Planographic Printing on Ceramics

Access and Alternative Possibilities in Lithographic Mark Making

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to explore a medium that is historically challenging to gain access to because of challenges of getting to learn processes within a traditional lithography workshop.

I developed this process as part of a thesis project serving as the capstone for my Master's of Arts in Interdisciplinary Design, completed during my last semester at the College for Creative Studies in Detroit, Michigan. The idea emerged within this project to create a low fidelity lithography workshop process which merges my understanding of Fine Arts, Craft and cooperative creating, which resulted in the process described here. A note, reminder, and invitation: reflecting on my own artistic process, I would just like to encourage readers to consider how a practice, most of the time, is not materialized in a single object, in full, or all at once. The practice and artistic value instead exists within the consciousness of the artist. While sometimes the value of practice can be seen in the artwork, or process documentation– the practice, emergence, and learning is a very deeply an ongoing experiment.

Content

Introduction

This PDF Manual is an information carrier, such as limestone or the aluminium plate in lithography, or in our instance, a ceramic surface. Readers across time and space are recipients of knowledge which is delivered via the contemporary technological vessels: when reading something digital or physical printed off on a laser-jet or ink-jet, this thread of thinking carries us into the present moment from a long history of printmaking and distribution of published textual and graphic works. You may have downloaded this PDF to your phone or printed it at home, your work, or your local library. As such, these processes can be read as an installation, as well as a point of reference and an educational DIY Video.

The pages that follow attempt to demonstrate, embody possibilities for creation within, and demystify a small part of lithographic practice for people who may not be familiar with the process. In distributing knowledge about printmaking, lithographic history, and experimental processes of planography, some readers might call into question why this is a PDF and not something printed planographically. In answer: to provide widespread accessibility

What is lithography?

Do you remember the first time that you saw a print? What technique was it? Black and white or multi color? My earliest memories of lithographic works are by Käthe Kollwitz, active between the 19th and 20th century. In her dark black and white works, we see a distinct drawing style reflecting the cultural zeitgeist of her time. Kollwitz drawings are fast and immediate. The depicted people seem to be still moving. Reminiscent work by Käthe Kollwitz is *Nie Wieder Krieg!* or *Abschied und Tod* (Käthe-Kollwitz Museum Berlin, 2025) captures this aesthetic as well, along with the rest of the body of her lithographic work after the first World War. In 1924, she created posters, such as *Brot!* for a collective poster portfolio, as a reaction to the current situation in Post War Germany (Kearns, 1976, p. 17). Lithographic aesthetics can in part be attributed to the way this printing technique has the ability to free the artist from worrying about the printing technique and to just concentrate on their drawing. They can be more spontaneous than within etching and thus have the possibility to be more immediately reactive to life and current events (Mayor, 1972, p. 395).

reproductive power through easily-made copies (Weisberg, 1990, p. 9). This power is exemplified in the distribution of artist monographs and nonfiction books that were popular in 19th century Germany, such as *Die Kunst herausgegeben von Muther* (Kitschen, 2021, pp. 94–95). In such works, artistic treasures produced throughout human history had the possibility of being viewed by large audiences, thanks to low production costs and high reproduction capacity realized via lithographic printing (Imorde & Zeising, 2019, p. 16).

In 1839, color made its way into lithography through registering techniques, and lithographers used colors to scale tones and to mix and blend color. Soon in the UK, USA, and Germany, lithographs were produced for labels and packaging, children's books and illustrations, posters, bill heads, and artist prints (Mayor, 1972, p. 393). In some lithography workshops, you can find historic limestones with label drawings on them. Lithography, with its economic ability to cut costs for publications, became very popular throughout the 19th and 20th centuries. For example, they were used for èpinal pilgrim prints in the Vosges

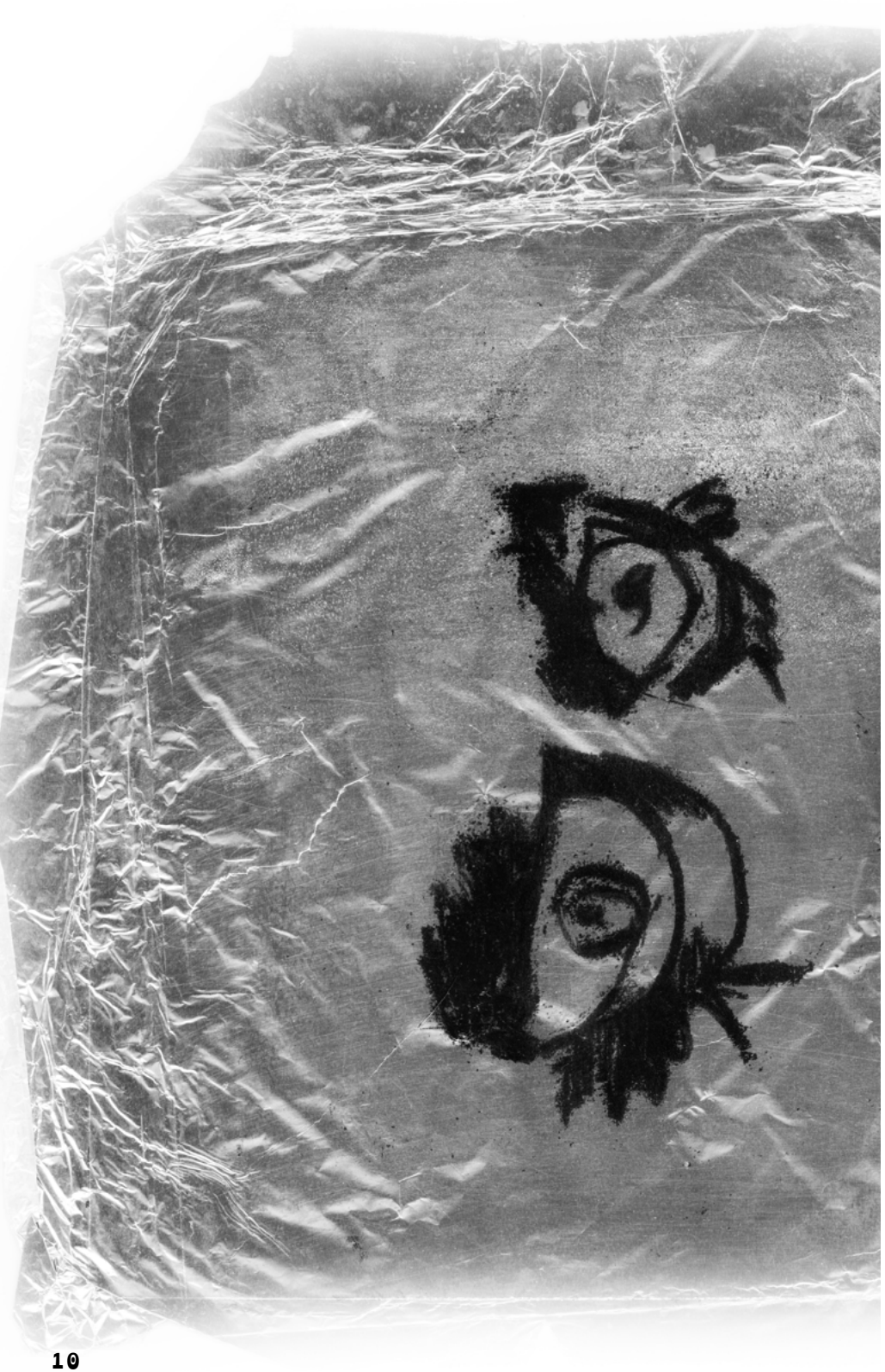
In 1796, Aloys Senefelder invented lithography, a planographic printing technique, by recognizing that the principle of grease not mixing with water can be applied to printing processes. Lithographs are traditionally and historically printed on sandstones from Solnhofen, Germany. Lithographic technologies later expanded as plate lithography developed, resulting in eventual innovations that led to commercial offset printing (Croft, 2003, p. 12). In the past 200 years, lithography has moved to the epicenter of the chemical printing industry and snowballed from Senefelder's initial transfer process and development of specific presses. The popularity in lithography has risen and fallen at different periods since its inception. At different historic moments, it has been considered industry standard, or alternatively viewed as inferior for commercial use, seen as a hobbyist printing technique (Devon, 2010, p. 1).

By 1800, Senefleder had patented his lithographic technique, and 19 years later, lithography was used for commercial printing. Parisian artists used lithography to produce fine art prints, while the Philadelphia Magazine and the British Press used lithography for the

production of their publications (Mayor, 1972, pp. 391–392). Artists immediately started to use lithography to create prints. In the UK, lithographs were combined with watercolors, while French artists created dense and dark prints. The history of 19th century lithography would not be complete without the French artists Géricault, Delacroix and Goya (Mayor, 1972, pp. 391–393). In the early 20th century lithography became popular within the common canon of Western artists: Picasso, Chagall, Munch, and Miró (Devon, 2010, p. 1).

Photography intersected the lithographic world in 1855, and photolithography necessitated a more delicate printing process, which led to the creation of the offset printing machine. In 1901, metal plates began to be used for lithographic printing and 3M started to produce pre-coated plates for this purpose (University of Houston, n.d., pp. 2–5).

Within book publishing, lithography offered possibilities to print illustrations less expensively. Lithographs potentiate communicative power by combining images with text and didactics, and they amplify



mountains or for lithographic posters by Jules Chéret and Pierre Bonnard (Mayor, 1972, p. 417).

European workshops and creations of the first half of the 20th century inspired US-American artists to seek out workshop opportunities in the United States (Devon, 2010, p. 1). Since the 1960s, lithography has been experiencing a renaissance in the United States (Adams, 1985, p. 50). In the 1960s, June Wayne founded the Tamarind Lithography Workshop in Los Angeles, where she helped lithography rise in popularity not only in the United States but also around the world. She was the director until the 1970s, when Tamarind moved to Albuquerque, New Mexico (Tamarind Institute, n.d., para. 1). Wayne and the Tamarind Institute influenced the declining art and print market through their flourishing lithography production. During this period, lithography established itself as an autonomous printing method and as an art form (Devon, 2010, p. 35). Notable artists who created work at the Tamarind Institute in New Mexico include Jesse Eichek, Josep Albers, Sam Francis, Ruth Aswa and Judy Chicago.

Furthermore, with the founding of Universal Limited Art Editions by Tatyana Grosman in 1957, lithography pushed forward in the contemporary arts, through publishing only original prints. At Universal Limited Art Editions (ULAE), American artists like Johns, Bontecou, Frankenthaler, Newman, Marisol, Rosenquist, Motherwell and Twombly started working with lithography (ULAE, n.d., paras. 1–5). The common canon of art highlights mostly work by men, such as in the book *Prints and People*. Workshops are more or less dominated by male master printers (only about 37 percent of the Printer Training Program students that were admitted between 1960 and 2019 were female (Adams, 2019, p. 24). But we cannot allow ourselves to not acknowledge women in lithography. Women have been active participants in the lithographic world. In 2011, the National Museum of Women in the Arts featured the exhibition: *Pressing Ideas: Fifty Years of Women's Lithographs from Tamarind*. 42 woman artists were featured, including Polly Apfelbaum, Annie Albers, Judy Chicago, Dorothy Dehner, Elaine de Kooning, Hung Liu, Louise Nevelson, Jaune Quick-to-See Smith and May Steves (NMWA, n.d., paras. 1–3).

In 2010, the Tamarind Institute noted during their 50th anniversary celebration that lithography finds itself in a crisis once again. They posture that this may be due to the economic crisis or the returning view on print and craft as handicraft. This has resulted in the dismantling of workshops at institutions, due to the lack of interest in lithography (Devon, 2010, p. 37).

Why would you change something that is already working?

Lithography is an old and solid printing technique, which once you have it down, it is fail proof. Its also has inherent qualities within it practice that lead it to its current crisis, including foremost inaccessibility, and adjacently, through its lack of alignment with contemporary values of artists and printmakers mindful to avoid techniques that could possibly cause ecological harm. Through my research and my practice within traditional lithography I have found that the chemicals used in the process are quite toxic. We use nitric acid, particulate matter and

why don't I create a professional practice that works within my own four walls, independently of institutions?

While workshops open to the public provide greater access to printmaking techniques, they don't solve the issue of accessibility entirely. It is expensive to set up a workshop with all its heavy-duty tools and materials. Limestone is not readily available. Kitchen lithography is a practice which is difficult to master. It is not as reliable and relatively frustrating. This interferes with the practitioner's efficiency and sense of productivity, which itself makes lithography seem less accessible. Therefore, there is a search for a more sustainable method, using materials that we can find in our homes. This connects directly back to the history of lithography, which has always been dealing with accessibility and the means of production. Both creating workshops where artists and printmakers can produce prints, but also where prints can be distributed and bought cheaply. In these times of the early 21st century, we find ourselves again in an accessibility crisis, through the institutionalized lithographic practice.

turpentine. Through the work of printmakers like Émilie Aizer and Dwight Pogue the doors have been opened for both more access and less toxicity through using cola or tannic acid for etching limestones and aluminum plates / foils (Aizier, 2017, pp. 13–19; Pogue, 2012, pp. 26–28). However, these techniques have downsides as well, which have led me to develop this Ceramic Planographic Practice.

In 2021, I encountered the space of lithography for the first time in a lithography workshop by Johannes Witt during my foundation year at the Weissensee School of Art and Design Berlin*. I was fascinated by the immediacy of printing my marks; the drawing that I had made just a day ago could be reproduced within hours. While not understanding the chemistry yet, the reaction of the etch on the stone, makes lithography intriguing for me. Soon I became obsessed and comfortable with this printing technique, the workshop and my new environment. In 2022, I got a tutor position for lithography and immediately started with

* Lack of access is easily demonstrated in the institution's own stated numbers, as of this writing, they published that only 12 out of 450 applicants are accepted on average to their program.

teaching the foundation class that I was part of just two semesters before. While experimenting with teaching, I pushed the boundaries of lithography, printed on fabrics, used metal plates and worked within the kitchen lithography method. This also pushed me to ruminate on the idea of going to the United States to further my practice in lithography. The idea of having and wanting to attend the Tamarind Institute and of experimenting with lithography, made me apply for the German Fulbright Foreign Scholarship, which I was gratefully awarded. In the end, I did not arrive in Albuquerque, but in the beautiful midwest, Detroit, Michigan. In Detroit, I familiarized myself with ceramics and wheel throwing. To fulfill my own promise as well as my promise to Fulbright Germany to merge a new practice with an old one, I started the printing on ceramic surfaces project in October 2024. These are all only institutionalized experiences. When I started working within public workshops and thinking about access to fine art practices, for both the layman and also my professional practice after university, I could not get around the question:

would work; however, during the workshop foil started to rip and ink started to stick. In the end, there was a class full of frustrated students, who instead of mastering kitchen lithography, mastered the art of patience, troubleshooting, and working in teams, and did in the end print pieces that they felt proud of.

Reflecting on the experience, I recognize how frustration in approaching a printing practice has the possibility to discourage the printer. Will the students do it again? Will they be inspired to experiment further in printing? It's hard to know.

From the Workshop to the Kitchen, Lithographic Experiments in the 2010s

In 2011, Émilie Aizer expanded access to lithography through her Kitchen Lithography Method. She used aluminium foil as the matrix (carrier) for chemical printing, using ingredients such as soda and vegetable oil. Surprisingly, her decision harkens back to Aloys Senefelder, who initially opted to print on Solnhofen Limestone due to its cost-effectiveness compared to the cost of metal plates during his time. Now, in the 21st century after more than 200 years, lithographic stones have become extremely rare to acquire and shops have

closed down, whereas aluminum foil is a readily available kitchen supply (Aizier, 2017, pp. 8–9).

Concisely, Aizier's Kitchen Lithography Method utilizes cola as an etchant for the aluminium foil*. The phosphoric acid in the cola helps to make the drawing areas on the aluminum hydrophilic (water accepting). The 3.0 pH in the cola creates corrosion on the non image areas on the aluminium (Aizier, 2017, pp. 13–15). For the washout, Aizer suggests vegetable oil or denatured alcohol. For printing, she uses oil paint or lithographic ink (Aizier, 2017, pp. 15–19). For additional resources on kitchen lithography, *Hand Printing at Home*, a book by Laura S. Hantke and Lucas Grassmann, shows the detailed process of kitchen lithography. They have also been exploring large scale printing, with help of their windows and shower (Hantke & Grassmann, 2017, pp. 94–96).

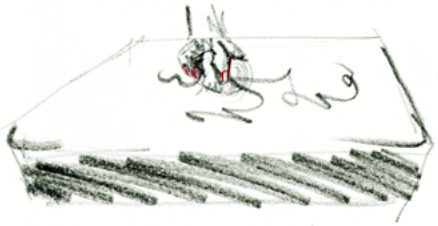
This technique has created great possibilities for widespread access to lithography, and is deeply appreciated by many printmakers, but it also has its inherent challenges. In 2023,

* More details on Kithcen Lithography can be found on Aizier's Blog: https://www.atelier-kitchen-print.org/emilie-aizier/

while guiding students through the lithographic process in a group workshop titled *EXQUISITE CORPSE IN MUSEUMS *2D Kitchen Lithography +3D PRINT* with my colleague Vinh Giang, I personally reflected on difficulties working with Aizer's Method, which led me to develop this ceramic planography process. Weeks before we hosted the week-long workshop at the Heinz-Brandt-Schule in Berlin, I was working in the lithography workshop at the Weissensee School of Art and Design Berlin day and night experimenting in kitchen lithography to make sure that the students would have a successful printing experience. I was under stress and pressure, and honestly, things kept going wrong, nothing was working out…

Johannes Witt was the workshop head and lithography teacher I trained under, and he also seemed challenged by the method as he witnessed my experiments and struggles: we started graining the aluminum foil, cleaning it, flattening it precisely, but we always had issues. We even started to use plate etching, which had some success in the end, but was not ideal. By the time the students started working on their lithographs, I was confident something

Rosin & Talc



Gum

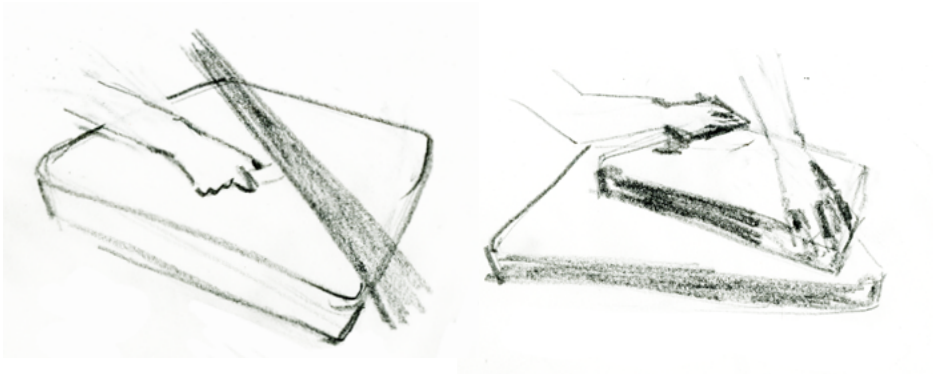
Step 3:

First Etch

An Etch is used to make non-drawn-on areas become hydrophilic (water-attracting), and the drawn areas become hydrophobic (water repelling) and oleiophillic (grease-attracting). In this step, the etch solution is mixed. Then, rosin and talc are distributed over the stone before applying gum arabic and the etch solution. After smoothing, the stone/matrix must dry.

A short description of the Lithographic Process

Lithography is a form of planographic printing, meaning the process is usually done on flat limestone or an aluminum plate. The artist produces a greasy drawing on those surfaces using lithographic canyons, oil sticks, or tusche. After a chemical treatment, only the image, which is oleophilic (oil-attracting) will accept the oily ink, and since it is hydrophobic, it will repel water. The non-image areas in contrast become hydrophilic (water-attracting), accepting the water. An etch separates the image and non-image areas



Leveling Graining

(Antreasian & Clinton, 1970, p. 13). To put it simply, lithography is extensive and procedural. Here, I have compiled the processing timeline of the lithographic process from the Tamarind Book of Lithography*. The basics contain at six stages:

Step 1:

Graining the Stone

Determine whether the surfaces are truly level and grind the stone with abrasives if not (Antreasian & Clinton, 1970, p. 20).

* The Met Museum has created a beautiful step-by-step process overview on their website if you would like further information (The Metropolitan Museum of Art, n.d., paras. 1–9).

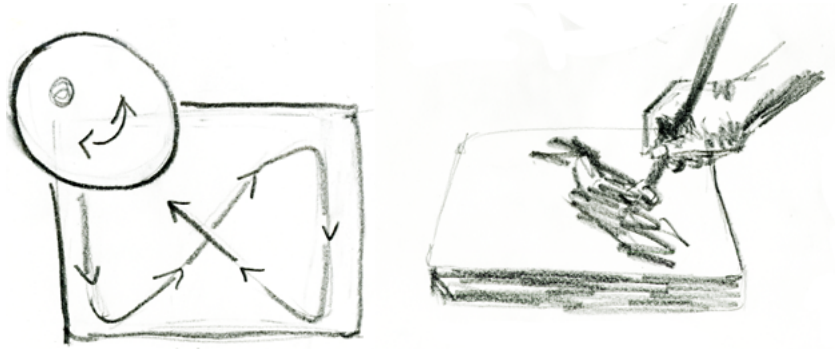


Figure-8 Drawing

Step 2:

Drawing on the Stone

Basic materials like lithographic pencils, crayons, and tusche (Antreasian & Clinton, 1970, p. 29) are used to draw on the stone/matrix, being mindful to keep hands and arms away from the surface because dust and dirt can leave marks on the final image (Devon et al., 2008, p. 137). After completing the drawing, the stone can be checked in a mirror to understand how the image will look after it is printed – it will be reversed in the final print (Antreasian & Clinton, 1970, p. 54).

Step 4:

Wash out

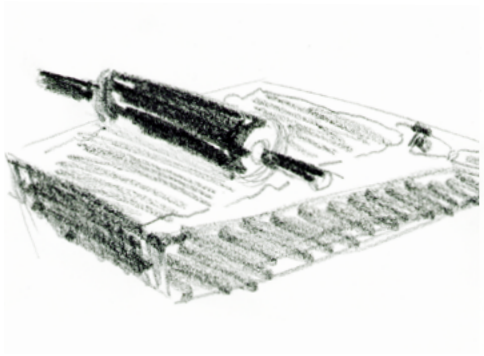
After drying, a thin layer of gum arabic is applied and the stone should be buffed with a cloth. It is then cleaned with lithotine solvent until the drawing is only a faint image before the stone is washed with water and tested by charging the roller with ink and rolling the initial image up to note imperfections and sand/etch them away.

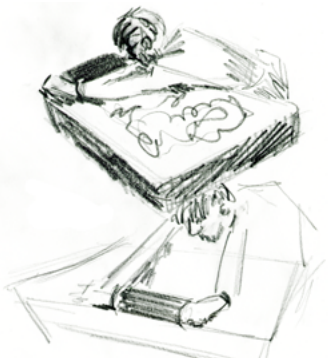
Etch

Step 5:

Second Etch

For the second etch, rosin, talc and then gum arabic are again applied over the stone before another round of etch solution. The second etch is distributed and then wiped off the limestone. Again after wiping, the stone/matrix must dry. (Antreasian & Clinton, 1970, pp. 61–66).





Charging Ink

Inking

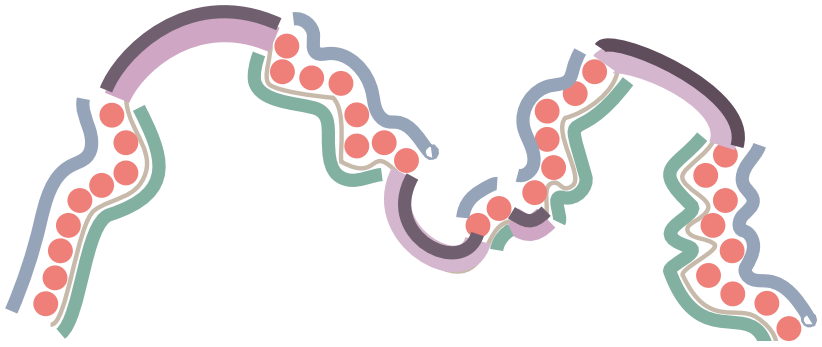
Step 6:

Printing

Following a second etch, paper and ink are prepared. The roller is charged with ink, but . Before rolling, the stone should be dampened lightly. During the inking, horizontal and vertical rolling should be alternated. The paper is then placed, and both the paper and inked stone/matrix are sent through the press (Antreasian & Clinton, 1970, p. 87–93).

Water film
Gum arabic adsorbed
Calcium arabinate

Water accepted through adsorbed gum
Printing Ink
Grease reservoir



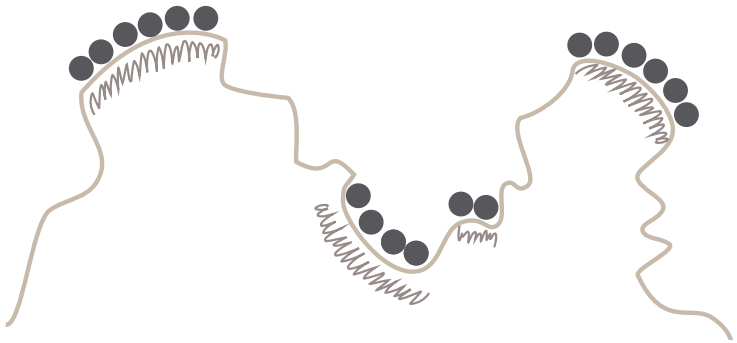
Chemical Process Explained

The steps for lithography are extensive and can be overwhelming to describe, but can be more intuitive in practice. The science behind it is also complex. I describe it here to better explain what happens when lithography is transferred from limestones to ceramic.

The hard and brittle Solnhofen limestones that were initially used in lithography contain calcium carbonate and are compact and porous, which allows them to naturally maintain a water layer on the surface when wetted (Antreasian & Clinton, 1970, p. 20). This surface carries the image which is rendered as an oily drawing. Rosin and talc are brushed on top of the (oil-based) drawing, and because both are acid-resistant, they protect the drawing from the etch. Rosin is insoluble in water and its particles bind together during the etch, while the talc overcomes the repelling of the water based gum arabic and etches away from the greasy drawing (Antreasian & Clinton, 1970, p. 66).

Etching starts after the maker applies rosin and talc. The greasy fats, soaps, and waxes from the drawing material lie on top of the

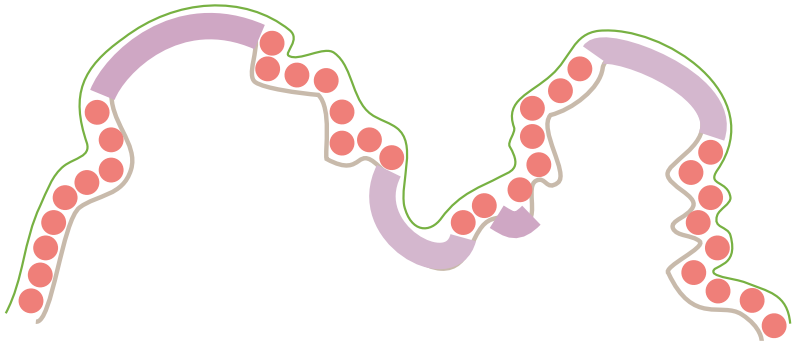
Initial drawing
Grease penetration
Calcium Carbonat



stone and also penetrate into the surface, the traditional calcium carbonate of the limestone. When gum arabic is added into the matrix, it adheres to the surface and retains moisture to reject printing ink. When the gum arabic is applied, the soap hydrolyzes and this helps to release more grease from the drawing. The three elements: acid, grease, and calcium carbonate create a non-water soluble soap called a grease reservoir, which penetrate the spatial surface of the limestone the more it is being etched with a gum arabic and nitric acid etch solution (3.0 pH) (Devon et al., 2008, pp. 149–150).

An alternative to nitric acid could be tannic acid instead used for the etch (Pogue, 2012, p.26). The process is very similar to the traditional techniques, as taken from the Tamarind guides. One applies rosin and then talc. Then a solution of tannic etch and gum arabic is applied for two minutes. The etch is allowed to dry overnight. Then Pogue recommends washing out the image with the product D&S BioSolut, which is a solvent that can replace lithotine, mineral spirits and other solvents. Instead of using asphaltum,

Grease reservoir
Gum arabic soluble
Gum arabic adsorbed
Calcium arabinate



he proposes using the product D&S Bio-Blac, which is a Hard-Ground and creates a permanent printing base (Pogue, 2012, pp. 26–28).

For the last segment of producing a lithographic print, we also need to consider the Ink. Lithographic inks are mostly made out of three parts: varnish, like linseed-oil, pigment and modifying agents like greases, waxes, solvent, and dryers (Antreasian & Clinton, 1970, p. 303). When looking for a proper ink, you need to consider its body. Generally the viscosity, or resistance to flow, should be high. Also, it should be sticky or tacky, otherwise the image will grow, and your original drawing might change too much (Devon et al., 2008, pp. 117–118). When working in a lithographic workshop some safety precautions should be taken. Those precautions are also encouraged in a home workshop. These would be using gloves, ventilation, wearing a mask or respirator when necessary and protecting one's eyes (Devon et al., 2008, p. 19). This is especially important when you are experimenting with different acids or solvents.

Possibilities for Etching Ceramics and an Overview of the Materials and Tools

- Talc / baby powder to protect the drawing from smearing
- Rosin (used in sports, such as bouldering)
- Cola
- Gum Arabic or Acacia Gum (sold as dietary supplement)
- Vegetable Oil
- An oil source, such as Lithographic Crayon, Tusche, Permanent marker especially Sharpy works well, Butter, Oil, etc.
- Oil Ink such as Lithographic Ink or Oil Paint
- Water Container
- Sponges
- Brushes
- Ink Roller
- Flat Surface for the Ink
- Sandpaper
- Paper for Printing
- Ceramic Surface
- Cleaning Towels / Paper towel

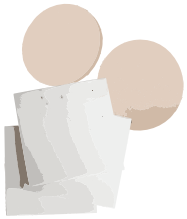
For all the materials listed, first check if you already have them or if you can do a household item swap with a friend. Also it is strongly suggested to check out your local community store, a second hand store, thrift stores, garage sales, etc. Some things you can make by yourself.

As lithography is usually heavily workshop based and requires many materials, it is imperative to note the costs. I will note down critical materials, as well as ones that might be useful additions. As of 2025, during the research phase of this project, I have spent approximately $50 for materials. Some have been borrowed or been supplied by my University; some have been in my supply collection already. Even though this monetary amount is high, most materials will last you for years.

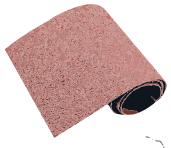
From the aforementioned approaches, certain materials and concepts can be brought onto the ceramic surface. For example, the surface should be flat and porous. We will use greasy drawing materials, such as rosin, talc, and gum arabic. From the Kitchen Lithography method, we will introduce coke and oil. Furthermore, ceramics also contain a certain amount of calcium carbonate, which helps with creating the grease reservoir.

But first, we need to understand whether ceramics are stable enough to be etched. The practice of etching ceramics is indeed common

and widely established. There are a variety of purposes and research that we can rely on. Some outstanding purposes are etching ceramic medical prosthetics (Nakonieczny et al., 2020, p. 1), solar evaporator systems (Gao et al., 2022, p. 264) and also the cleaning of archeological ceramics (Conserve O Gram, 1999, p. 1). The acid can create spatial surface changes in the grain of ceramics (Nakonieczny et al., 2020, p. 8). This is something that we need to happen moderately, to not destroy the surface. The study by Nakonieczny tested sulfuric, nitric, hydrofluoric acids and peroxide. It was found that nitric acid creates the largest degree of change within the grain and surface and could even distort its spatial structure. However, this can be manipulated through its concentration and the time of etching (Nakonieczny et al., 2020, p.8). Gaoyatá also tested the same acids and found out that the nitric solution was not as aggressive (Goyata et al., 2018, pp. 367–370). In conclusion, the ceramic surface won't be destroyed through a soft and 3.0 pH etch, making gum arabic and cola good to work with. Here is my suggestion of a basic Material and tool list for etching ceramic:



Thrift store, community store, old and discarded ceramics. You can also make ceramics yourself, you will need to fire them to at least cone 10.



To create a grain on the surface.

Korn's Lithographic Crayons
Rohrers Lithographie Kreide

Charbonnel Lithographic
Autographic Ink

E.g. Pentel Oil Pastel Sets

Petroleum Jelly eg. Vaseline

For this research, I have only experimented with a Sharpie-branded markers, since they have oily residues that are well-known. (If you experiment with other markers, I would love to hear about it.)

Any Baby Powder / Talc
powder will work

E.g. Unique Sports Baseball & Softball Batters Dry Rosin Shaker — Bat Grip

Cheap Coke or Soda
According to Aizier any soda or juice is suitable as long as the pH is 3.0 (Aizier, 2017, p. 58)

Can be from your Tap. If your access to water is not free, a continuous reminder that Water is a Human Right and collectively we can urge our governments to create free access to water!

For the cleaning of everything that has been in contact with the ink. You can use any cheap oil

Gamblin Gamsol Odorless Mineral Spirits

E.g. GE Advanced Silicone Kitchen & Bath Sealant

Cranfield Caligo Traditional Lithography Ink

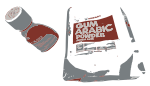
E.g. Blick Studio Oil Colors
Might have to be thickened with Magnesium Carbonate and has to be not water-soluble

E.g. Essdee Professional Ink Rollers
Or make your own Ross Roller.

Fine Pore Sponge
3M Cellulose Sponge

Brushes are everywhere, check first if you have some at home, can ask a friend, or if you find used ones at your local thrift or scraps store. They will eventually break down, so they should not be your highly valued ones

Find any container that you have at home, e.g., take away containers, coffee containers, glass jars. Everything works as long as your sponges fit into them



Gum Arabic or Acacia Gum Powder

Find an old spoon that no one likes to eat with, from your kitchen, or go to a thrift store or get one from your friend's house / cafeteria. You can also carve a spoon out of waste wood

Inking Surface. You can use an old picture frame, a piece of smooth stone, plexiglass etc. Those are sometimes already in your home, or you can find them in your local thrift store / scraps store

You can use any paper you like, newspaper, newsprint, used paper, packing paper, handmade paper etc. Check out your local Scraps Store, your home printer, paper trash cans etc. before you buy new paper for your experiments

Processing of Tiles and Handmade Ceramic Plates (Cone 10 and Unglazed)

Step 4:

Printing an Edition

Prepare the ink: Use only oil ink that is not water-soluble

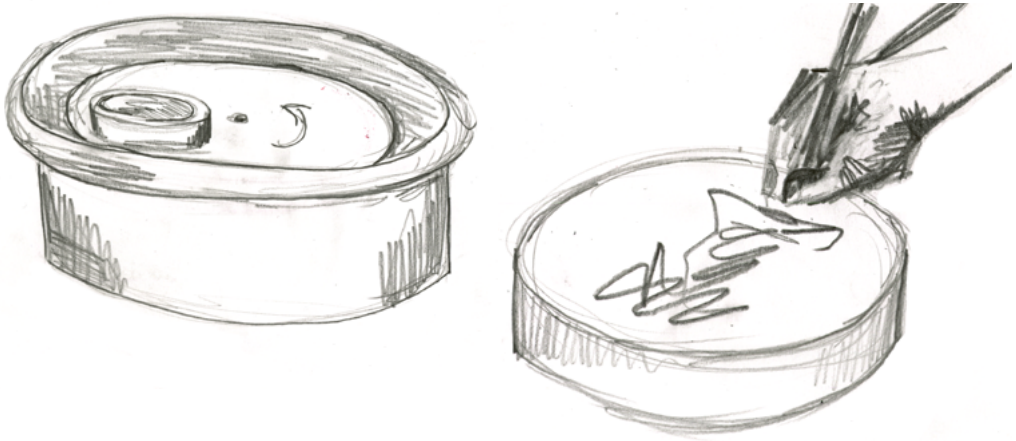
Wet the surface with one of the cellulose sponges; the surface should only be slightly wet.

Charge the ink roller with the ink 4 times. Wet the surface again. Ink the plate with two-three roll-overs, only a slight pattern; take your time to build up the ink.

Repeat this sequence about 4 more times, make sure to change the rolling direction.

Place the paper on the plate. Print the image onto the paper by pressing down on the paper with a spoon.

Try the inking pattern multiple times. It can take some time for the ink to build up; patience is needed. Don't rush it with too much ink, otherwise the image might be distorted.



During my testing and experimenting, I tested different materials on both regular tiles and on hand thrown cone 10 plates. For the drawing, I have found that Shapie, lithographic crayon and tusche, oil pastel and also petroleum jelly can create effective and interesting results. Following the lithographic process and the Kitchen Lithography method, this is the Ceramic Lithography Method:

Step 1:

Sanding the Tiles or Ceramic surfaces

Use a coarse sanding disk, until the surface looks flat enough and then sand with the fine sanding disk.

Step 2:

Drawing

Draw on the image and let the grease soak into the surface of the tile or plate for 12 hours. You can use a variety of greasy drawing materials such as sharpy, lithographic crayon and tusche, oil pastel and also petroleum jelly.

Step 3:
Processing the Stone

Powder talcum over the surface, slightly brush it in all directions

Powder rosin over the surface, slightly brush it in all directions

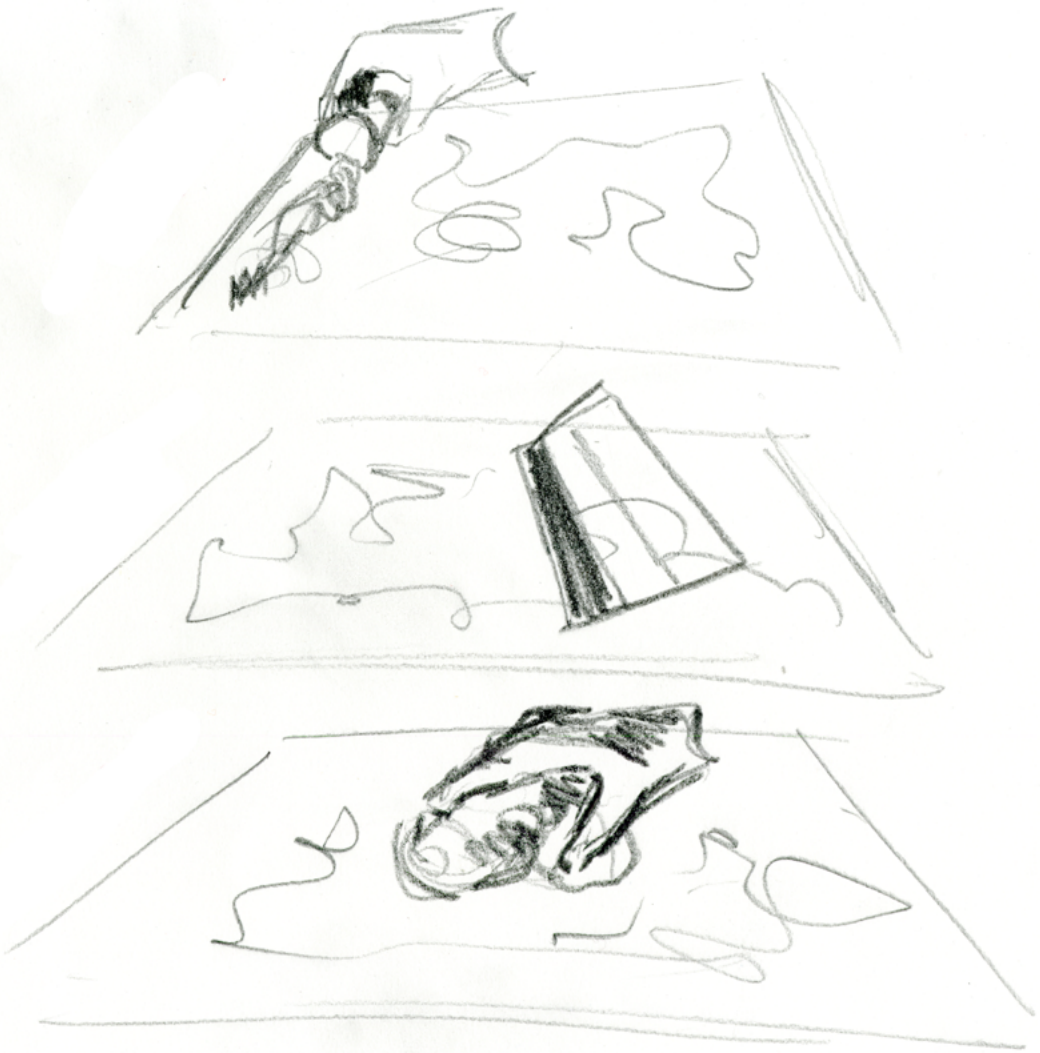
Cover the whole plate with cola; the pH is also 3.0. The entire tile/plate needs to dry out before the next step.

With a cellulose sponge spread a thin layer of acacia gum and leave it for 5 minutes and before wiping to leave a thin layer. The pH is 3.0; let it dry till the next step

No washout or dry washout: put a thin layer of gum arabic on the stone, buff it out and let it dry. Then use mineral spirit to wash the image out, working quickly)

First inking: Wet the stone, roll on ink very slightly, repeat five times

For the last etch, brush a small amount of acacia gum over the tile and then go over to the printing.



Troubleshoot

Each printing experience is different and encounters unique challenges. Below is a discussion of some issues that can occur with troubleshoot suggestions. If you find other troubles, issues and solutions, feel free to share them with me, so that this handbook can be updated.

If the Image is Too Faint:

Try to adjust the pressure during rolling on the ink, make more inking rounds or use slightly more ink. However, this needs to be done mindfully and slowly. Furthermore, it is important to have the image build up slowly and this must be done with patience. When you are printing the image on paper and are pressing down the spoon, you might want to take more time doing so and also increase the pressure slightly. Make sure you observe the paper and that you do not destroy its fiber structure. It could also be that the etch was too strong. Next time, you might need to remove the etch faster. It is always good to let the

drawing sit overnight, so that the grease of the drawing can seep into the ceramic.

If the images Closes Up:

The image can close up very easily during the inking state. First, adjust the amount of ink by taking some away. Second, observe the body of the ink. If it is too runny, you might want to make it more stiff using magnesium carbonate. It could also be that you can solve this through only inking the plate a couple of times and without pressure. Also, notice if the plate is dampened well enough. Does the surface soak in the water too fast? It could be that the gum has not absorbed well enough, and you might want to add more gum. So if the plate has taken on too much ink, you can pour some gum arabic or cola over the plate and rub with a brush over the surface to remove the ink. This also helps re-etch the plate.

If the Drawing Materials Splits Up (Over Etching):

When this problem was encountered, next steps were unclear. It might be useful to opt for a dry washout with thinly applied gum arabic and mineral spirits.

If the Non-Image Areas Take on Ink:

This can happen very quickly that areas that were not intended to take on ink do. This can occur if the plate has not been damped well enough. To avoid this, always remember to slide the sponge over the plate before you ink, first with a wet one and then again with a damp one. However, you can remove those areas that take on ink with fine sandpaper or a sanding stone. Make sure to do this with lots of water and just for a short second and no pressure. You can also opt for gum arabic to remove these spots. If you notice that you use a lot of water, it could also be that the pigments of the ink are floating around the plate after sponging the plate. Adjust the amount of water you use and continue using two sponges, one wet and one damp. First sponge with the wet one and then dry it up with the damp one to avoid this.

Keep in mind that unwanted areas are always easy to remove through sanding and brushing on some more gum arabic.

Wipe the plate with a cloth horizontally one–three times, until the silicone is even.

Cure for at least 24 hours, or use a hotplate.

Wash the image out with water or mineral spirits.

Then print your edition as usual (Devon et al., 2008, pp. 233–235).

Processing Timeline with Silicon Solution or Waterless Lithography on Ceramic Plates

The 3M Corporation developed the waterless lithography method for commercial printing to minimize production time and the use of toxic materials. This is something that we can also adopt and translate into our practice. This is especially helpful for getting started with few materials and when an idea has to be rapidly tested out or a message wants to be spread in a time sensitive manner. So for this, a solution of household silicone (DAO or GE silicone) and mineral spirits (paint thinner or turpentine is possible as well) is mixed. It is applied thinly on the surface, after drawing the image. The silicone resists the oil-based ink, just as water does during the traditional process (Devon et al., 2008, pp. 233–235). Here are the basic materials need:

- Drawing material, such as gum arabic, screen-printing ink, crayon, ballpoint pen, ink-marker, copier machine transfer, toner etc.
- Silicone (DAP or GE, 100% Silicone)
- Mineral Spirit or turpentine
- Mixing container + something to mix
- Squeegee
- Cloth / Paper Towel

- Talc and Rosin
- Paper
- Oil Ink
- Roller
- Surface for Inking
- Mixing container + sth tom mix
- Squeegee
- Cloth / Paper Towel
- Talc and Rosin
- Paper
- Oil Ink
- Roller
- Surface for Inking

Processing Timeline:

Mix silicone mixture, six part silicone and four parts mineral spirits into a honey-like consistency. The University of Saskatchewan suggests mixing 70% odorless paint thinner to 30% silicone (2019).

Put rosin and then talcum over the plate

Pour the silicone mixture on the plate and draw it across with the squeegee.

Challenges and Discussing Printing as Practice

Publishing and materializing planographic printing on ceramics acts as an archive for my own practice, that can be accessed and shared from all sides. We find ourselves in the mindset of self-publishing: "... accessible production methods, a climate conducive to open communication and debate, and the drive of people- like you- to join the data stream" (Tobias, 2008, p. 173).

passive) and practices (lithography, agent). And hopefully, ceramic printing will become an autonomous inhabitant of its space. The *Riot Grrrl Manifesto* brings us also closer to the idea of autonomous and collective creation: "**BECAUSE** we must take over the means of production in order to create our own meanings" (Hanna & et all., 2022, p. 83).

Furthermore, this moves us to the means of production, dedication to craft and skill. It moves us to the borderlands of fine art and craft. Who is being regarded as an artist? Who can enter the halls of the arts? The deepest end of Alabama has birthed one of the US finest quilt makers, who embody the meeting of means with what was available. Aerie Pettway, one of the leading quilters in this region, recalls: "I got a pair of overalls hanging on the wire right now. My husband's overalls. I'm goin' take 'em and wash 'em, and rip 'em up and make me a "Lazy Gal" quilt" (Souls Grown Deep, n.d., paras. 1–5). Those marks, made with fibers, are as immediate as a drawing can be. The more we mechanize it, the further we

Sharing

I understand art as a shared experience and through sharing my practice, knowledge is also distributed. Views are revealed and in some way also a door is opened. This is especially evident within a practice that needs a large amount of production means, which lithography does most of the time. I am critiquing in some way traditional and alternative ways of doing lithography, but I am also embracing my love for and experience with this kind of very direct mark making.

"Sharing" happens either through an unplanned instance, like a chat between a viewer and an artist, or experiencing the work. It can also be produced through workshopping and deliberate planning. Even though this educational/didactic/methodical approach is most of the time not viewed as art, I would argue it is a happening that emphasizes sharing of and accessibility to the arts. It democratizes participation while being performative. As Ethel Baraona Pohl writes: "We are all cosmonauts exploring the blurred limits between the known and the unknown" (2020, p. 195). Pohl discusses

the different spaces that we can inhabit, digital and nondigital. We are existing in both simultaneously and are searching for connections and ways of living. When we think about the existence of Art, it's prerequisites in spaces or a room, which is a phenomenon infused by meaning (Rebentisch, 2021, p. 261). We can understand it as a thought, as an experiment of thought. Our body can exist in a space, as does our memory and, space exists in our minds. The digital world is the most recent and current embodiment of space. All these iterations of spaces enable us to have specific aesthetic experiences (Rebentisch, 2021, p. 261).

Most of my research is connected to Open Access sources. This connects to SciHub, founded Alexandra Elbakyan, to remove paywalls and make academic information accessible to students (Graber-Stiehl, 2018, paras. 16). The idea of sharing knowledge in the form of the globally accessible brain, connects to Donna Haraway's idea of forming string figures and multiple forms of companionships (2016, p. 13). I want to create those with people (viewer, fellow practitioners), critters (e.g., acids/active), materials (oil/

remove it from the hand, such as lithographic prints are replications of those marks.

Why are you downloading a PDF Manual?

Returning to self-publishing and why you are holding this piece of information in your hand. In the realms of pattern publishing, such as knitting patterns on Ravelry, is a way of low-fi publishing to spread and share ideas rapidly. If I have enough leftover yarn at home, I can start a new project immediately such as a patch that Daniela Mühlbauer published in February 2025 as a PDF pattern (Mühlbauer, 2025, pp. 1–2). It was downloaded onto my computer as a PDF, and 30 minutes later a replica of her patch was made. We could enter the realms of craftism; it is rapid and provocative (Rawsthorn, 2011, p. 184). This PDF has the potential to make lithography in the same sense rapid and proactive. Further, wondering more about whom this Handbook will reach, what reputation will it create? Self-publishing is the answer for democratically sharing this research and practice (DPR, 2023, pp. 1–3).

into a hybrid state, where it combines art with strategies, structures, and materials, elevating the arts (2011, p. 135). The Crafts and Arts bring dignity to life and every person engaging with these processes. They root the quality of life and environments. They nurture the emotional and intellectual state of the engaging person (Bright, 2011).

But why is it that craft is looked down upon? We find discourse in the means of critiquing institutions and power mechanisms. Printing on ceramic surfaces has been developed within the structured walls of the College for Creative Studies, and has been nurtured by professionals both in Berlin and in Detroit. I have been feasting off the elitist table, both as a Fulbright Scholar and as an alien in a private institution in the United States. How dare I, to now critique these mechanisms within this project and work and share this research now for free? Am I creating another hobbyist practice, or can this withstand this stigmatization?

Another notion of craft might be mentioned here. It uses hands, producing works in a

How could lithographic printing on ceramic surfaces create communal structure possibilities for this printing practice? I have been thinking about digital spaces, such as Instagram, Reddit, Blogs, etc. which nurture interest groups. To share, without the question of means for access. Will these communities interact in a beautiful and kind way? I am just imagining now how ideas will be shared and how issues can be resolved immediately. People can share their own practice and the practice of others within seconds. Practice publications can be created, reproduced and distributed. I hope you have found this while roaming around in your own space and algorithm, maybe have even searched a search engine or a friend has shown you this resource, for you to be able to do it yourself.

Further, the DIY idea that printing can also fall into and produce alternative spaces for cultural activities (Chidgey, 2014, p. 103). Doing lithography yourself, brings more challenges with itself than other methods of printing would do. This handbook, in the form of a zine or PDF, guides you through the possibilities and the matrix of lithographic printing. It

is a strategic approach for participating in an almost ancient practice, this time not in institutional workshops, but in your kitchen or bathroom. In its true DIY approach, it calls for your creation, your empowerment, your skill-sharing, your participation and your development (Chidgey, 2014, p. 104).

Doing, existing in and around spaces and DIY is solely itself inherently political, period. I wanted to invite you to fully participate and share your knowledge and creations in a non-hierarchical way. Therefore, this practice exists for you as PDF, print, video, and possibly workshop. Doing and creating is as David Gauntlet writes the embodied experience of creativity. Experiencing creativity and community has a psychological benefit, it is social capital, you can leave your mark through creating and engaging in those DIY spaces. It does not matter if they are digital or in the real world (Chidgey, 2014, p. 105) without conditions. Betty Bright writes in *Handwork and Hybrids: Recasting the Craft of Letterpress Printing* that this is a "restating of the terms of engagement" (Bright, 2011, p. 150). Bright questions craft and moves it

like etching with cola on aluminum foil, is challenging, and it can be discouraging when challenges are too difficult to overcome. When a printer starts to question their whole life choices, it is a good call to step back and remember that printing "…must be carried out with calm and reason" (Aizier, 2017, p. 12). Furthermore, this is emphasized by the *Tamarind Book*. They already recommended in the 1970s that the printer must practice infinite patience, to recognize psychological or physical fatigue, strain, and irritation; and that one needs to be prepared to deal with total failure (Antreasian & Clinton, 1970, p. 82). This might sound banal, but printing is challenging, and it can help to overcome obstacles to remember that it is okay to step back and to also take a break. Printing has to be gentle, so we also have to be gentle with ourselves.

Printing can be a challenge, that's why it is important to fall back onto resources and a printmaker community. This publication therefore can be found in a multitude of media formats: video, PDF and printed publication. I have found that additional books like the Kitchen Lithography—Hand Printing At Home

specific and limited mechanical process. While making, we elongate our hands through the tools we cooperate with. We create extensions of ourselves. When we think about how we extend ourselves through our creative practices, we soon land in McLuhan's media theories on the Extensions of Humans. The printed book for example extends the visual within a fixed positioning. The book is both educational and mass-reaching in its content. It also carries information in its form, typography (McLuhan, 1964, pp. 173–174). McLuhan goes even so far that the nature of the Medium is more important than the content (McLuhan & Fiore, 2001, p. 8). They convey how we understand what we consume through their personal, political, economic, aesthetic, psychological, moral, ethical and social nature. "All media are extensions of some human faculty – psychic or physical" (2001, p. 26).

Creative production clearly elevates our mundane lives. Craft is a tactile and skilled process that opens worlds for invention, play, and rituals. Sometimes perfectionism makes the skilled obsess over details and the quality of a work (Jefferies, 2011, p. 222).

As Bright mentioned, the arts and the crafts cannot exist without each other. They intersect and cross at all times and need to coexist. Creatives intersect, move borders and are hybrids to be productive. We need to clearly understand one thing: Craft and Art are not in opposition, none is subversive to the other. Nothing is superordinate. Both exist equal in a hybrid collaboration (Jefferies, 2011, p. 225). Lauren Elkind writes in *Art Monsters* about art, and I would like to apply this to all kinds of creativity: "it makes the familiar strange, wakes us from our habits, enables us to envision other ways of being, and lets the body and the imagination speak and dream outside the strict boundaries placed on them by society, patriarchy, internalized misogyny, ... dare to overwhelm the limits assigned to us, and to invent our own definitions of beauty" (Elkin, 2023, p. 14).

They are Donna Haraway's String Figures. The strings and knots create culture through our interaction and participation. When these collaborations happen, we weave and inform them into creative artifacts (Jefferies, 2011, pp. 233–234). And they start to embody creativity.

They are risky and provocative. Good and productive. Craft, making something with our hands, is our most elemental pleasure. Doing, whether it is in solidarity or in collaboration, enhances our mundane existence. It lifts the superficial away (Jefferies, 2011, p. 237).

Challenges During the Experimentation and Printing Practice

I have noticed while reading and researching on the Kitchen Lithography Technique by Emilié Aizier, that each printer has to compile their experience with the practice to come up with their own conclusions and have to expect failure (Aizier, 2017, p. 12). This is especially evident when we look at the processing, that there are no measurements or percentages to be found. This is contrary to the *Tamarind Book* or *Safer Printmaking*, which explains portions and exact recipes for etching or the silicon printing method. I agree with Aizier that the apprentice or reader should be enabled to understand lithography through their individual cola etch journey. However, those techniques,

by Hantke and Grassmann or the *Printmaking Revolution* by Pogue have been helpful, one in the suggestions to use gum arabic (Hantke & Grassmann, 2017, p. 41) and also to look into tannic acid (Pogue, 2012, p. 26). Furthermore, understanding lithography through sources like the Tamarind resources are worthwhile to fall back onto. This ceramic printing method hopes to help beginners to gain access to the world of lithography through self-efficacy.

Creating this method has also put me into different challenges, questioning my limits. Especially the issue of washing the plates, which had me fall back onto traditional lithography methods. Furthermore, there is a question about quality, clean prints and how close they can and should come to traditional lithographic printing. I also went in the wrong directions, like using air balloons as roller alternatives, which did not work at all, after seeing a video of SVAN NYC printmaking class using a balloon for transferring an image onto a ceramic cup (SVANNYC, 2023). I also have to mention that local craft community stores have supplied me with surprising materials, like the tiles, Crayola crayons and

lots of paper. These spaces fuel creativity and, if we want to say so, innovation?

So I have experimented, written down, fantasized and theorized and hope that you can now work within the lithographic printing practice. I want you to get your hands dirty and print and be creative. Share your experience and results to me, send me an Instagram message or an email. Tell me what went wrong and what you hate. Do you know how to do it better? Think of this as a start of a printing space, invite your friends to join along. Together we expand this story and practice.

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