

Designing Strategic Incongruity: An Audio Device for Sharpening Pencils

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1 Program Notes

This work is a musical performance utilizing a device that incorporates a pencil sharpener into existing audio equipment such as amplifiers and mixers. The performer generates sound by inserting a pencil into the jack socket and performing the sharpening action.

The friction and cutting sounds produced during pencil sharpening are directly captured by a contact microphone and amplified through the audio equipment's circuitry. As the pencil physically wears down during sharpening, the sound irreversibly changes over time, making each performance unique. This work creates a situation where the audio equipment functions as an instrument while simultaneously behaving as an everyday household item. The performer's actions remain both a musical performance and an everyday action.



Fig. 1. How the amplifier sharpens the pencil

2 Project Description

The practice of incorporating everyday objects into music has developed primarily around two perspectives: one focusing on the act of daily use, and the other focusing on the material characteristics of these objects. Within the latter, multiple approaches exist, such as designing devices optimized for the properties of everyday objects or referencing and imitating existing musical forms.

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This research is positioned within the perspective focusing on the material characteristics of everyday objects, but it does not aim to use them as sound materials or to design new instruments or interfaces optimized for them.

The focus of this research lies in the sense of incongruity that arises when incorporating everyday objects into the framework of audio equipment, where musical understanding is strongly shared. Rather than proposing new input methods or acoustic technologies, it is a practice that employs as its interface the shifts in understanding that occur when existing musical forms and operational systems themselves are used as design resources.

A close precedent is *Optron* [1]. *Optron* treats a fluorescent lamp like a guitar, establishing the very discrepancy with existing forms as the work's strength. Its defining feature is creating new musical experiences by thematizing the lamp without compromising its original function. This research similarly explores new musical experiences while strongly referencing existing forms. However, its defining feature is that, by incorporating everyday objects into audio equipment, the appearance remains that of audio equipment.

Amplifiers and mixers are widely understood as “devices for making music” through their appearance and operational systems. This research designs a state where actions understood as performance and actions functioning as everyday objects coexist simultaneously. It does this by incorporating the act of sharpening pencils—an action with a purpose fundamentally distinct from music—into this framework. Therefore, this research is not a practice that presents the incorporation of everyday objects into music itself or new acoustic possibilities. Rather, it is positioned as a practice that, by referencing existing musical frameworks, addresses the conditions under which actions and objects come to be understood as music.

3 Technical Notes

The device used in this work incorporates a pencil sharpener mechanism within the housing of existing amplifiers and mixers. The fundamental design principle was not to add new input methods or audio technologies, but rather to integrate actions serving purposes distinct from music while preserving, as much as possible, the inherent appearance and operational system of the audio equipment.

The pencil sharpener's insertion point replaces the audio equipment's phone jack, utilizing the structural commonality of a “hole that functions when something is inserted.” Vibrations generated by friction and cutting during pencil sharpening are captured by a piezoelectric element attached to the sharpener mechanism and directly connected to the original audio equipment's input circuit. Changes in volume and tone are controlled by the existing knobs and faders.

This research produced three prototype types, differing in pencil sharpener mechanism and the connected audio equipment. In the configuration where a hand-crank pencil sharpener was connected to a guitar amplifier, the pauses and hesitations during sharpening were reflected as rhythmic elements in the sound, and characteristic feedback (howling) occurred due to the structure containing speakers within the enclosure. (Fig. 2) In the configuration connecting multiple electric pencil sharpeners to guitar amplifiers, the sharpening action proceeded at a constant speed, with musical changes primarily controlled by operations on the amplifier side. (Fig. 3) In the configuration connecting multiple hand-cranked pencil sharpeners to an analog mixer, each sharpening sound could be treated as an independent input, bringing acoustic control through fader and equalizer operations to the forefront. (Fig. 4) All these configurations aim to incorporate actions not designed for music into the musical experience, while maintaining their recognizability as audio equipment. Sound generation relies on a physical process of consumption; as the pencil wears down, the performance irreversibly changes.

This performance allows the setup and equipment configuration to be flexibly adjusted according to the venue conditions, due to constraints such as transportation.



Fig. 2. Prototype 1: Overall view / During performance / Pencil shavings



Fig. 3. Prototype 2: Overall view / During performance



Fig. 4. Prototype 3: Overall view / During performance

4 Performance notes

This performance requires a power source, with at least two power outlets.

5 Media Links

- Video: <https://youtu.be/qQnLFyuLugY>
- Audio: <https://soundcloud.com/2026-nime/prototype-1>

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Ethical Standards

This research did not involve studies targeting specific vulnerable populations, experiments imposing physical or psychological burdens, or deceptive methods concealing the research objectives. Based on these considerations, the research was conducted in accordance with ethical standards generally required for practice-based art research and human–technology interaction studies.

References

- [1] Atsuhiko Ito. (2005–). Optron. https://youtu.be/14-vx0tvUH8?si=a3vBKFFE_QacqEGV.