



## Coffee Table: An Interactive Installation



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The interactive installation *Coffee Table* examines the gendered legacies of collecting porcelain and its significance in women's lives, while addressing themes of art, science and technology. It applies feminist hacking methodologies to decolonise technology, with the aim of raising awareness of urban mining and promoting decentralised, ethical and sustainable electronic manufacturing practices. The goal with these methods is to mitigate the environmental toxicity associated with conventional hardware manufacturing practices, such as mining and extraction, which often lead to conflict, discrimination and exploitation. The installation features second-hand porcelain vessels arranged on a circular table with an interactive circuit embroidered onto the tablecloth using conductive thread. This circuit, powered by open-source hardware boards, triggers sounds when embroidered 'buttons' are activated by the gold contained in the old porcelain. The gold, which is urban-mined and incorporated into the circuit for its conductive properties, is used to create an 'instrument' or performative tool. Different sounds are triggered when performers/users interact with the tablecloth by pouring or drinking coffee or adding sugar. The sounds, sourced from coffee-drinking environments and texts, highlight the exploitation of materials like coffee, gold and porcelain from the Global South, brought to the Global North through colonialism and neo-colonialism. A disruptive vibration that to the user feels like an earthquake ends the interactive experience of the installation.

## Coffee Table: An Interactive Installation

### Introduction

In the interactive installation *Coffee Table* (in German *Kaffeekränzchen*), we undertook to explore the legacy of gendered porcelain collecting, alongside its various functions and meanings in women's lives, while also delving into themes of art, science and technology. The installation comprised a collection of porcelain vessels and plates arranged on a circular table, interconnected by circuits and wires. Incorporating circuits and wires into the installation metaphorically represented the interconnectedness of historical legacies, colonial histories (specifically gold mining) and contemporary technologies (utilising gold in computer chips). Additionally, utilising porcelain vessels and plates evoked the history of oppression and the global trade in luxury goods (Yusoff 2019).

The installation is symbolised by an interactive circuit embroidered within a tablecloth using conductive thread. The embroidery was embellished with intricate floral patterns and delicate textures, referencing the exquisite craftsmanship and aesthetic qualities associated with porcelain.

The circuit utilises four open-source hardware boards (Adafruit Audio FX Sound) to activate sounds whenever a button is switched on. These buttons are triggered by antique porcelain coffee cups adorned with gold lustre. Gold, sourced from urban mining, is a conductive material, naturally facilitating electrical conductivity. The tablecloth functions as an instrument or performative tool: whenever one of the performers/participants pours or consumes coffee, or adds sugar, a distinct sound is triggered. These sounds are sourced from natural coffee-drinking environments, as well as from significant texts addressing the themes of coffee, gold and porcelain as valuable materials mined in the Global South and transported to the Global North through processes of colonialism and neo-colonialism.

**Fig. 1.** *Coffee Table 1*, 2022. Photo © Gabriele Krisch. Installation during the Salon of Open Secrets exhibition at Kunstraum pro arte in Hallein, Austria, 2022.



## Visualization

### Collecting Porcelain and the Gift Economy in the Female Legacy

The *Coffee Table* installation delves into the legacy of gendered porcelain collecting and its multifaceted functions and meanings in women's lives. In the 17th century, the trend of adorning rooms with porcelain collections proliferated throughout Europe, with the chinoiserie cabinet emerging as the epitome of exclusivity and ornamentation. Notably, middle to upper class women were prominent collectors of porcelain, utilising it as not just decorative pieces but also suitable vessels for hot beverages like tea and coffee. The adoption of Asian porcelain for this purpose led to a substantial increase in the quantity of porcelain owned by women, legally recognised as part of their personal property and inheritable through the female lineage. However, classifying porcelain vessels within the female line of inheritance was not always straightforward, as they could be designated as either tableware or ornamental items.

Collecting, in general, fulfils deeper psychological and social needs, with gendered collecting serving as a specific example of how individuals utilise objects to construct their identities. Ceramic collecting by women can be interpreted as a manifestation of both conspicuous consumption and social emulation, as women sought to emulate women of higher social standing. Acquiring and displaying ceramics within the domestic sphere not only replicated patriarchal norms but also gave women opportunities to actively imbue their lives with significance and to signify belonging to their social circles. Porcelain transitioned from its utilitarian function to an aesthetic one, prized for its tactile and visual qualities and used to adorn visual presentations. If employed for practical purposes, porcelain was typically reserved for ceremonial occasions such as hosting esteemed guests.

Similar to other forms of art, ceramics assumed additional significance as status symbols, reflecting the owner's tastes and serving as a platform for displaying cultural refinement and specialised knowledge. As the ability to appreciate such items inherently conferred a form of power on the owner, which was particularly important for women, ownership was not necessarily a prerequisite for enjoyment. Initially, female collectors were rare because of their limited access to financial resources, education and autonomy. However, by the 1960s, their numbers had begun to increase, facilitated in part by the cultivation of social networks through the gift economy among family and friends (Vincentelli 2002).

### Conflict Materials and a New Materialism Approach

Drawing upon the historical legacy of women, we invite participants to reimagine the *Coffee Table* gathering as a dynamic exchange of energies and potentials, elucidated through an electric circuit constructed using ecologically sensitive methods and materials. This reflection encompasses colonial histories and contemporary realities surrounding mining, importation, consumption and the performative aspects of belonging to specific social classes or groups.

The *Coffee Table* installation project is intricately intertwined with the principles of urban mining, upcycling and new materialism (Braiddotti 2020, 26). Upcycling, a form of recycling, involves repurposing discarded or waste materials into new products with increased value and functionality. The use of conductive gold porcelain cups in the installation epitomises the concepts of upcycling and new materialism. Gold, traditionally associated with jewellery and high-value financial transactions, is a safe investment. However, repurposing it as a conductive material within an electric circuit, enclosed by delicate porcelain on a conductive tablecloth, uniquely amalgamates art, technology and sustainability.

New materialism, a theoretical framework that acknowledges the agency of matter (Bennet 2010; Coole and Frost 2010), including minerals and metals, in shaping human experiences and cultures, challenges the notion that humans are the sole agents of change. *The Coffee Table* installation exemplifies this perspective by repurposing gold porcelain cups, recognising the role of gold in shaping human technology and culture while also condemning the human suffering associated with gold mining. By promoting sustainability through the use of upcycled gold on porcelain, the project acknowledges the significant social and environmental impacts of mineral extraction in global trade, contemplating avenues for establishing more equitable and sustainable relationships with natural resources.

*The Coffee Table* project adopts a decolonial perspective, shedding light on the underlying social and environmental injustices inherent in the computer-chip industry. The use of upcycled materials to construct an electric circuit challenges dominant ideologies that promote economic growth through the exploitation of peripheral regions, with the aim of fostering awareness and critical dialogue around imperialism and capitalism. Furthermore, the project initiates discussions aimed at disrupting the silencing of those who have witnessed violent histories of resource extraction in the so-called Global South.

## Hardware and Circuit

The electronic circuit was meticulously hand-embroidered onto a white cotton circular tablecloth measuring 90 cm in diameter, employing industrial conductive thread for this purpose. The floral motif was designed to accommodate four participants seated at the table, alongside various hardware actuators, including at least four coffee cups and saucers, two vessels and a sugar pot.



**Fig. 2.** *Coffee Table 2* (detail), 2023. Photo © João Nunes. Installation during the *Coffee Table* exhibition at the Artistic Ceramics Biennial in Aveiro, Portugal, 2023.



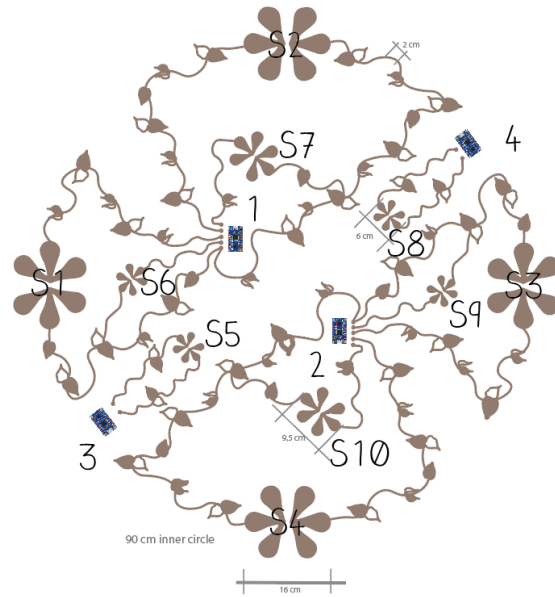
Our porcelain set was procured from a second-hand market, which meant the existing lusted gold had to be adapted to integrate it seamlessly into our circuit. This involved removing and adding gold parts to ensure conductivity in the appropriate locations. Throughout this process, we endeavoured to employ non-invasive techniques, acknowledging the agency of the porcelain. Gold was removed using a specialised handheld micro-sanding tool, while gold was added using the original technique of applying gold lustre through painting and firing in a ceramic kiln.

**Fig. 3.** *Coffee Table 2* (detail of the light sensor and gold lustre applied in the saucer), 2023. Photo © João Nunes. Installation during the *Coffee Table* exhibition at the Artistic Ceramics Biennial in Aveiro, Portugal, 2023.



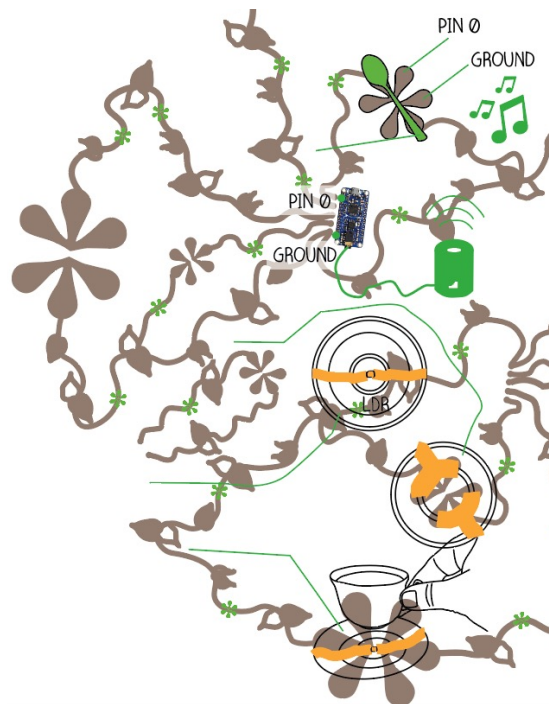
Our circuit comprises ten switches connected to four distinct Adafruit Audio FX Sound boards, each represented by a floral motif divided into two sections. The connection between the porcelain and the conductive thread is established through the gold located at the bottom of each porcelain piece. Placing these pieces on top of the floral motif closes the circuit, triggering a corresponding sound. Boards [1] and [2] are each linked to four different switches, while Boards [3] and [4] are each connected to one switch. Four of the switches are activated by LDRs (photoresistors/light-sensitive sensors) integrated into the coffee saucers beneath the cups. Upon lifting the coffee cup, the light sensor is engaged, closing the circuit and initiating a sound. The remaining six switches are open within the circuit and can be activated (or closed) by any porcelain piece, or even a metal spoon.

**Fig. 4.** *Coffee Table* circuit design with ten switches and four sound boards.



We use the Adafruit Audio FX Sound Board Trigger featuring a 2MB flash memory. This open-source, cost-effective board is user-friendly and does not necessitate programming. It accommodates up to 11 pull-up switches that can be effortlessly connected to sensors by linking one side to the trigger pin and the other to Ground. The board offers five distinct ‘trigger effects’, allowing various functionalities such as playing a file once, looping it through triggering or continuous activation, playing a random sound, or advancing to the next sound. Audio files are uploaded via drag-and-drop from the computer to the controller, with files appropriately renamed according to the desired effect and formatted in WAV or OGG. The boards are affixed to the circuit through sewing with the same conductive thread.

**Fig. 5.** *Coffee Table* infographics of the interaction system on the embroidered tablecloth.



## Sound

Three of the sound boards are connected to a four-channel sound mixer via mini jack to jack sound cables, which feed into two-channel active speakers. Another sound board is linked to a transducer speaker via a small amplifier. The transducer speaker is directly affixed to the underside of the tabletop. When the embroidered switch connected to this board is activated, the table vibrates, causing the porcelain to tremble in unison, faking a little earthquake.

For the auditory component, we recorded various sounds, including ‘drinking’, which are triggered whenever the cups are lifted, as well as the sounds of porcelain clinking and testimonies from project collaborators who research urban mining from their respective global locations (e.g. Ghana, Indonesia, Cuba).

## Installation and Performative Set

The installation debuted alongside a performative enactment during the Mz\* Baltazar’s Laboratory Salon of Open Secrets exhibition in 2022 at Kunstraum pro arte in Hallein, Austria; and subsequently in 2023 at the Artistic Ceramics Biennial in Aveiro, Portugal. In the former event, artists Patrícia J. Reis and Stefanie Wuschitz presented a 15-minute performance in collaboration with artist-performers Anna Watzinger and Olivia Jaques, all of whom are active members of the Mz\* Baltazar’s Laboratory collective. This performance began with all artists participating in the enactment of coffee drinking as a ritual traditionally associated with femininity, while seated in silence around the table. At the 5-minute mark, a shattering sound emitted from the tablecloth, signaling that Watzinger and Jaques should assume control and expand the performance to engage the audience, incorporating elements such as cleaning supplies, mirrors and eventually a cake.

**Fig. 6.** *Coffee Table 2* (detail of the performance), 2023. Photo © João Nunes. Installation during the *Coffee Table* exhibition at the Artistic Ceramics Biennial in Aveiro, Portugal, 2023.



In the subsequent performance in Portugal, Reis and Wuschitz collaborated with local performers Ana Rita Carvalho and Silvia Amado in a 22-minute act. In this rendition, interactive sounds triggered by the installation were integrated into a previously recorded main soundtrack

featuring testimonies from our international project collaborators on the subject of ethical hardware, providing their unique perspectives.

Our project collaborators include Gameli Adzaho and Seyram Avle from Ghana, Milton Raggi from Cuba, Maria Antonia González Valerio from Mexico, Saad Chinoy from Singapore, Irene Agrivine from Indonesia, Hannah Perner-Wilson from Germany, and Rajina Shrestha from Nepal.

The installation was also presented in an interactive format that invited the public to participate during the *SOS 2.0\_ Fürsorge ist die Schwester der Autonomie exhibition at the Medienwerkstatt* in Vienna, Austria, 2023-24. The installation is accompanied by a full manual describing, in detail, all of the necessary steps to make and program the tablecloth.

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Video documentation of the second performance can be found here: <https://vimeo.com/manage/videos/883699045>

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