

Burnt Memories: Echoes of Datasets through Embodiment

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Abstract

Burnt Memories is a duo improvisation for Mosaïque, a descriptor-based concatenative instrument, and Wænderer, which navigates recordings encoded by the VAE distributed with Stable Audio Open. The configurations couple Mosaïque to a Buchla Thunder and Wænderer to an Erae II. Both query a corpus the duo created from no-input feedback and Buchla synthesis. We treat that corpus not as an intentional agent but as situated material: its production and selection, together with representation and mapping, make some sounds and transformations more available than others. Practice-led reflection on the opening, corpus changes, and looped ending shows how these configurations reorganize source recognizability, gesture-sound expectation, and performer attribution. The account is specific to this duo and piece.

1 INTRODUCTION

Burnt Memories asks how a shared corpus becomes playable differently when coupled to two representations and controllers. We use composition and rehearsal as research-creation rather than controlled evaluation. Non-neutrality therefore names a relational condition: recordings embody decisions about generation and selection, while segmentation, latent encoding, and mapping constrain what can be reached and how reliably gesture predicts sound. The corpus can redirect the performers without acting intentionally. Our claims concern the two configurations in this piece, where representation, controller, mapping, and performer cannot be isolated.

2 CONTEXT OF CREATION

Burnt Memories emerges from three years of collaboration between Dominic Thibault and David Piazza, joining instrumental improvisation and software development around Buchla systems and their emulations (Thibault & Piazza, 2023). At this stage, the duo asks whether material carrying shared memories can sustain audibly differentiated playing through unlike composite instruments.

The source recordings join no-input feedback and analog synthesis, practices already shared by the duo. Feedback contributes unstable, self-sustaining behaviour; synthesis with Buchla systems contributes deliberately shaped electronic events. Their juxtaposition broadens density and morphology while retaining a provenance both performers recognize. Corpus selection is therefore a compositional act rather than preprocessing (Thibault et al., 2025), consistent with accounts of corpus design as authorship (Bryan-Kinns et al., 2025; Tremblay et al., 2019).

Wænderer was introduced after the descriptor-based Mosaïque practice to ask what changes when the same recordings pass through a learned representation. It uses the fixed AutoencoderOobleck VAE distributed with

Stable Audio Open (Evans et al., 2024) to encode and reconstruct corpus-aligned latent frames; it does not use text prompting or diffusion generation. The learned representation can loosen direct source attribution and invite sustained steering rather than retrieval of discrete fragments. The model is not an autonomous improviser here, but a mediation that reorganizes what the performers can reach and recognize.

Here, musical identity means the audible attribution of recurring gesture-sound behaviour to a performer/configuration, not an essential property of a sound or person. This differs from source identity and from an engine's timbral character. The piece asks how these levels converge or separate as the corpus is shared.

3 RESEARCH-CREATION WITH DATASETS

In *Burnt Memories*, composition is both outcome and method. Improvisation, recording, corpus construction, navigation, and rehearsal form a loop in which listening leads to changes in material, mapping, and form.

The duo records and selects material, imports it into each engine, tests its playability with the controllers, revises corpus and mappings, and rehearses a performance. The observations below derive from this iterative practice and joint reflection.

Querying is neither transparent retrieval nor model-independent transformation. A corpus change alters the available fragments or latent states, requiring the performers to listen, remember, and recalibrate. This capacity to support and frustrate learned expectations is the limited, relational sense in which the corpus acts as a partner.

4 THE INSTRUMENTS

4.1 Performed Configuration

The topology remains fixed: one performer couples Mosaïque to the Buchla Thunder, while the other couples Wænderer to the Erae II. These are composite instruments

rather than interchangeable displays of two engines; performer, controller, mapping, and representation remain coupled. The contrast therefore documents two situated modes of playing and does not isolate representation as a single variable.

4.2 Sound Engines

Mosaïque selects and recombines discrete units positioned through audio descriptors. Fragments remain recognizable enough to remember and revisit local morphologies. Wænderer encodes the same recordings as latent frames and reconstructs corpus-aligned trajectories through the frozen decoder of the VAE. This supports continuous movement between retrieved states while making a sound less directly traceable to a source event. Both systems depend on an authored corpus; Wænderer additionally introduces the learned prior of an externally trained model.

4.3 Gestural Interfaces

The Thunder was chosen for Mosaïque because its pressure-sensitive neoprene surface supports polyphonic position, velocity, and aftertouch without a visual map. Regions address ranges of the corpus, so repeated playing builds muscular and auditory memory around recognizable fragments.

The Erae II gives Wænderer a contrasting orientation: its LED matrix displays a spatial map derived from active corpus data. Contact begins an event, while continued movement steers mapped parameters and latent-frame retrieval. Its visible topology supports spatial comparison where the Thunder privileges tactile recall.

4.4 Gesture and Interaction

Discrete therefore describes contact onset, not the whole interaction. The Thunder-Mosaïque performer articulates and revisits units; the Erae II-Wænderer performer steers continuous trajectories from touch. In both, small positional changes redirect the output, but recognition and control are distributed differently across corpus, representation, mapping, and embodied memory.

5 THE PIECE: BURNT MEMORIES

At the opening, alternating contacts make the configurations easy to attribute. Thunder-Mosaïque answers with bounded fragments related to localized gestures, while Erae II-Wænderer extends events into smoother trajectories. The contrast establishes identity as a recurring way of articulating shared material.

When selected corpora change, that attribution becomes less stable. A familiar region or movement no longer returns the same fragment or latent neighbourhood; the performers respond by listening and recalibrating rather than relying on an invariant map. Corpus non-neutrality becomes audible here: available material perturbs the gesture-sound relation and redirects the exchange.

Reverberant diffusion and progressively accumulated loops then carry earlier events beyond the gestures that produced them. By the ending, Mosaïque fragments and Wænderer trajectories form an enmeshed stream in which source and performer attribution becomes difficult. The ending therefore stages, rather than resolves, the question of whether shared material preserves individuality.

6 DISCUSSION

In this performance, *Burnt Memories* made the corpus non-neutral through prior acts of recording and selection and through each engine's reorganization of those sounds. Mosaïque supported recognition and recombination; Wænderer's learned latent mediation supported continuity while loosening source traceability. Corpus changes could therefore unsettle mappings the performers had begun to remember. We observed this as a distributed effect of material, representation, model, mapping, controller, and performer, not as agency located in one component.

The fixed topology limits the contrast: differences cannot be assigned to descriptor versus latent representation independently of the controllers or the performers' histories. The contribution is therefore methodological. Close reflection on one duo's rehearsal and performance can expose how data representation becomes embodied in a composite instrument. These observations are specific to the sounds and interfaces; the questions of recognition, resistance, and differentiation can guide other practice-led inquiries.

7 CONCLUSION

Burnt Memories shows how constructing and querying a shared corpus can become compositional acts without treating data as an autonomous agent. In this duo, two composite instruments made a shared history alternately recognizable, transformable, and difficult to attribute. The work offers a situated method for examining how corpus, learned representation, interface, and gesture become musically coupled.

8 REFERENCES

- Bryan-Kinns, N., Wszeborowska, A., Sutskova, O., Wilson, E., Perry, P., Fiebrink, R., Vigliensoni, G., Lindell, R., Coronel, A., & Correia, N. N. (2025). Leveraging small datasets for ethical and responsible AI music making. *Proceedings of the 20th International Audio Mostly Conference*, 70–81. <https://doi.org/10.1145/3771594.3771601>
- Evans, Z., Parker, J. D., Carr, C., Zukowski, Z., Taylor, J., & Pons, J. (2024). *Stable Audio Open* (Version 2). arXiv. <https://doi.org/10.48550/ARXIV.2407.14358>
- Thibault, D., & Piazza, D. (2023). *Virtual analogies—Playing with Buchla synthesis concepts*. Librairie formes · ondes.
- Thibault, D., Piazza, D., Allard, M., & Arseneault, M. (2025, September). *Navigating abstract timbre spaces: Instrumental affordances of concatenative synthesis in Mosaïque*. Zenodo. <https://doi.org/10.5281/zenodo.16946851>
- Tremblay, P. A., Green, O., Roma, G., & Harker, A. (2019). From collections to corpora: International Computer Music Conference and New York City Electroacoustic Music Festival. *45th International Computer Music Conference ICMC 2019, ICMC Proceedings*, 223–228.