

Pain Creature

VINCENZO MADAGHIELE, Department of Musicology, University of Oslo, Norway

ARIFE DILA DEMIR, Estonian Academy of Arts (EKA), Estonia

Additional Key Words and Phrases: Embodied interface, Improvisational dance, Movement-based interactions

ACM Reference Format:

Vincenzo Madaghiele and Arife Dila Demir. 2024. Pain Creature. 1, 1 (September 2024), 5 pages.

1 PROGRAM NOTES

Pain Creature is an interactive wearable instrument for improvisational movement and sound-making. The instrument materializes the distinct qualities of the performer's chronic pain through visual-tactile-auditory aspects. In this semi-improvised dance performance, Pain Creature embodies the dancer's pain as an unwanted presence, a parasite living on her skin that responds to touch with abstract sonic utterances. The piece unfolds as the dancer explores her relationship with the creature, accompanied by a texture of evolving electronic sounds generated by a live electronic musician. As the piece progresses, the performer explores the choreographic and sonic possibilities of the instrument in a dialogue with the electronic sonic background.



Fig. 1. Pictures from the premiere of the Pain Creature performance at Vent Space Gallery in Tallinn, Estonia. Photography by Kadri Tiganik

2 PROJECT DESCRIPTION

Pain Creature is a textile musical instrument that materializes the second author's experience of chronic pain. It is an instrument for improvisational dance and sound-making. The performance we present portrays the story of a chronic pain experience, inspired by the autobiographical research of the second author. A detailed discussion of the artifact, including its design process and its technical description can be found in the full paper that we presented at this conference, titled *Pain Creature: interdisciplinary collaboration in the design of an embodied textile instrument* [3], and in the second author's dissertation [1].

Licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). Copyright remains with the author(s).

2.1 The artifact

Pain Creature is a wearable textile instrument that is worn on the back. The instrument is the result of a collaboration between a sonic interaction designer (Madaghiele, first author) and an interactive textile designer (Demir, second author). It was developed as part of Demir's PhD project on interactive wearables, in which she investigates textile interfaces to promote somaesthetic awareness of the wearer's chronic pain [4]. The project employs the soma design methodology [2], which proposes to leverage the expressiveness of bodily phenomena for the design of interactive wearables. Specifically, this artifact is the result of the second author's autobiographical research on her own pain experience. The second author is a woman who experiences chronic pain in the upper back; she is also a certified yoga instructor and an improvisational dancer.

The artifact is the result of a design process in two phases: 1) somatic exploration and 2) material exploration. During the first phase, the second author documented her experience of pain through an improvisational dance experiment in which she moved while listening to her pain. This process resulted in her recognizing five distinct qualities of her pain: 1) Burden, 2) Tectonic Plates, 3) Waves, 4) Warm Touch, 5) Flesh. These qualities were an inspiration for the artifact. During the material exploration phase, both authors of this paper collaborated in developing the physical artifact. For an in-depth discussion of the collaborative design process, we refer to our paper *Pain Creature: interdisciplinary collaboration in the design of an embodied textile instrument* [3].

The instrument is shown in Figure 2. It is composed of a large centerpiece to which five distinct interactive textile arms are attached, each of them representing one of the previously listed qualities of Pain. The arms are crafted using different materials and textile techniques, they are touch-sensitive through contact microphones that are incorporated in their textile structure. A distinct sound synthesis model is associated to each arm, run on a Bela Mini microcomputer that is placed in the centerpiece, which makes it a stand-alone instrument.



Fig. 2. Pain Creature artifact. Photography by Kadri Tiganik

2.2 Performance structure

The Pain Creature performance consists in the second author (the dancer) moving and producing sounds on stage wearing the Pain Creature instrument, as the first author (the musician) generates an additional layer of electronic sounds as accompaniment. The electronic accompaniment employs several algorithmic processes coded in Pure Data (PD) for sound generation.

The PD patch, in Figure 3, is controlled during the performance through a MIDI interface. It consists of a modular system driven by a stochastic sequencer, each module is designed by the first author of this paper. We chose to use the electronic accompaniment to provide a rhythmic background, since the Pain Creature sounds can be relatively static over a long performance. For this reason, the accompaniment is mostly composed of short, non-pitched sounds with a fast attack, as the sounds from the artifact are themselves already providing a strong harmonic background. The electronic accompaniment is composed of digital synthesis sounds without any recorded samples. Inspired by glitch music, we employ clicks and processing techniques such as bit crushing, overdrive and sample crushing. This characteristically digital aesthetics contrasts with the soft, tactile nature of our textile instrument, contributing to a feeling of estrangement.

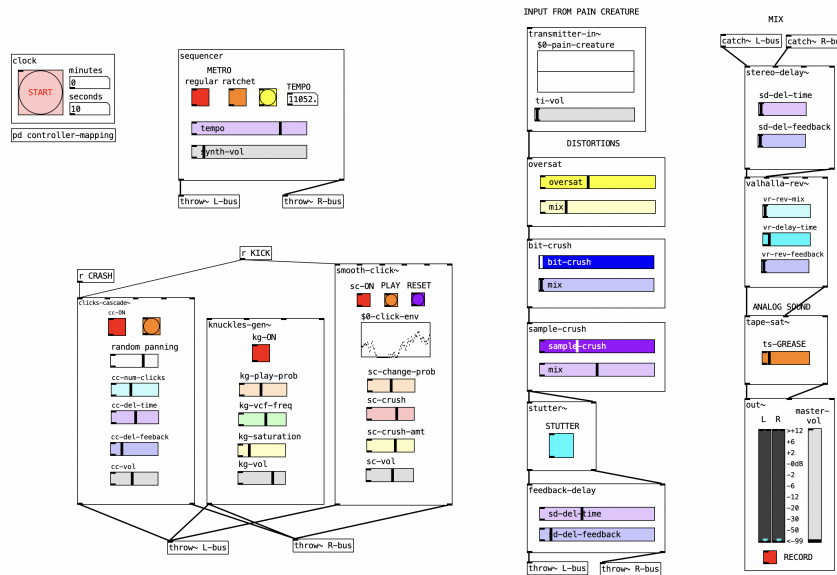


Fig. 3. The graphical interface of the PD patch used to control generative sounds by the musician.

In the piece the performer’s pain is materialized by the artifact, which responds to her touch and her movements. The artifact is presented almost as another actor, a parasite living on the dancer’s body. The piece unfolds as the dancer interacts with the artifact in different ways. The electronic accompaniment acts as a narrative complement to the mental space of the dancer as she deals with her pain. The performance has a macro-structure in four phases, each characterized by different electronic accompaniment. During each section the performers have room for sound and movement improvisation. Each section represents a stage in the chronic pain experience, inspired by the second author’s autobiographical experience:

- (1) **Discovery:** The dancer lies on the ground, wearing Pain Creature. The electronic accompaniment is composed of cascading click sounds and crackles. In this section, the dancer is discovering pain, represented by the artifact, a strange presence on her body. She slowly interacts with the artifact, generating subtle sounds. This segment introduces Pain Creature to the audience, slowly presenting the relationship between movement and sound. As performers, in this section we explore delicate gestures and slow, nuanced interactions.
- (2) **Conflict:** This segment is characterized by the dancer refusing to accept the pain, fighting for it to go away. Her fast and snappy movements are accompanied by distorted synthesized kick drum sounds.
- (3) **Understanding/Exploration:** This segment is a solo of the dancer and Pain Creature, with no electronic accompaniment. Here she gently explores the different qualities of her pain, playfully interacting with the textile arms individually, understanding their characteristics, and combining their sounds. This section provides further opportunities to reveal the distinct gesture-to-sound mapping to the audience clearly since no additional sounds are present.
- (4) **Disruption/Iteration:** In the last section the role of the electronic musician changes from generating additional sounds to processing the sounds generated by Pain Creature in real time. The previous segment ends when the Pain Creature sounds start to be distorted, causing a disruption in the dancer's newfound connection to her Pain. This symbolizes a new evolution in the experience of pain, in which she has to start the demanding process of understanding once again.

The piece has an approximate duration of 15-20 minutes.

3 TECHNICAL REQUIREMENTS

The performance can be set up on a stage or in a more intimate performance theater/gallery environment. A stage space of at least 3x3 meters is necessary for the dancer to move. The stage elements are:

- A carpet on the floor, on which the dancer moves
- A pillow placed on the side of the carpet, on which the musician can sit
- Red lights for illumination
- Textile stage elements hung from the ceiling (provided by the artists, optional)

The sound system is composed of:

- Stereo sound system with two speakers
- Stereo wireless audio transmitter and receiver (eg. sennheiser SK 100 G4 bodypack transmitter, RODE Wireless GO II) (provided by the artists)
- A digital audio interface with XLR/jack input and stereo XLR outputs (provided by the artists)
- The musician's computer and MIDI controller, which will be placed on the floor in front of him (provided by the artists)

4 MEDIA LINKS

- Video excerpts from the performance: <https://zenodo.org/records/11047691>
- Video demonstration of the artifact's use in a non-performance setting: <https://zenodo.org/records/11047674>

ETHICAL STATEMENT

This project is part of Arife Dila Demir's PhD research, funded by the Estonian Academy of Arts (EKA). The development of the Pain Creature performance was partially funded by Nordic Culture Point through the Nordic Mobility Program (MOB2303), and hosted at Vent Space Gallery in Tallinn (Estonia). The code developed for the project is released as open-source software, guaranteeing reproducibility. No human participants have been involved in the research besides the second author. No conflicts of interest are reported by the authors.

REFERENCES

- [1] Arife Dila Demir. 2023. *Extended (textile) soma: somaesthetics of bodily discomforts*. Estonian Academy of Arts, Tallinn (EE).
- [2] Kristina Höök. 2018. *Designing with the Body: Somaesthetic Interaction Design*. The MIT Press, Cambridge, MA (USA).
- [3] Vincenzo Madaghiele and Arife Dila Demir. 2024. Pain Creature: interdisciplinary collaboration in the design of an embodied textile instrument. In *International Conference on New Interfaces for Musical Expression 2024*.
- [4] Richard Shusterman. 2006. Thinking through the Body, Educating for the Humanities: A Plea for Somaesthetics. *Journal of Aesthetic Education* 40, 1 (2006), 1–21. <http://www.jstor.org/stable/4140215>