures set out from opposite ends – one from the management of loss, the other from the design of innovation – and meet in the middle. That a leading architect of the heritage-futures field served his apprenticeship in an archaeology that already refused to separate past from present only underlines the point. An archaeological sensibility, carried through to its conclusion, does not choose between the past and the future. It holds them together, and works the threshold between.





"Costumed engagers". Nineteenth-century domestic servitude and industrial drudgery celebrated at Beamish – the Living Museum of the North, Durham, UK.

DIGITAL HUMANITIES – A ZOMBIE CONCEPT



This is part of my long-running commentary on the current state and future of the humanities, including what gets called digital humanities.

Nudged by a symposium at Stanford

There was a symposium at Stanford last week (November 14-15) called “The Futures of Antiquity in an Age of Digital Data and AI”. Credit goes to faculty colleague Giovanna Ceserani for organizing this gathering to examine what so many are currently concerned with – the rapid rise of generative AI and the implications for the likes of the (digital) humanities.

I gate-crashed only a couple of hours – I wasn’t invited. But I was provoked enough by what I did hear, and by the program brief and paper synopses, to make this comment. What follows is not a direct critique of the symposium, but a sketch of critical matters concerning humanities and academic disciplines today.

Spoiler – there is no new digital future for the past – yet

The title asks us to think beyond what gets called digital humanities. I welcome this. So what’s new here? My answer – certainly not a new humanities for the future.

I do not think it is useful to conceive that we are in an “age of digital data and AI”. Nor are digital data, machine learning and AI, the future of the humanities.

Questions of the digital humanities are a symptom of how institutions manage knowledge under contemporary political and economic conditions.

I list these infrastructures for building knowledge that have been rolled out over the last three decades.

I make this case and then outline the key and pressing concerns of the humanities that remain largely unexamined in the kind of discussion I witnessed last week.

The Futures of Antiquity in an Age of Digital Data & AI



A Stanford Classics Conference
November 14 & 15, 2025

Here's the conference agenda and schedule – [\[Link\]](#).

The conference was framed very explicitly around a double-sided question:

- **What can digital data and AI do for the study of antiquity?**
- **What can antiquity and its study offer to the development, critique, and governance of AI?**

The program text stresses that classics has a long history with technology, but asks what genuinely *new* knowledge digital data and AI have enabled, especially now that AI is reshaping how we research, teach, and imagine the ancient world. It repeatedly foregrounds:

- AI as pressure on scholarly method and pedagogy (research, teaching, learning in the ancient world);
- Antiquity as a resource for imagining AI futures (eg how ancient concepts of reason, prediction, governance, friendship illuminate AI's roles);
- A full "pipeline" of practice – from digitization of texts and images, to big-data analysis, to visualization and simulation, to heritage, ethics, and pedagogy. Panels moved from digitized literary texts, to material culture and history, to epigraphy/papyri, to heritage futures, to "AI between ancients and moderns," and finally to philosophy and pedagogy.

The title – *The Futures of Antiquity in an Age of Digital Data and AI* – signals that these are big questions facing those who study antiquity – the *future* of the past being in question in this *new* (presumably) digital age. Central themes here are futures and newness.

I detect a strong emphasis on *technical-methodological* questions in an agenda of

classic humanistic concerns: source/data quality and standards, building corpora of data and sources, bias and canon, archival selection, an interpretive hermeneutics of uncertainty, pedagogy and humanistic ethics, with newer topics of human-machine co-performance, and how to train/teach humanists in digital matters.

Classic(al) concerns, as I say.

I doubt whether such a technical focus manages to encompass the big questions implicit in the conference title – just how much is the “age of digital data and AI” affecting the humanities, given declining student recruitment, funding emphasis upon what get called STEM disciplines, culture wars around knowledge claims (eg implications of “colonial thought”), challenges to the ontology of humanities interests (eg a post-humanist critique)? Are we truly in a new age? Just how new is all this?

Let me step back and offer some answers.

Digital Humanities is not a disciplinary field – it is an institutional formation

What gets called “digital humanities” is not, and never was, a coherent intellectual field. It is best understood as an institutional formation: a convergence of funding mechanisms, administrative strategies, technical infrastructures, and labor arrangements that have reorganized how certain kinds of humanistic work are supported, branded, and made visible. The widespread claim that DH represents a methodological or epistemic rupture in the humanities does not survive even cursory historical scrutiny. What changed was not how humanists think, but how their work is infrastructured, managed, and accounted for.

The practices most often presented as distinctive of DH – corpus construction, pattern detection, classification, concordance building, mapping, modeling, editing, archiving – are not new. They are foundational to philology, archaeology, history, art history, linguistics, and anthropology. Humanists have always worked with structured data, formal models, typologies, and technologies of inscription. What digital systems introduced was scale, speed, and interoperability, not new forms of understanding. To describe this as the emergence of a new discipline is to mistake a change in material conditions for an epistemological revolution.

The mythology of DH solidified in the late 1990s and 2000s alongside major investments in digitization, tool-building, and cyberinfrastructure. New centers, labs, and grant programs – most visibly through entities such as the NEH Office of Digital Humanities – produced an administrative ecology in which DH became legible as a field. This legibility mattered: it justified funding, enabled new career paths, and provided universities with a narrative of innovation and relevance, project management focused on deliverables. But it also distorted perception. Activities that were already central to the humanities were re-described as novel once they were rendered computationally visible and administratively nameable.

This institutional consolidation brought with it a project-based logic borrowed from technoscience and grant culture: teams, deliverables, platforms, timelines, prototypes. These are not in themselves objectionable. But they have encouraged a shift in emphasis from method to technique, from conceptual work to tools, from theory to workflow. Visibility has become a proxy for intellectual advance. Dashboards, databases, and visualizations have come to stand in for arguments. In this environment, DH can present itself as the “future of the humanities” while quietly avoiding the harder work of articulating how knowledge is actually produced, interpreted, and contested.

Seen this way, digital humanities is not a disciplinary innovation but a rebranding of the humanities under new institutional, political and economic conditions. It is the humanities intensified and reorganized by digital infrastructures – nothing more, nothing less. The danger lies not in using digital tools, which humanists have always done in one form or another, but in allowing the institutional narrative of DH to obscure the deep methodological continuities of humanistic inquiry and to displace attention from the enduring theoretical questions that still define the humanities at their core.

“The Digital” and “AI” are zombie concepts

Much contemporary discussion does proceed as if we now inhabit an “age of digital data and AI,” as though this phrase names a coherent historical condition. It does not. It is a rhetorical convenience – a zombie concept that continues to circulate despite having little explanatory power, eating away at our capacity to think clearly about things. Framing the present in terms of “the digital” or “AI” exaggerates novelty, flattens history, and diverts attention from the forces that

actually shape the conditions of research, teaching, and knowledge production.

Humanities scholarship has always been entangled with technologies of inscription, calculation, mediation, and automation. From writing and print to statistics, photography, film, databases, and cybernetics, there is no pre-technological humanities against which “the digital” can be contrasted. What we are witnessing today is not the arrival of something unprecedented, but the acceleration and consolidation of long-running trajectories: data construction, modeling, automation, and infrastructural dependence. To label this an “age of AI” is to mistake a phase of intensification for a civilizational break.

The appeal of these terms is not analytical but institutional. “Digital” and “AI” function as administrative signals: they attract funding, promise relevance, and align the humanities with dominant narratives of innovation emanating from the technology sector. But as concepts they do very little work. They obscure more than they reveal, especially when they are treated as causal agents – as if computation itself were driving historical change. It is not. The decisive forces shaping the humanities today are political economy, institutional restructuring, labor precarity, widening inequality, and populist challenges to reasoned discourse – conditions into which digital systems are inserted and by which they are governed.

To speak of an “age of digital data and AI” also encourages a displacement of responsibility. Structural problems facing the humanities – declining enrollments, funding priorities skewed toward STEM, managerial governance, culture-war pressures on knowledge validation – are reframed as technical challenges to be solved by better tools. This is a category mistake. No amount of machine learning will resolve the erosion of public investment in education, the making casual of academic labor, culture wars of competing conspiracies, or the instrumentalization of research under audit cultures. Technology here serves as a distraction, not a diagnosis.

This is why the concept of “the digital” has become something of a zombie: endlessly invoked, rarely interrogated, and incapable of accounting for the realities it is supposed to explain. The concept survives because it is useful to institutions, not because it clarifies thought. By foregrounding technology, we background the long-standing questions that actually matter: how knowledge is made, who it serves, under what conditions, and toward what futures. The humanities do

not need to be saved by AI. They need to confront, once again, the enduring problem of how to think, interpret, critique, and act within a world structured by power, inequality, and historical inheritance.

What Digital Humanities avoids: theory, method, and the big questions

One of the most striking features of what passes for digital humanities is not what it addresses, but what it systematically avoids. Much DH discourse is preoccupied with tools, workflows, datasets, and technical capabilities, while leaving largely unexamined the deeper questions of theory and method that have always anchored humanistic inquiry. The result is a field that is busy, productive, and often technically impressive – but conceptually thin.

At the core of the humanities are long-standing questions about how knowledge is made and justified: interpretation and explanation, understanding and modeling, description and critique. These questions are not rendered obsolete by computation. On the contrary, they become more urgent as scale, automation, and abstraction increase. Yet much DH work proceeds as if methodological reflection were optional, or worse, as if it had already been settled by the availability of new techniques. Pattern-finding is treated as insight. Visualization is taken to be argument. Scale is mistaken for understanding.

This avoidance is particularly evident in the treatment of AI. Large language models, clustering algorithms, and image-recognition systems are often presented as if they were interpretive agents, rather than statistical machines that reorganize existing material. They retrieve, correlate, summarize, and simulate – but they do not explain, understand, or judge. Those acts remain human responsibilities, grounded in historically situated reasoning. When DH fails to articulate this distinction clearly, it risks reviving old positivisms under the guise of technical sophistication.

Equally absent is sustained engagement with social theory, political economy, and the arts as modes of knowledge. The humanities have never been isolated from the social sciences nor from creative practice, nor from the ontological and epistemological concerns of the hard sciences. Archaeology, in particular, has always occupied this hybrid space, working simultaneously with material evidence, models of social process, narrative interpretation, and speculative reconstruction.

Yet DH discourse often reinstates disciplinary silos by focusing narrowly on technique and leaving untouched the conceptual frameworks that allow us to connect material and cultural forms, social structures, and historical change.

What is lost in this narrowing is precisely the humanities' capacity to address big questions: what counts as evidence; how pasts are made present; how models mediate reality; how narratives shape understanding; how power operates through archives, classifications, and infrastructures. And the biggest of them all – just how are we to conceive of the human in a world of things, of other species, of non-humans? These are not ancillary concerns. They are the work of the humanities. When DH sidelines them, it becomes not an advance but a retreat – away from method, away from theory, and away from the intellectual responsibility to explain why any of this matters.

In short, digital humanities too often treats technique as a substitute for thought. Concepts follow tools, if they appear at all. But method does not emerge from software, and theory cannot be automated. Without sustained attention to these foundations, DH risks becoming an elaborate technical service layer attached to the humanities rather than a serious engagement with their enduring intellectual challenges.

A counter-genealogy: reflections on personal experience

The symposium nudged me to reflect upon my own experiences in matters disciplinary and digital. Here are a few words of orientation – a reminder to myself, as much as anything else, of a personal itinerary from classical studies to a contemporary archaeological sensibility.

If the dominant story of digital humanities is one of rupture and novelty, my own career traces a different genealogy – one of continuity rather than disruption, of method rather than technology, of practice rather than branding. Over more than four decades, my work has repeatedly intersected with new media, computational tools, and digital platforms. But at no point did these encounters pull me into a new field called “digital humanities.” They simply offered new materials and new conditions for doing what the humanities – and archaeology in particular – have always done.

After a very traditional grammar-schooling in classical languages I shifted

direction, at the protest of my teachers, into the archaeology of classical antiquity. A bigger picture was what I was seeking, and one that reached beyond the elite culture-industry of then-and-now.

I am currently working with Gabriella Giannachi on the intersection of arts practice and AI, part of an extensive government-funded research network in the UK [\[Link\]](#). In between I have explored GIS, VR and AR in learning, digitally-facilitated research collaboration (Web 2.0), augmented reality archives, hybrid analogue and digital media ecologies. In the last couple of decades most of this has been through my studio at Stanford and when I fronted Stanford Humanities Lab with Jeffrey Schnapp and Henry Lowood (up to 2009). Speculative fabulation. Theatre archaeology. Applied humanities. Design foresight and futures literacy, from Rotterdam to Aisin corporation. Scholartistry and Creative Pragmatics – active and hybrid learning beyond a sciences-humanities split – a series of projects with Connie Svabo and her lab at University of Southern Denmark [\[Link\]](#).

In the late 70s I explored the potential of statistical analysis of archaeological data associated with early farming communities in northern Europe – affirming patterns in large datasets of prehistoric mortuary practices: distributions of grave goods, spatial arrangements, demographic associations, and formal regularities. This was a computational humanities only made possible by the availability of high-end main-frame CPUs that could cope with the number of calculations involved in multi-variate analysis. The aim was never to replace interpretation with numbers. Statistics were lenses – ways of sharpening attention to structure and variation in material traces. Pattern-finding required judgment, contextual knowledge, and, above all, theoretical framing (structural-marxist socio-cultural modeling. Computation changed scale and speed, not the logic of inquiry.

The same is true of my later work with GIS. Geographic information systems did not introduce a new epistemology; they intensified an old one. Mapping is a hermeneutic and eidetic (pragmatic) practice. It directs attention, foregrounds relations, and encodes assumptions about space, agency, and causality. GIS taught me something elemental that has stayed with me ever since: digital tools reshape perception, attention, and workflow, but they do not think for us. They help us see differently, not understand differently.

This conviction shaped my approach when I co-directed Stanford Humanities Lab. We were explicit – and insistent – that SHL was not a center for “digital humanities.” It was a laboratory in the arts and humanities, embedded where appropriate in the social and physical sciences, and conceived as a studio for experimental scholarly practice. Our projects were not DH projects. They were humanistic projects that happened to use digital media: multimedia archives, collaborative platforms, performance-based interpretation, experimental reconstructions, and interactive models. We did not claim new methods. We made visible the humanities’ long-standing multimodality.

The same logic guided my work on collaborative platforms such as *Traumwerk* in the early days of Web 2.0. Before “platforms” became a managerial buzzword, this work explored distributed authorship, open commentary, and dialogic scholarship. Again, there was nothing fundamentally new here. Medieval glossators, early modern republics of letters, and nineteenth-century philologists all worked in commentarial traditions. Digital systems simply redistributed those practices across time and space.

My subsequent work in theatre/archaeology, archaeography, and arts practice as research pushed these commitments further. Performance, scenography, model-making, and speculative reconstruction are not embellishments to scholarship; they are modes of inquiry in their own right. They make worlds in order to think with them. In these contexts, method appears not as a formal protocol but as design—as the orchestration of concepts, materials, narratives, and audiences in situated projects. This concern with design connected with archaeology conceived as material-culture studies, and took me into design foresight, complementing direct collaboration with designers and artists.

Most recently, my engagement with AI and in another project with Gabriella Giannachi, has taken the form of what I call “archaeologies of AI”: treating intelligence, automation, and machine learning as cultural and historical phenomena, embedded in archives, infrastructures, and political economies. Once again, the question is not what the technology can do for the humanities, but how humanistic methods –interpretation, critique, genealogy, imagination – can clarify what these systems are, how they work, and what futures they help bring into being.

Taken together, this counter-genealogy shows something simple but often forgotten:

the digital is a material condition of contemporary humanistic practice. New tools intensify capacities that were already there. They do not displace the need for theory, judgment, or responsibility. If anything, they make those needs more pressing.

Creative Pragmatics: method as practice, not paradigm

What this counter-genealogy points toward is not a rejection of abstract theory, nor a retreat into empiricism, but a different understanding of method itself. Connie Svabo and I have come to call this orientation Creative Pragmatics [\[Link\]](#). It treats theory not as adherence to paradigms or schools of thought, but as a repertoire of conceptual tools deployed within situated projects. Method, on this view, is not abstract prescription. It is practice – designed, enacted, revised, and learned in the course of doing work under real constraints. In its transdisciplinary practice Creative Pragmatics transcends the regular distinction between arts, humanities, social sciences, physical sciences.

Creative Pragmatics draws on science and technology studies, design practice, archaeology, performance, and rhetoric. It starts from a simple observation: research does not unfold in the abstract. It happens in institutions, with particular resources, skills, audiences, technologies, and temporal horizons. Concepts are not detached explanations; they are tactics – ways of directing attention, framing questions, staging evidence, and making sense of what remains in the performance of knowledge. Theory is inseparable from mediation, from inscription, from the forms in which knowledge is made public and consequential.

Seen this way, the familiar opposition between humanities and social sciences, for example, collapses. In practice, both work through pattern-finding, modeling, interpretation, narrative construction, and critique. Both rely on judgment and imagination as much as on formal procedure. Archaeology has long exemplified this hybridity: it is simultaneously empirical and speculative, analytical and creative, explanatory and interpretive. Digital tools do not change this. They intensify it.

This is why the most important methodological questions raised by AI and large-scale computation are not technical. They concern praxis, thoughtful practice: how humans work with machines; how uncertainty, ambiguity, and interpretation are handled; how models are situated within arguments; how responsibility is distributed across human and non-human actors. Learning to use AI critically is not

a matter of mastering software. It is a matter of cultivating judgment, reflexivity, and ethical awareness in environments saturated with automation.

Creative Pragmatics therefore places learning and pedagogy at the center. Research is inseparable from learning by doing. Knowledge is produced through projects, experiments, performances, and interventions, not simply through the application of tools. Futures Literacy [Link], in this sense, is not about keeping up with the latest technologies. It is about developing the capacity to orient oneself within changing infrastructures, data regimes, and media ecologies—to ask, repeatedly and critically, what kinds of pasts and futures are being made possible.

If digital humanities has a future worth claiming, it lies here: not as a field defined by technology, but as a space in which the humanities recover and renew their methodological seriousness. Concept comes before technique. Practice comes before branding. And method is understood, once again, as a creative, pragmatic, and fundamentally human undertaking.

What is the past to become?

The humanities are not in crisis because they have failed to adopt digital tools. They are in trouble because institutions have struggled to articulate what the humanities are for in a world shaped by accelerating inequality, extractive political economies, environmental breakdown, challenges to reasoned argument, and contested futures. Framing the problem as one of technology – of catching up with AI, data, or “the digital” – is a way of avoiding this harder reckoning.

Digital humanities does not fail because it is insufficiently technical. It fails because it was too easily institutionalized without a corresponding deepening of methodological and theoretical ambition. In many cases it substitutes infrastructure for vision, tools for concepts, and visibility for understanding. That does not make DH useless. It makes it incomplete – and in need of re-situating within a broader account of how humanistic knowledge is made, taught, and mobilized.

The question that matters now is not whether AI will transform the humanities. Of course it will, in banal and uneven ways, as all media do. The real question is older and more demanding: what is the past to become? How are histories, archives, and cultural inheritances mobilized in the present, and toward what futures? Who

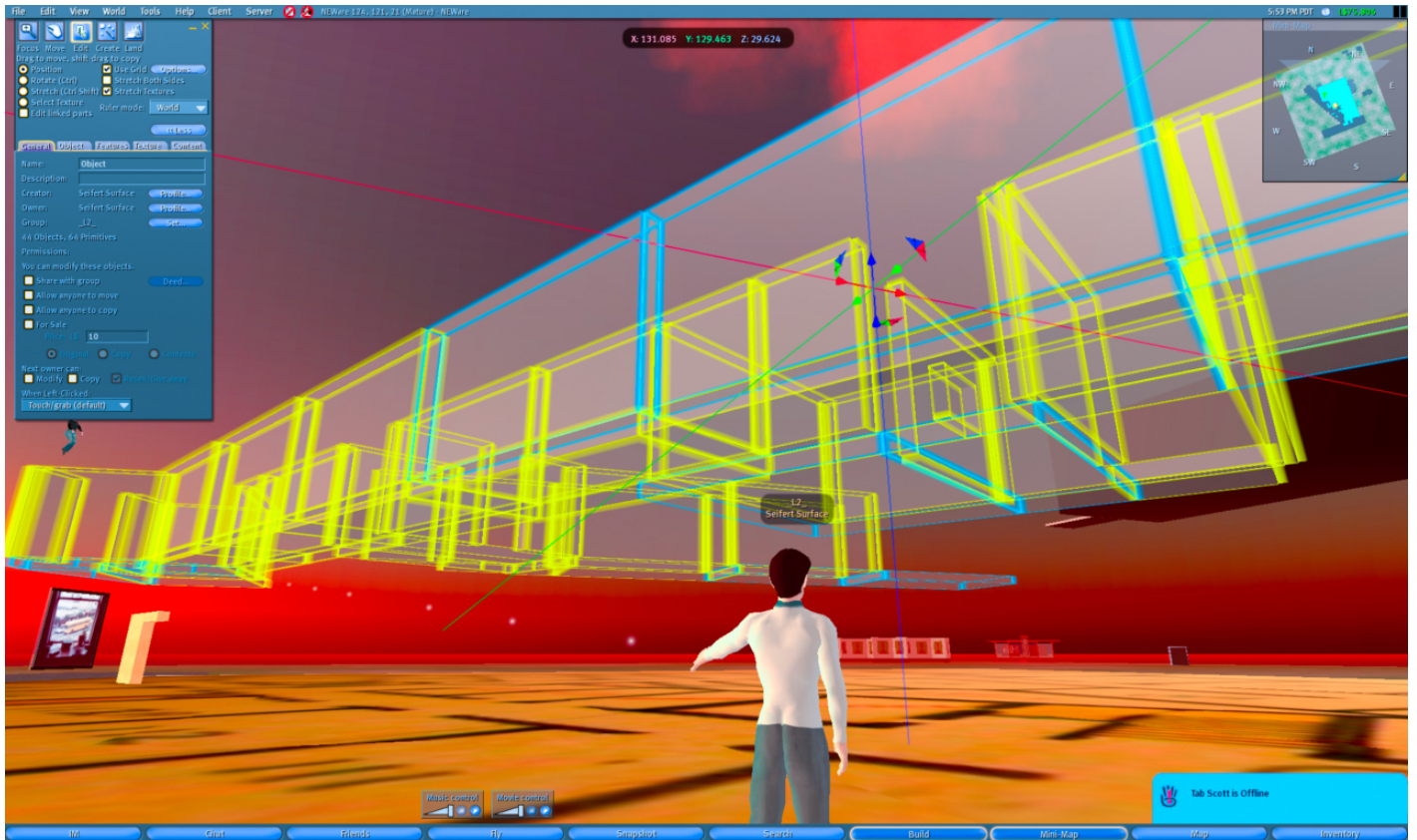
controls the infrastructures through which knowledge circulates? What kinds of judgment, imagination, and responsibility do we want to cultivate in students and scholars working amid automation?

Answering these questions requires intellectual leadership, not technical enthusiasm. It requires treating method as something to be argued for, practiced, and taught – not assumed to emerge automatically from new tools. It requires recognizing that the humanities have always been interdisciplinary, experimental, and engaged with technology, but never reducible to it.

If there is a future worth defending for the humanities, it lies in reclaiming this seriousness of purpose. Not in declaring new ages. Not in chasing zombie concepts. But in doing what the humanities have always done at their best: working critically and creatively with the remains of the past in order to imagine better, more just, and more thoughtful futures.

Dante
Chat bot





Animating the archive 2005. *Life-squared* – replaying Lynn Hershman-Leeson's 1972 installation at the Dante Hotel San Francisco in the online world Second Life. Stanford Humanities Lab for the Presence Project (Arts and Humanities Research Council UK 2005–2009).