

BROCWIN: The Environment as an Executable Artifact

Publication I — Curatorial and philosophical research paper

HEAV3NS-BROCWIN · Version 1.0.1 · 11 October 2026

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Abstract

BROCWIN makes the conditions of software execution available as a subject of curatorial attention. Developed through the HEAV3NS-COMBO experiment, it combines an inherited x86 interpreter in WebAssembly, reconstructed Windows interfaces, browser graphics and local native services to execute a supplied legacy MMO client. Retained control observations reach the original login interface after 440.703 seconds with a fresh browser profile and 438.797 seconds with a reused profile. This paper interprets the surrounding environment as an executable artifact: a constructed arrangement whose operation makes another historical artifact accessible. It distinguishes that interpretation from the project's limited experimental achievement. Neither complete gameplay compatibility nor durable archival execution has been established. The decision to close engineering leaves a bounded research object, including failures, source differences and uncertain claims, for future custody. Its institutional value lies in making preservation's dependencies and judgments legible.

1. An intervention around the program

The original login screen appears after more than seven minutes. That interval matters. The interface is familiar, but the conditions under which it becomes visible have changed: original x86 instructions execute within WebAssembly; reconstructed Windows contracts connect them to a browser; graphics reach a local canvas. HEAV3NS-COMBO supplies the browser integration, while BROCWIN names the internal project and compatibility environment. The record establishes this route to the interface without a conventional source port of the game. It does not establish that every route beyond the interface works.

[E01–E03](#)

The artistic proposition advanced here is that an environment can become a medium when its construction is the deliberate intervention. A resource lookup, a thread attachment or a shader translation ordinarily remains backstage. In this experiment, those arrangements determine whether the inherited program can appear and act at all. Their reconstruction can therefore be read as a work of composition: arranging relations between historical expectations and contemporary facilities.

This is a curatorial interpretation, not an experimental finding that the runtime is an artwork, or evidence that its engineers adopted a particular aesthetic theory. The commissioned context supplies the grounds for asking the question. The repository supplies a material case in which apparently peripheral mechanisms become necessary to cultural access.

Calling the environment an artifact also changes the unit of custody. The collectible object includes compatibility sources, module identities, input manifests, local services, observations and explanatory records. The executable file remains central, but its preservation cannot be understood solely as possession of that file.

2. Three senses of preservation

Preserving source code retains an account of how a program was expressed and permits some forms of analysis or rebuilding. BROCWIN did not recover the complete game source. Its compatibility sources and bounded disassembly are different objects with different provenance. A reconstruction of an API contract should not be mistaken for recovery of the program that called it. [E10](#), [E16](#)

Preserving executable behavior concerns what a program actually does: what it displays, accepts, computes and changes. A login image supports a specific visual observation. A successful allocation fixture supports a particular memory contract. Neither supplies the complete behavior of an MMO, whose actions depend on timing, server state and many paths through the client. The latest historical gameplay replay passes a former area gate and returns to town after a failed attempt, yet revival remains blocked. Such evidence makes preservation a graded and revisable claim. [E03](#), [E08–E09](#)

Preserving execution conditions concerns the dependencies through which behavior becomes possible. That includes libraries, file namespaces, address conventions, thread state, rendering interfaces, transport and configuration. The installed platform components and original native backend remain material dependencies in this project. Browser execution does not remove them by declaration. [E11–E15](#)

Jeff Rothenberg's emulation argument identifies continued access to original software and its interpretive machinery as a preservation problem. His research agenda also couples emulators with human-readable metadata and coherent encapsulation. BROCWIN offers a bounded case for that concern; it does not prove his proposed general solution or an unlimited future lifetime. [Rothenberg, 1999](#)

These three senses overlap but are not interchangeable. A sound archive must record which one a result addresses. The absence of full gameplay acceptance is therefore part of the object's description, rather than a detail that publication can smooth away.

3. What the freeze preserves

Leaving the supplied client unchanged on disk supports a stable reference for the experiment. The 321 input entries in the final control audit match their recorded hashes before and after the runs. The frozen environment subsequently retains a separate inventory of 2,229 files. These are integrity scopes with different purposes, not a single certificate of historical authenticity. [E02](#), [E06](#)

There is also a necessary qualification to the language of nonintervention. Ordinary loading relocates and resolves imported code. An earlier compatibility repair additionally installs a guarded send wrapper in the mapped guest image. It serializes existing original packet construction under the original socket lock. The supplied executable on disk remains unchanged, but the executed arrangement is mediated. The preservation claim concerns original application execution through documented adaptations; it does not claim an identical in-memory image or an entirely untouched execution path. [E17](#)

The final freeze preserves another distinction. Prepared modules and their patch include the atomic heap-ownership correction. A later reservation-cleanup edit exists only as source-tested work, and two observer files differ from the prepared manifest. Corrected closeout edition 1.4.1 records twelve passing source

suites and states that the last observer refinements were not fully retested. [E05–E07](#)

Curatorially, this uneven state is instructive. A frozen artifact need not be a finished product. It can be a precisely delimited stopping point whose incompleteness remains visible. Freezing curbs the temptation to turn publication into another engineering iteration. It also preserves the distance between what a mechanism promises, what a fixture demonstrates and what a human has actually seen.

The Variable Media Network proposes considering works through behaviors and preservation strategies that can outlast a particular medium. BROCWIN can be placed in dialogue with that approach, while acknowledging that the commission lacks a complete account of the original game's creators' preservation intentions. The present interpretive framework cannot substitute for those missing intentions. [Variable Media Network](#)

4. Computational archaeology without an origin myth

Legacy software carries historical assumptions in executable form. The PE loader expects particular section and import structures. Original libraries expect thread-local storage and callback ordering. DirectInput code expects immediate keyboard state. The graphics path expects Direct3D contracts and specific shader and font behavior. The archaeological labor is to identify which assumptions affect an observed path, then reconstruct the surrounding contract with evidence. [E10–E15](#)

This labor is not a discovery of a lost, complete original environment. The repository contains inherited installations, local repairs, upstream runtime work, native comparisons and successive observations. BROCWIN belongs to that chain. Its names date from 9 October 2026; earlier Theseus records remain under their original names. Original game developers, CardSorting/JoySwordOnline contributors, Wine-Assembly contributors, Microsoft platform contributors and local maintainers retain distinct attribution. [E16](#)

The layers complicate authorship productively. Original game algorithms are supplied compiled artifacts. Windows interfaces are reconstructed. Some platform algorithms are locally derived from installed Microsoft binaries. The browser integration and diagnostic procedures are further interventions. An archive that collapses these categories into a single claim of authorship loses the very history it intends to preserve.

Failures are archaeological evidence too. A mismatched socket ordinal that disturbs the guest stack exposes an otherwise invisible calling convention. A failing allocation cleanup reveals ownership beyond visible game objects. A revival failure establishes that arriving at a scene and preserving its operational time are different achievements. These examples do not identify one universal cause of incompatibility; they show why reconstruction must remain specific. [E10](#), [E07–E09](#)

5. Agent autonomy and the human witness

The project records substantial engineering conducted through AI agents and tools: source inspection, compatibility changes, regression construction, browser observations and knowledge reconciliation. Upstream attribution also acknowledges human contributors, Claude Code and Codex. The records do not justify exclusive authorship by the commissioned researcher or a single model. [E16](#)

Agent autonomy is best understood here as delegated technical activity within an institutionally set boundary. It can accelerate the production of hypotheses and fixtures. It can also propagate incorrect labels, overinterpret a successful test or mistake a screenshot timeout for an application failure. The

corrected closeout is evidence that a publication needs an accountable record of revision, not merely a confident narrative. It is not a controlled evaluation of AI engineering productivity. [E05–E07](#)

Human-readable visual review remains essential because an automated frame counter cannot identify a login interface by itself. The retained audit records four reviewed image files. Publication inspection examined two representative files; three of the four audited files have identical image hashes. Four reviewed records therefore do not mean four independent visual conditions. Neither the records nor this publication identify every reviewer's human or agent identity, so their authorship must not be invented. [E02–E03](#)

The importance of human observation is consequently methodological and curatorial: a person must be able to challenge the classification, inspect the artifacts and understand what the automated measurements omit. A displayed login screen can be recognized as a milestone while its damaged or incomplete surroundings remain available for criticism. Authority resides in that reviewable chain, rather than in an agent's unqualified declaration of success.

6. Time as a condition of access

The final cold control records 1,073 frame advances over 31.094 seconds after login detection; the warm control records 1,080 over 31.109 seconds. Both have empty reported error lists. These are short observation windows. They neither establish sustained operation nor translate directly into reliable gameplay frame rate. [E01–E02](#)

The approximately seven-minute startup is nevertheless a material feature of the preserved encounter. In an exhibition, waiting would shape attention, duration and interpretation. That is a proposed curatorial consequence, not a measured audience response. The delay must be disclosed rather than described as an efficient or production-ready experience.

Operational performance and preservation intersect without becoming equivalent. A slow executable environment can reveal historical behavior. An inaccessible or unstable one can obstruct it. Conversely, faster startup cannot validate missing semantics. The allocator's constructed deep-list improvement and its shallow-list penalty are useful technical findings, but neither supplies a demonstrated end-to-end gain. [E04](#)

Long-term continuity concerns future intelligibility and the ability to re-establish conditions. Continuous uptime concerns an observed period of operation. BROCWIN has documentation and bounded run records for the former, and short progress observations relevant to the latter. It has not proven indefinite reproducibility or 24/7 reliability. Treating those limits explicitly is part of preservation's temporal discipline.

7. Institutional significance and responsibility

Within the practice of computational art, generative research and long-horizon preservation named in this commission, BROCWIN offers a way to make infrastructural composition visible. This positioning follows the Chair's stated institutional purpose; no independent survey of HEAV3NS's wider history was conducted. The project demonstrates how a research process can generate both an execution environment and the evidence needed to interpret it.

The enduring institutional object should include success, failure, attribution and custody. UNESCO's digital-heritage charter connects continuity with deliberate management and accessible cultural memory. It provides a context for institutional responsibility, without conferring compliance or archival accreditation on this project. [UNESCO, 2003](#)

The present publications serve that responsibility by fixing claims at their evidentiary scale. Future institutions may elect to restore the prepared candidate, study the source-only cleanup or stage a supervised demonstration after renewed authorization. Each would constitute a new intervention and require its own record. The original experiment remains closed.

Conclusion

BROCWIN's curatorial achievement can be understood as making execution conditions into a legible artifact. Its experimental achievement is narrower: an original legacy client reaches its login interface through a browser-hosted compatibility runtime under recorded local conditions. The frozen record preserves the relation between those two statements without making either stand in for the other. What is handed onward is an executable arrangement, a set of observations and an institution's account of where its knowledge stops.

References and record of scope

Repository sources are identified in the [shared evidence index](#), especially EO1–E17. This paper reports existing experiments and two publication-time image inspections; it introduces no compatibility experiment. The interpretation is the commissioned researcher's analysis.

- Rothenberg, Jeff. 1999. *Avoiding Technological Quicksand: Finding a Viable Technical Foundation for Digital Preservation*. Council on Library and Information Resources. [Publication record](#).
- Variable Media Network. *The Variable Media Approach*; see also *Permanence Through Change* (2003), Solomon R. Guggenheim Foundation and Daniel Langlois Foundation. [Primary institutional account](#). The accessible institutional account informs this paper; the PDF volume was not retrieved in full.
- UNESCO. 2003. *Charter on the Preservation of Digital Heritage*, adopted 15 October. [Primary text](#).

External references consulted 11 October 2026. Document integrity and production details appear in [archival-manifest.json](#).