

VESTIGE

by

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Our memories are, in essence, the summation of who we are. With age, our memory starts to slip away. The disintegrating effect of time is slowly eroding our stored experiences. This document explores the means and methods in which I explore the preservation of memory through use of place material.

For the past few years I have struggled with the loss of memory, place, and loved ones. I wanted to find a way in which to preserve my own memory and experiences as a tangible object. In order to create these “memory-objects” I explored visual, auditory, and tactile cues that coalesce to become a means of triggering a distinct memory. I am taking place-material from the geographical location in which a specific memory that I wish to preserve was formed. I am then using the place-material to create a permanent *memory-trigger*. The process and preservation of those memories as tangible objects combine with specific triggers to create an object that is linked to a particular memory; which I refer to as “vestigial memory-objects”. Through this process of locating and preserving, I have recovered memories that had faded into the recesses of my consciousness. In summation, I explore the means in which my process recovers memory and discuss how my work acts as a physical catalog of the experiences I wish to preserve.

VESTIGE

A Thesis

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In Partial Fulfillment of the Requirements for the Degree
Master of Fine Arts in Art

by

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GROWING UP IN NORTH WESTERN PENNSYLVANIA

My relationship to place was heavily influenced by my experiences growing up in the wild-lands of North Western Pennsylvania. It is a landscape encompassing primordial forests and crumbling industrial infrastructure. The landscape is crisscrossed with fast moving streams, running cold and deep. Wild brook trout wait patiently in the eddies while Belted Kingfishers call from sun dappled branches above. The old growth forests are dark, dotted with vernal pools and covered in moss. The thick layer of pine needles and airy ferns stifle noise, creating a sense of distance from the outside world. The muffled tones hinting at a form of sanctuary among the tall pines. Animal trails run through the undergrowth, leading along the banks of the creek, or carefully picking their way through the sturdier sections of marsh. It is the kind of landscape in which one, almost, expects to encounter a dinosaur or some mythical beast. Evidence of human intervention is almost non-existent. The forest feels as if humans never invaded until you stumble across the abandoned remnants of industry.

Industry in Landscape

When deep in the woodlands of North Western Pennsylvania it is not uncommon to come upon a large steel structure, a beam counter balanced on stilts like legs. This structure is solitary with no other indication of human settlement. Plant life has almost entrapped it and all its moving parts have long ago fused together. Its paint has been slowly peeling back to reveal a rusted and weathered surface. The machine is itself a dinosaur, a fossil stagnating in a changing landscape and economy. It is a visual marker indicative of the slagging oil and coal industry of North Western Pennsylvania. The decaying structure is an oil pump, colloquially known as a “nodding donkey” for its donkey-head shaped counter balance. These resources used to be abundant on the western end of the state, bolstering the economy and driving development. Oil was collected by individuals, preferentially utilizing the nodding donkeys for mobility. Industrial structures found their way into the rugged landscape and were subsequently abandoned as the oil ran dry. The nodding donkeys were not the only abandoned structures however; as natural resources ran out, industrial buildings were abandoned as well. Economic downturn saw the abandonment of industrial warehouses and manufacturing centers. Buildings constructed during the turn of the century sit crumbling as nature takes back its own. Upon closer inspection of the factory wall, one would notice that the bricks are a little different than the smooth polished bricks we are used to seeing in modern construction.

One of the resources locally available is a brown stoneware clay, a remnant that predates the last ice age. The clay was gathered and extruded into brick forms, creating tears and fissures presenting themselves on the surface of the bricks. Landscape which was removed, molded, and transformed, sits crumbling while informing the landscape it was created from.

Place/Memory Loss

My investigation into my relationship to origin began with my own process of removal of place material. As a child, I had collected clay from the riverbank of my family's property in North Western Pennsylvania. I brought it home and promptly forgot about it until it was re-discovered during my first year of graduate school. The reappearance of the material that I had collected coincided with a sharp degradation of my grandfather's mental state. Alzheimer's and dementia had taken a sudden and unexpected toll and he went from someone I had always known to a stranger in what felt like a matter of weeks. He was a soul lost in the fog a deteriorating brain. What really shocked me was the animality of it. I always assumed that the loss of a close loved-one would foster a need to seek out an answer to the question of what happens when we die. It would foster a certain sense of spirituality as a way to cope with that kind of devastation. But it didn't. Instead, it highlighted the way in which our animal flesh is so utterly fragile and is intrinsically and completely tied to what we perceive as ourselves. This idea is at once comforting and horrifying. While it points brazenly to the fact that once extinguished we and all those around us are erased, I believe that it also implies that the rules of science apply to the human idea of soul. For me, this means that the way we understand memory and ourselves can be governed by the same rules that control everything from the intricate paths of the celestial bodies in our solar system to decomposition of Carbon-14. My perspective introduces a new way of framing how I understand, and access, my memories. They are no longer connected to the abstracted idea of my consciousness, but instead data that can be accessed given that the correct parameters are applied to the problem of recovery.

Exploration

Over the course of my experience in graduate school I have noticed I am struggling to recover my memories of place and loved ones with the ease I have experienced. At the same time, I have re-discovered material, and through processing the clay, have recovered memories that had faded into the recesses of my consciousness. My

work is an exploration of preserving my memories through processing material into tangible objects linked to those memories.

UNDERSTANDING MEMORY LOSS

My understanding and interest in my own memories shifted with the events involving my grandfather. I started exploring ways to create a physical access to past experiences as a proactive means of preservation. In my own experience with memory, I struggle with recovering memories unless I have a trigger. These triggers include everything from a texture to a smell. Many of us experience a flashback to childhood when the smell of fresh baked cookies wafts past our nose. Suddenly, we are 8 years old and waiting impatiently for the cookies our mothers baked to cool. Part of my interest in this memory recall is that I struggle to remember most experiences, commonly known as episodic memory, without a trigger. Watching my grandfather mentally deteriorate, coupled with this enhanced realization of my own struggles of memory recall, encouraged me to explore the ways in which we process memories.

Research into the process of memory storage and recovery led to exploring involuntary autobiographical memory. These are episodic memories triggered by stimuli. They are completely involuntary. This research introduced another question. I may not be able to control the memory, but could I direct it by controlling the stimuli? By understanding what triggered a specific memory I could, in a way, ensure the preservation and access of episodic memories I wish to preserve.

I started to pay close attention to the way my memories were triggered and what stimuli uncovered which episodic memory. I found that texture is a significant trigger and place-material mimics these landscape textures beautifully. Imagery is also a significant memory trigger; layering this imagery on top of the texture increases the stimuli's effect on memory recall. (*Jawore, Anna. Brain potentials reflecting spontaneous retrieval of emotional long-term memories*)

Objects as Stimuli

I used this research to inform the objects. Each object is utilitarian and directly related to a specific memory. These objects are a combination of place and imagery. With my work, manipulation of the material allows me to reframe my own history. Slip, the only non-essential, non-place material, is important in its ability to lend me to reframe my own history. Slip, the only non-essential, non-place material, is important in its ability to lend agency to the creation of my work. Slip, like the degraded state of an old memory, veils and softens. The slip allows me the

agency to choose what I reveal and explore the view of loss. I gain the power to manipulate the interpretation of my own past, revealing only what I choose. I am freezing my current memories by creating ritual objects. Memories are triggered through use of the object in a specific ritual associated to the object and place. The object is made from place material, it is the color of the swamp and forest of place. Images from memory are etched and printed into the surface, creating a layering of triggers. The objects act as a synthesis of triggers for a specific memory. They are a personal physical representation of a memory I wish to preserve. The ritualistic use, combined with place and imagery references, result in direct triggers of the memory it is designed to preserve.

In some small way, these objects are also an exploration into the preservation of the unpreserveable. Although I know these are attempts to gain control over the degradation of my own memories, it is a tragically human act that has played out over the millennia. It is the raw act of the preservation of self in the physical world. By celebrating loss, I find beauty and meaning in loss. Ultimately, I am finding agency in the preservation of my memory and the physical articulation of my narrative.

Loss of Place

I am also interested in exploring my memory of place and the correlating degradation and loss to the effects of natural erosion. The dichotomy between loss and growth fascinates me. I believe that the lens through which we explore loss becomes an important tool in the articulation of my narrative. I am attempting to find meaning in my loss of place, and memory and the reflecting narrative in loss of regional community and industry. Aesthetically, I am influenced by the rugged landscape of North Western Pennsylvania, along with the brutalist architecture, brick made of the same local clays, and the practical sensibilities of the community. My imagery serves to celebrate my memory of place and the degradation of structures returning to a natural state. Things that we integrate into our everyday lives become a synergist for memory triggered by use of the object.

Landscape and Architecture



Figure 1: Abandoned factory in Warren Pennsylvania

The landscape of North Western Pennsylvania is rugged and scarred. Centuries of harvesting oil and coal have had a significant impact on the region. Buildings and machines have since been abandoned to the wilderness. The architecture of the region was heavily influenced by early modernism. Massive factories composed of multicolored brick, sit in the middle of fields, partially covered in vines. Their windows long ago smashed and roofs collapsing in on themselves. These structures built with sharp lines seem at home among the glacier-worn landscape. These structures, abandoned and reverting back into the landscape from which they came, informed my view of the North Western Pennsylvania Landscape. This abandonment of structure seemed to coincide with the depletion of resources. The structures stand testament to the human struggle to define our relationship to the land.

MATERIAL AND PROCESS

Clay

I start by removing the raw clay from my grandparent's land. The area is rich with vernal ponds and marshland, a perfect environment for extracting wet clay. There are two separate clays layered over one another. They sit just below the wet detritus of the forest ground.



Figure 2: Glacial silt clay before oxidizing

The first layer is a vibrant blue clay which oxidizes quickly once removed from the anaerobic environment. Once oxidized the blue fades to a dark grey. It is a remnant of the last ice age, stone ground down into a fine silt. During the last Glacial Maximum, roughly 21,000 years ago, glaciers extended to the 45th parallel, covering the upper regions of what would one day be Pennsylvania. (*Sevon, Fleegeer, & Shepps, Pennsylvania Geological survey*) This glaciation, sometimes up to 2 miles thick, ground down sedimentary rock of the Allegheny mountains into a fine silt.

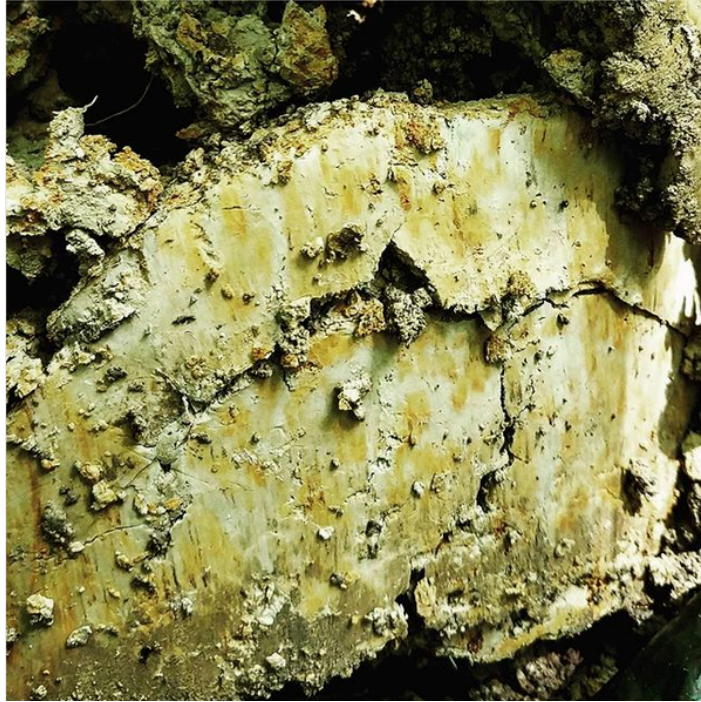


Figure 3: Chapman's Dam stoneware clay before processing

The second layer of clay, creamy and buff in appearance, lies below this layer of glacial silt. It is the remnant of ancient wetlands. The product of the decomposition and accumulation of minerals and silica held in plant material.

Both of these clays are carefully extracted and separated. The scar in the ground is then softened by shifting around dirt. After harvesting, the clay is broken into small chunks and allowed to fully dry. It is placed into kilns and held at roughly five-hundred degrees in order to eliminate the organic material. After this process is complete, the clay crumbles much more easily.

The stoneware clay is then mixed with water and blended in order to create a thin slurry. Once the clay is fully rehydrated, it is run through fine mesh to remove small rocks. These rocks are set aside, and the clay is allowed to stiffen to workable consistency.

The glacial silt clay material was already composed of very fine particulates, so minimal processing was required. The glacial silt clay is dried and strained like the stoneware. Once the silt clay has been fully processed, it is allowed to completely dry and then is mixed with lithium and calcium carbonate. The high iron content lends the glaze the appearance of an olive celadon glaze. I used the glaze as both a liner for the functional objects as well as a means of accenting the memory-imagery.

Surface

The iron-heavy clay lends itself fairly well to the reduction firing process. Small beads of iron rock speckle the surface of the clay and the dark, reduced coloration of the material closely resembles the geologic formations of North Western Pennsylvania. Surface treatments are utilized to enhance this resemblance to the harsh rock outcropping common in the region. Clay is sliced and then torn away to create a smooth and jagged appearance. Found rock and wood is used to mark the surface of the clay while certain sections are allowed to form fissures in a reference to the locally produced brick.

Utility

The utility aspect is important in its relationship to the memory. A function of the object is that it's use triggers memory. Therefore, it is important that the object becomes a functional central component to the memory.

By creating an object that holds a specific utilitarian purpose, is created with material from a specific location and contains imagery of that place, I create an object that acts as a memory catalyst because the utility and use of these objects is intrinsically tied to a specific memory.

Slip

Through my investigation into place and memory, making has become tangibly tied to the unconscious crystallization of memory through conscious actions, which in turn, informs my experiences and decisions in my process. I am applying physical place and memory to an object, made from material specific to that place, designed to be used ritualistically in connection to place and time. This process creates a physical representation of my memory and serves to solidify it in the face of organic memory loss. The work serves as a personal memory artifact. Memories are not static. Every time we summon a memory, the biological process of remembering fundamentally transforms it into something new. In a way, we reframe an experience every time it is pulled into our consciousness. With my work, manipulation of the material allows me to reframe my understanding of my past. Slip, the only non-essential, non-place material, is important in its ability to lend agency to the creation of my work. Slip, like the degraded state of an old memory, veils and softens. The slip allows me the agency to choose what I reveal and explore the view of loss. I gain the power to manipulate my own past, revealing only what I choose.

Imagery: Sgraffito, Wild Oxide, & Oxide Fusion Printing

The imagery is another important component of the memory-object. All of the imagery references both a specific memory and a specified use of the utilitarian object. The main component in the creation of this imagery is Sgraffito, a method in which a surface is removed to reveal a contrasting color. While the white slip acts as a veil, sgraffito introduces agency through the process of uncovering and revealing only what I choose. I am able to remove the surface of slip in a way that inscribes detailed imagery onto the surface of the work.

The small iron rocks I removed from the wild clay material were put into a ball mill and refined into a fine powder. This was another means of creating, as well as accenting, imagery. The rocks formed a beautiful iron rich colorant that enhanced the memory-images.

Finally, Oxide fusion printing removes a portion of the precious place material while fusing an image to the work. This process is both a technical means of introducing imagery while inferring the loss of place in order to preserve memory. Further information on the Oxide Fusion Printing process can be found in the appendix of this document.

OBJECTS AS MEMORY BANKS/TRIGGERS

Ideally, the clay extraction should result in three separate materials. Glacial silt clay, stoneware clay, and oxide rocks. These are separated and addressed according to their respective properties. The end product of the raw materials is a glaze, clay body, and oxide with compatible temperature maturation points. The clay should possess reasonable workability while still exhibiting the heterogenous quality of wild clay. Slip is another factor in calculating results. Without knowing the chemical makeup of the wild clay, determining a slip that would fit the clay body is a challenge. I opted for a slip recipe with the most variable firing temperatures. It includes an opacifier to better expand on the applications of the slip. The slip should act as a thin veil, obscuring the clay beneath while also revealing structure. The objects, in both structure and surface treatment, should reference the landscape of North Western Pennsylvania. Imagery is created utilizing the resources of place material along with red and black underglaze. The image should be a representation of the memory associated with the object while referencing mid-century animal and plant identification guides.

In her article in the Journal of Cognitive neuroscience, Ann Jaworek found that “emotional pictures may spontaneously trigger episodic memory retrieval”(*Jaworek, Anna*) she indicates that “The current data may indicate that emotionally evocative cues spontaneously trigger familiarity-based episodic retrieval on a delayed implicit retrieval test, when no memory search is required.” (*Jaworek, Anna*)

This research effectively backs my projected outcome. When these finding are applied to my memory-objects, the combination of place material, imagery, and surface, coalesces to create an involuntary emotional memory-trigger. During use, the object should act to draw out a memory linked to a specific instance. In its essence, the object is engineered to act as a physical trigger for a specific memory unique to me. These objects form a catalog of the experiences I wish to preserve and ensure my access to these memories in the future.

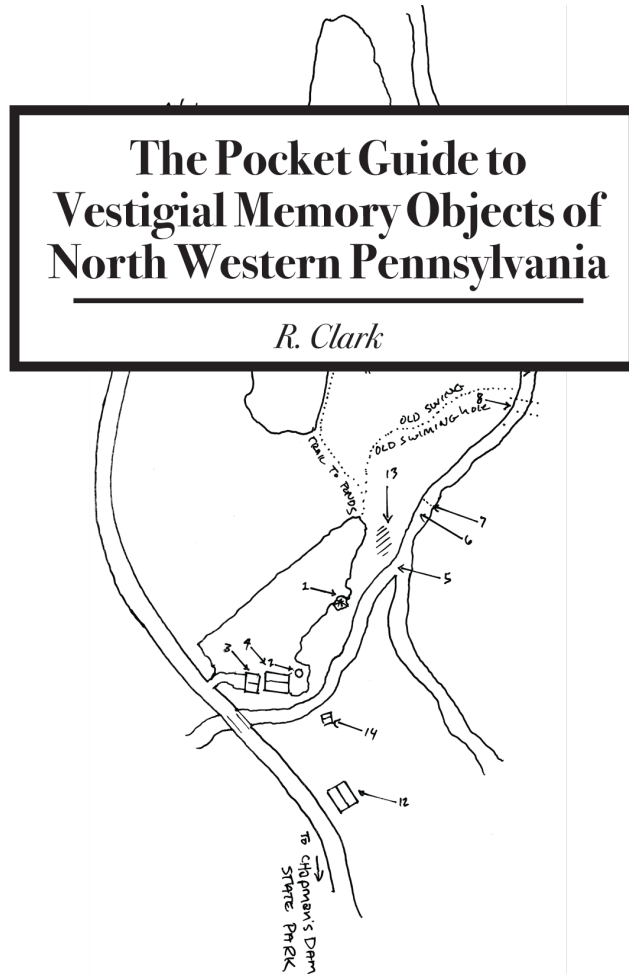
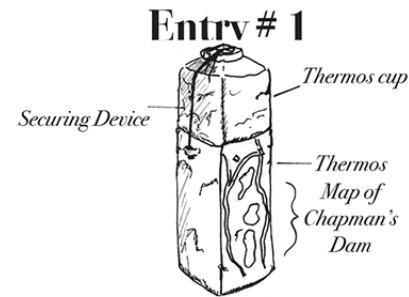


Figure 4: Cover, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*



Figure 5: Gallery detail, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*



*“Thermos for the First Day of
Deer Season ”*

A Thermos for the specific purpose of transporting coffee on the first day of deer season in Chapman’s Dam State Park. The Thermos includes a map to the deer stand with keys. This is helpful in the event of rolling the incorrect gully. The Thermos is to be used after one reaches the Deer Stand and is to be shared by all present. During the latter part of the morning, sometimes early afternoon, the Thermos will be depleted of coffee. At the point of depletion, a suggestion will be made regarding the necessity of refilling the Thermos. At this point, all those present at the Deer Stand will gather up their respective gear and commence the hike back down the side of the mountain.

Figure 6: Entry #1, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“A Thermos for the specific purpose of transporting coffee on the first day of deer season in Chapman’s Dam State Park. The Thermos includes a map to the deer stand with keys. This is helpful in the event of accidentally following the incorrect gully. The Thermos is to be used after one reaches the Deer Stand and is to be shared by all present. During the latter part of the morning, sometimes early afternoon, the Thermos will be depleted of coffee. At the point of depletion, a suggestion will be made regarding the necessity of refilling the Thermos. At this point, all those present at the Deer Stand will gather up their respective gear and commence the hike back down the side of the mountain. Back at the cabin, there will be clam chowder, oyster crackers, and more hot coffee. The Thermos may, or may, not be refilled. This is dependent on the temperature outside and the general mood of the hunters.” (Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects of North-Western Pennsylvania*. 2018)



Figure 7: Gallery detail, *Thermos for the First Day of Deer Season*

Memory Related to *Thermos for the First Day of Deer Season*

On the first day of deer season, I awake to darkness at 4am. I scramble around in the dim glow of the bedroom night light to locate the tattered *Carhartt's* I had set out the night before. I walk out into the kitchen where a thermos is being filled with coffee. We head out into the cold, dark morning, small supply sacks and rifles strapped to our backs. Chapman's Dam falls within the 41 north latitude and temperatures in November can be as low as 12°F. As we head out into the muffled darkness, the snow creaks under our feet. The crunch of ice crystals rubbing together at extremely low temperatures is as satisfying as the crunch of fall leaves underfoot. The woods are hauntingly quiet just before dawn. We march-single file down a park service road before turning to the right to begin a sharp ascent up the side of the mountain.

The Allegheny mountains are ancient remnants. They arose roughly 300 million years ago when the African continent collided with the American continent, and since then, they have been slowly degrading to their modern state.

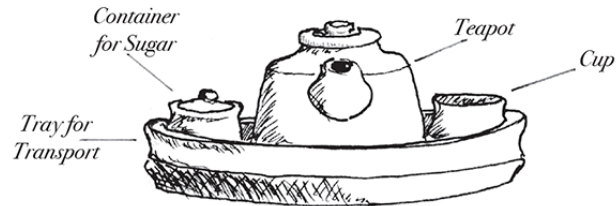
We continue to climb the face of this ancient monolith. Shallow gullies formed by water runoff act as landmarks, pointing us in the direction of the stand. We reach the deer stand as the birds start to sing in the pre-dawn darkness. The stand is a stack of thin logs propped perpendicular to the ground, lodged in place between a tree on one side and a large boulder on the other. Behind this wall are two large boulders which serve as seats and a small fire ring formed out of rock. The stand sits atop the precipice of the hill and looks out over our side of the mountain. Old growth forest with little undergrowth offers an expansive view.

A fire is lit in the fire ring and the thermos of coffee is produced. We converse in whispers as we wait for an unsuspecting deer to wander in to our line of sight.

We never actually shot a deer from that deer stand on the first day of deer season. Someone would inevitably end up stalking the swamp lands over the next week, flushing out the deer that had been seeking sanctuary in the thick vegetation.

As I've gotten older, I realized that killing wasn't really the point anyway.

Entry # 2



“Teapot for the Preparation of Pine Needle Tea”

A tea set for the preparation of white pine tea. The leaves of the Eastern White Pine are collected from Chapmans Dam State Park and steeped in boiling water. Set is typically used by a single participant in early spring.

Figure 8: Entry #2, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“A tea set for the preparation of white pine tea. The leaves of the Eastern White Pine are collected from Chapmans Dam State Park and steeped in boiling water. Set is typically used by a single participant in early spring.”
(Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects or North Western Pennsylvania*. 2018)



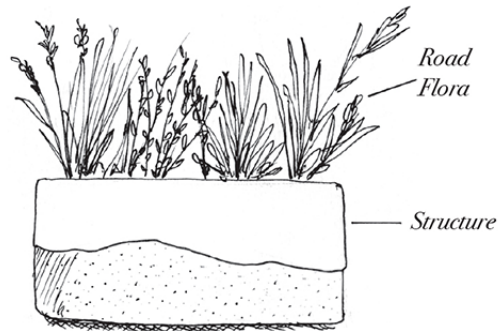
Figure 9: Gallery detail, *Teapot for the Preparation of Pine Needle Tea*

Memory Related to *Teapot for the Preparation of Pine Needle Tea*

As the warmth of springs seeps into dark forest floor, the snow starts to melt revealing the green needles of the white pine. The warmth of early spring, in the northern reaches of Pennsylvania, encourages the transport of sugar rich sap in trees and shrubs. What was dormant during the harsh winter months, now slowly awakens as the earth's axis tilts towards the sun. During this period of sap transport, the point of harvest is dependent on the time of day for each plant. Roots like sassafras are best harvested in the early mornings, after the sap has collected underground to avoid the nighttime freezing temperatures. Needles, on the other hand, are best collected in the late afternoon.

To this day, I still get seasonal cravings for white pine tea. I remember collecting the delicate needles and steeping them in hot water. Early in the spring, the taste is fruity, almost tropical. The tea itself contains significant amounts of vitamin C, a fact that helped early settlers avoid scurvy during the long winter months.

Entry # 3



“Transitional structures”

These brick-like structures are in the process transitioning from human habitation to plant habitation. They are the most suitable habitat for roadside flora of North Western Pennsylvania and can typically be found residing along back roads. They may be difficult to identify at first as wild flora has since taken up residence in these abandoned structures, sometimes hiding the structure completely, as the plants adapt to this new environment.

Figure 10: Entry #3, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“These brick-like structures are in the process transitioning from human habitation to plant habitation. They are the most suitable habitat for roadside flora of North Western Pennsylvania and can typically be found residing along back roads. They may be difficult to identify at first as wild flora has since taken up residence in these abandoned structures, sometimes hiding the structure completely, as the plants adapt to this new environment.”

(Clark, Rachel, The Pocket Guide to Vestigial Memory Objects or North Western Pennsylvania. 2018)

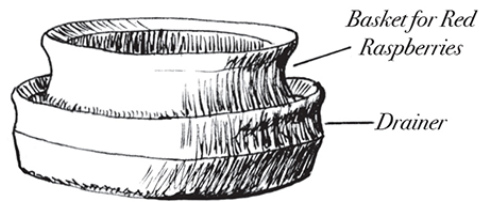


Figure 11: Gallery detail for *Transitional structures*

Memory Related to *Transitional structures*

Life, for most organisms, inhabiting the northern reaches of Pennsylvania must endure harsh living condition. With temperatures that hover at, or below, freezing for half of the year and an average snowfall of 70 inches per year, plant and animal life has adapted voraciously. Human-made structures, if not maintained, quickly fall victim to the encroachment of foliage. As a child, I remember noticing the dilapidated structures that seemed to increase as we got closer to North Western Pennsylvania. These structures, simultaneously crumbling and thriving, always fascinated me. They speak to the tenacity of nature. Both their ability to simultaneously destroy and create.

Entry # 4



“Berry Basket and Drainer for Foraging Berries in the Allegheny National Forest”

A berry basket and drainer dish for harvesting the red raspberries that grow prolific in North Western Pennsylvania. This object is typically put into use during the mid to late summer, when the raspberries are ripest. Care must be taken when using this object as thorns present a common complication to the berry harvesting process.

Figure 12: Entry #4, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

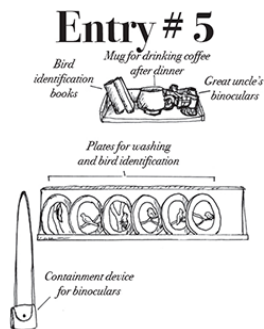
“A berry basket and drainer dish for harvesting the red raspberries that grow prolific in North Western Pennsylvania. This object is typically put into use during the mid-to-late summer, when the raspberries are ripest. Care must be taken when using this object as thorns present a common complication to the berry harvesting process.” (Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects or North Western Pennsylvania*. 2018)



Figure 13: Gallery detail, *Berry Basket and Drainer for Foraging Berries in the Allegheny National Forest*

Memory Related to *Berry Basket and Drainer for Foraging Berries in the Allegheny National Forest*

As a young child, I was allowed to roam the woods unsupervised. I spent long, sun-drenched, hours building lean-tos under dark pines and dams in the little creek. When I became hungry, I would wander around, gathering handfuls of red raspberries. I remember feeling a sense of accomplishment. I remember the thrill of knowing how to find food. I had provided food for myself, been self-sufficient to some extent. I got the chance to safely explore the narratives of my favorite books, works such as Gary Paulsen's *Hatchet* and Jean Craighead George's *My Side of the Mountain*. I think access to that kind of freedom helped transform me into an independent, self-assured adult. I wanted to celebrate the simple act of berry picking as more than foraging, but instead a memory linked to the first feelings of independence and self-confidence.



*“Dishes to Wash while
Identifying Birds
of Western Pennsylvania”*

These objects fulfill two primary functions. First, they are washed after consuming a family meal in which two to eight participants have engaged. The washing is typically performed by two to four participants while drinking coffee. During this washing ceremony, the participants pay close attention to the birds outside of the window adjacent to the event. The dishes are used, as their second function, to identify bird species that typically inhabit Western Pennsylvania.

Figure 14: Entry #5, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“These objects fulfill two primary functions. First, they are washed after consuming a family meal in which two to eight participants have engaged. The washing is typically performed by two to four participants while drinking coffee. During this washing ceremony, the participants pay close attention to the birds outside of the window adjacent to the event. The dishes are used, as their second function, to identify bird species that typically inhabit North Western Pennsylvania.” (Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects or North Western Pennsylvania*. 2018)



Figure 15: Gallery Detail, *Dishes to Wash while Identifying Birds of North Western Pennsylvania*

Memory Related to *Dishes to Wash while Identifying Birds of Western Pennsylvania*

Dinner at my grandparents was very ritualized. No one was allowed into the kitchen until food was set on the table and there would always be a pot of coffee ready. After the meal is finished, dishes were washed. This always seemed to be a coveted job, the one thing we were allowed to help with during the meal process. The sink had a window positioned over it, and multiple bird feeders have been set up outside in the yard. The ruralness of the cabin meant that there were always multiple species of birds hanging off of the numerous feeders. I remember standing and drying dishes alongside my grandmother as she pointed out and identified each bird that appeared at the feeder. If we were stumped, there was a dog-eared Peterson's Field Guide sitting on the shelf next to the sink.

Entry # 6



“Found Frying Pan for Cooking Crayfish Over the Campfire”

The origin of the object is still under investigation. The flood swollen creeks of North Western Pennsylvania often carry objects far from their point of origin. The object is used to boil the native crayfish over a small campfire. In order to engage with this object, participants must harvest crayfish from the adjacent stream.

Typically, a small waterproof containment device is used to house the crayfish while creek water is brought to boil in the Found Frying Pan. The Pan is then used to fully cook the crayfish.

Once cooled, the crayfish are eaten sans garnish.

Figure 16: Entry #6, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“The origin of the object is still under investigation. The flood swollen creeks of North Western Pennsylvania often carry objects far from their point of origin. The object is used to boil the native crayfish over a small campfire. In order to engage with this object, participants must harvest crayfish from the adjacent stream. Typically, a small waterproof containment device is used to house the crayfish while creek water is brought to boil in the Found Frying Pan. The Pan is then used to fully cook the crayfish. Once cooled, the crayfish are eaten sans garnish. (Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*. 2018)



Figure 17: Gallery detail, *Found Frying Pan for Cooking Crayfish Over the Campfire*

Memory Related to *Found Frying Pan for Cooking Crayfish Over the Campfire*

As with the raspberries, I was intrigued by the idea of self-sufficiency and was always excited to explore wild culinary options. One of those options were the little crayfish that lived in the stream out behind the cabin. I had never been introduced to crayfish as food before but decided that whatever looks like a tiny lobster must be edible. I had a beat-up skillet that appeared one day after a particularly heavy rain. No doubt swept away from another camp upstream. It was rusty and dented but could still hold water. I went about the task of collecting a few

of the larger crayfish, the ones that liked to haunt the dark depths under the old bridge. After I found some suitable victims, I boiled creek water in my frying pan over a camp fire. After their shells turned the vibrant red of cooked shellfish, I pulled them out of the water and arranged them neatly onto a dish, proud of my new found culinary skills. Not being familiar with anything other than shrimp, I tried to eat them without condiments. The taste of plain crayfish is akin to sweet, grainy, mud. While proud that I had managed to turn something from the depths of the creek into food, I left the remaining crayfish to the raccoons.

Entry # 7



“The First, and Last, Sighting of the Scarlet Tanager”

The second of two vestigial memory objects representing a specific instance in time. This object crystallizes four seconds of memory in which a Scarlet Tanager was sighted among the Eastern White Pine. The elusive migratory bird made no appearances later on.

Figure 18: Entry #7, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“The second of two vestigial memory objects representing a specific instance in time. This object crystallizes four seconds of memory in which a Scarlet Tanager was sighted among the Eastern White Pine. The elusive migratory bird made no appearances later on.” (Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*. 2018)



Figure 19: Gallery detail for *The First, and Last, Sighting of the Scarlet Tanager*

Memory Related to *The First, and Last, Sighting of the Scarlet Tanager*

Growing up, I read the bird identification books religiously. I had a number of different books, but a particularly ragged one was especially precious. It was a Peterson's Field Guide to North American Birds, Eastern Edition. It had a green faux leather cover, printed color photographs, and most importantly, a checklist in the back. I have been keeping track of the birds I've spotted in the checklist at the back of my bird guide since I was around nine years old. Most of us are familiar with the birds common to our respective area. Many people have seen a crow or spotted a house sparrow and most of us know what a chickadee looks like or that the bright flash of red indicates a male cardinal...Or does it? One of the birds I studied in my little green book was the scarlet tanager, a vibrant crimson and black songbird native to the dense hardwood forests of the east. Tanagers are elusive, choosing to spend their time deep in the forests of the north. Finding one is difficult and requires luck. I have only been lucky enough

to have had one encounter with the brightly colored bird. My memory of catching a glimpse of the bird is still vivid. I was around thirteen at the time and headed down the trail to a deep hole in the creek where the native brown trout liked to hide from the heat of mid-summer. I remember first seeing the flash of red, but it was the black wing that gave the bird away. Scarlet tanagers are the only birds in the region who poses both a vibrant red and black body. I remember it standing out clearly against the deep green of the pine it was sitting in. Being a particularly shy species of bird, it was gone into the depths of the forest almost as soon as it appeared.

Entry # 8



“The Escapee of Chapman’s Dam”

This Object is used to serve the very first rainbow trout one catches with specific stipulations as to how the object functions. First, the trout must be a rainbow trout which had escaped over the dam of Chapmans Dam State Park. Second, the trout must be caught in a bucket by means of “fish herding”, without the use of traditional fishing gear. Lastly, once caught, the trout is cooked in a traditional manner and saved so that every participant has the opportunity to sample the trout.

Figure 20: Entry #8, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“The second of two vestigial memory objects representing a specific instance in time. This object crystallizes four seconds of memory in which a Scarlet Tanager was sighted among the Eastern White Pine. The elusive migratory bird made no appearances later on. This object is used to serve the very first rainbow trout one catches with specific stipulations as to how the object functions. First, the trout must be a rainbow trout which had escaped over the dam of Chapmans Dam State Park. Second, the trout must be caught in a bucket by means of “fish herding”, without the use of traditional fishing gear. Lastly, once caught, the trout is cooked in a traditional manner and saved so that every participant has the opportunity to sample the trout.” (Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects or North Western Pennsylvania*. 2018)



Figure 21: Gallery detail, *The Escapee of Chapman's Dam*

Memory Related to *The Escapee of Chapman's Dam*

I spent most of my time in the creek during the heat of summer, building structures out of river rock, hunting crayfish and minnows, and only dragging myself out of the clear cold water when it got too dark to see. It was in this creek, that I had my first encounter with a rainbow trout.

Rainbow trout are a member of the salmonid family. They can be landlocked or, like their salmon cousins, migrate to the open ocean. These amazing animals can range from an adult size of one pound to twenty-seven pounds depending on the size of the habitat. The adults are beautifully marked, their smooth skin ranging from deep emerald, to pink, to white.

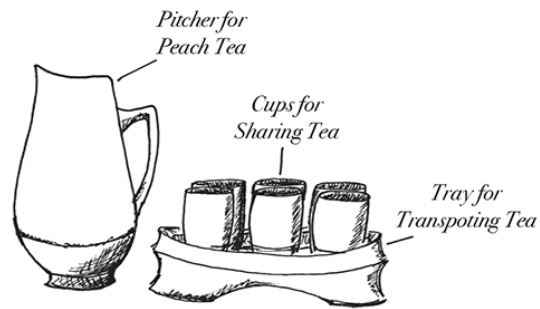
When I was around six, I had been in the creek chasing crayfish when a large fish darted close to me and into a small pool. The water of the creek had been low, the deepest sections being less than six inches deep. I crept up to the pool and saw the outline of a large rainbow trout.

The creek behind the cabin originated from the spillway of Chapman's Dam lake. In the spring, this lake is replenished with rainbow trout by the Pennsylvania game commission. This event occurs with the fanfare of a tiny town that has nothing more interesting to do.

The trout must have escaped over the spillway and into the small creek. It was trapped, as water levels were too shallow for it to continue forward or head back. I scrambled out of the creek, grabbed a five-gallon bucket, and my grandfather. Together, we herded the trout towards the mouth of the bucket. Trout, I learned, are very obstinate and not particularly fond of buckets. Eventually, after much effort, we were able to get the trout into the bucket and haul it out of the stream. I was wet and tired, but proud of my very first trout, even if it wasn't caught in a traditional manner. My Grandpa showed me how to field dress a fish and my grandma taught me how to pan fry a trout.

This is one of my first memories as a child. I still remember that flash of the trout's belly in the pool, the smell of pan fried fish, and the pride of catching my first rainbow trout.

Entry # 9



“Pitcher set for Drinking Peach Tea on the Porch in the Evening”

This object is used to serve peach iced tea on the front porch while overlooking the forest. The object is typically used by two to six participants during the evening hours of the late spring and summer. While using this object, participants will simultaneously engage in conversation and the observation of Ruby Throated Humming Birds.

Figure 22: Entry #9, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“This object is used to serve peach iced tea on the front porch while overlooking the forest. The object is typically used by two to six participants during the evening hours of the late spring and summer. While using this object, participants will simultaneously engage in conversation and the observation of Ruby-throated hummingbirds.” (Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects or North Western Pennsylvania*. 2018)



Figure 23: Gallery detail, *Pitcher set for Drinking Peach Tea on the Porch in the Evening*

Memory Related to *Pitcher set for Drinking Peach Tea on the Porch in the Evening*

There was always a large pitcher of Lipton Peach Tea in the refrigerator. At home, sugary drinks were almost non-existent, so this pitcher of decadently sweetened tea represented a rare treat. The seemingly unlimited supply was housed in an old plastic pitcher, a remnant of the 60's, faded and stained after years of tea.

I remember many evenings ending by sharing a glass on the front porch of the cabin, usually tired after spending the day exploring the woods. We would watch the far edge of the clearing, waiting to catch a glimpse of the notorious piebald doe that liked to feed on the crab apples in the twilight. As the sun lowers towards the horizon, the buzzing and flitting of the hummingbirds becomes less frequent, giving way to the lonely hollow call of a barred owl.

Entry # 10



“The Day I Communicated with a Doe”

This object can be identified with ease, as it is one of two vestigial memory objects representing a specific instance in time.

One will notice the White-Tailed Doe peering back at you. If you listen carefully, you may even hear the noise of a curious white tailed deer trapped within the object.

Figure 24: Entry #10, *The Pocket Guide to Vestigial Memory Objects of North Western Pennsylvania*

“This object can be identified with ease, as it is one of two vestigial memory objects representing a specific instance in time. One will notice the White-Tailed Doe peering back at you. If you listen carefully, you may even hear the noise of a curious white-tailed deer trapped within the object.” (Clark, Rachel, *The Pocket Guide to Vestigial Memory Objects or North Western Pennsylvania*. 2018)



Figure 25: Gallery detail *The Day I Communicated with a Doe*

Memory Related to *The Day I Communicated with a Doe*

Deer frequent the woods around my grandparents' property. Cloven hoof prints dot the trails and it's not uncommon to stumble upon a "deer nest", a small patch of grass that has been compressed into the shadow of a deer that had bedded down in that location. Despite the high density of deer in the area, one is rarely seen while hiking the trails. Their acute sense of hearing and smell warn them of impending danger well before we are able to detect them.

Despite being skittish, deer are very curious animals. They also possess poor vision compared to our own. If their other senses have not detected the identity of a potential predator, deer will pause to investigate. A human producing atypical noises is quite confusing to a deer. Hunters will use a trick to their advantage by whistling as the deer moves through the range of fire. If the deer has not yet detected the hunter, it will pause to investigate the source of this strange sound giving the hunter time to place the shot.

One summer, when I was around eleven or twelve, I had learned about different deer calls. The grunt of a buck warns other male deer of their presence or indicated their willingness to breed to a doe, who bleats in return. The bird-like call of a young fawn, searching for its mother. And the *snort*, issued by a curious deer who is investigating a new object or situation. I had learned all of these calls in preparation for my first hunt during deer season.

I was walking down the trail, practicing the toe to heel stride I had recently learned that mimicked a squirrel rustling in the undergrowth, masking the typical stride of a human. I was making my way to one of the bends in the stream that the wild trout seemed to favor when I came face to face with a large white-tailed doe. The deer was caught off guard; standing upwind, she was unable to detect my scent. She stood less than ten feet in front of me, eyes wide and ears twitching in an attempt to understand what kind of creature unceremoniously stumbled into her line of vision. I also stood frozen for a moment, not sure what to do in my current predicament. I then remembered the deer calls I had learned about earlier and gave the best deer snort I could muster. This confused the deer further, this strange creature *sounded* like another deer, but didn't *look* like a deer. She snorted back in return, to which I responded with another snort. This went on for a few moments, until the wind shifted directions carrying my scent to her. She picked up on the undeniable sent of human and bolted, crashing loudly through the undergrowth. It seemed as if we had communicated for an extensive period of time, but I'm sure it was only a brief moment.

CONCLUSION

On a technical level, the wild clay and constraints of place material proved challenging. Ultimately, it tied into the narrative of loss of place and memory. After spending a significant amount of time conjuring a specific memory and then expressing that memory as a 3D form, I can say for certain that interaction with the object will trigger the expected memory. As objects created by me, for me, they are successful in their intended purpose. I cannot say for certain if these objects were able to evoke a sense of connection to memory for the viewer. I think the work inhabited the gallery space effectively and I feel that the objects were constructed and presented in a way that triggered a memory for those who have spent time in nature, granting them a chance to experience personal memories related to their own experiences. However, I will acknowledge that the Grey Gallery space is not necessarily the intended environment for the work and as a result it felt a little forced.

I do feel that my applied research was quite successful. At each step of the process, I was forced to conjure the memory related to the object, this layering of experience produced a “Memory-Object” that has rich, compounding, memory intrinsically tied to it.

I was surprised by the unexpected outcomes of this project. The first was the smell of the clay. I am particularly susceptible to memories triggered by smell. The clay harvested from my grandparents’ property smells just like the deer trails after a summer rainstorm. Working with it, especially on the wheel, was disorienting. It made me realize that, even though I can direct memory triggers, I cannot fully control how they affect me. The second outcome was a little more welcome. By purposely dredging up past memories, I was able to have a clearer access path to said memories.

The catalyst for this project, my grandfather, passed away a few months before my thesis exhibition. Working with a material that forced me to think about my grandparents every time I touched it was difficult, to say the least. Even as those I love fade from the physical realm, I am comforted to have these vestigial memory objects as a means of preserving my memories of them.

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PLATES



Plate A: *Thermos for the First Day of Deer Season*



Plate B: *Teapot for the Preparation of Pine Needle Tea*



Plate C: *Transitional structures*



Plate D: Berry Basket and Drainer for Foraging Berries in the Allegheny National Forest



Plate E: Berry Basket



Plate F: *Found Frying Pan for Cooking Crayfish Over the Campfire*



Plate G: *The First, and Last, Sighting of the Scarlet Tanager*



Plate H: *The Escapee of Chapman's Dam*



Plate I: *Pitcher set for Drinking Peach Tea on the Porch in the Evening*



Plate J: Tray for the pitcher set



Plate K: Junco plate, *Dishes to Wash while Identifying Birds of North Western Pennsylvania*



Plate L: Nuthatch plate, *Dishes to Wash while Identifying Birds of North Western Pennsylvania*



Plate M: Chickadee plate, *Dishes to Wash while Identifying Birds of North Western Pennsylvania*



Plate N: Downy woodpecker plate, *Dishes to Wash while Identifying Birds of North Western Pennsylvania*



Plate O: Mourning dove plate, *Dishes to Wash while Identifying Birds of North Western Pennsylvania*



Plate P: Cardinal plate, *Dishes to Wash while Identifying Birds of North Western Pennsylvania*

GLOSSARY

Glacial Silt Clay

Colloquially known as till and also referred to as boulder clay, glacial silt clay is a primary deposit of material that has been ground down by the process of glaciation. It is composed of whatever rock is indigenous to the area and is a global phenomenon, occurring wherever glaciation has taken place.

Memory-Object

An object with the inherent quality of triggering a specific memory.

Oxide Rocks

A place material containing metal oxide, more likely iron oxide in this case, that was used as a colorant on the work.

Place Material

A material with elevated personal importance due to the fact that it is derived from one particular region and minimally contaminated with material not pertaining to that region in order to preserve the inherent quality of the material.

Vestigial Memory Objects

A physical manifestation of a memory designed to specifically trigger an involuntary autobiographical memory.

APPENDIX

Oxide Fusion Printing: A New Process

Up until now, permanent image application options have been limited to materials that are fired onto ceramic surfaces using a kiln, requiring prolonged heating of the entire piece, which subsequently leads to an increase in the overall carbon footprint as well as an increase in production cost and working time. Unlike these other techniques, oxide fusion printing does not require the use of a kiln, allows for printing onto surfaces that are mixed media, keeps production costs low, and allows for a quick turn around by reducing the time needed for image application down to minutes.



Figure 26: A wood fired jar with Oxide Fusion Printed red copper oxide

Overview

I will be using the term “print” in this article to describe the process because, even though there is some etching that occurs, there is a visible remnant of reduced metal oxide fused to the ceramic material.

The process itself is fairly simple. Using a medium, an oxide is applied to the surface of fired ceramic (it can be a glazed surface or the fired, unglazed clay body). A laser etcher (like the Zing laser etcher produced by Epilog Laser) is used to fusion print. During the printing process, the etcher vaporizes a minuscule amount of silica material on the print surface, lending the aesthetically pleasing effect of metal inlay to the ceramic surface. Through the etching process, the metal oxide is inlaid into this groove, fusing to the ceramic material. Since the oxide fusion print cools rapidly, the color of the fused metal is consistent with the coloration and lustrous quality of the oxide fired in a traditional manner in a reducing atmosphere.

Combining the Laser Etcher with Metal Oxides

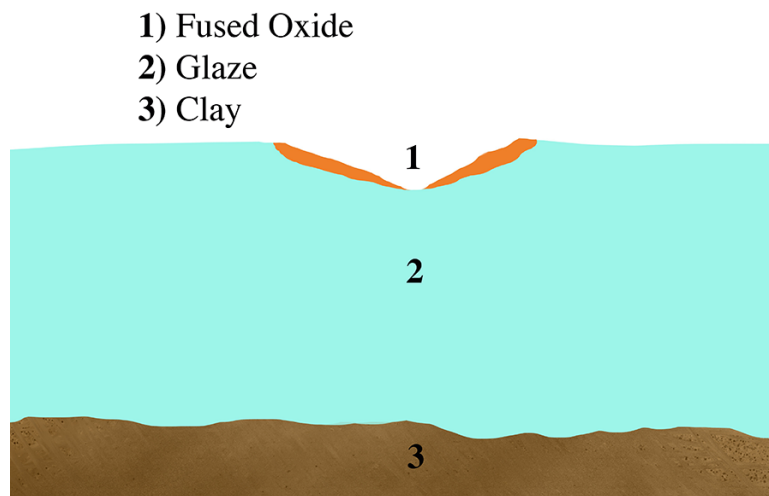


Figure 27: An illustrated example of a cross section of Oxide Fusion Printed glaze

The key component of the process is the laser etcher. While there has been some development involving etching directly into clay at different stages, its application in metal inlay is a new development.

Laser etchers work similarly to a black and white printer. Instead of laying down ink, laser etchers utilize a short blast of light energy from a laser running on an X-Y axis. Laser etchers convert light energy to heat in a really

efficient manner, focusing the light energy onto a focal point less than a fraction of a millimeter and vibrating the molecules on the surfaces until dissociation occurs.

This property of the laser etcher printing process makes it ideal for inlaying small amounts of oxide into the surface of the print. The integrity of ceramic material is fairly resilient to rapid changes in temperature; however, an abrupt shift in temperature can shock the material, causing it to shatter. Because the laser etcher does not rely on applied heat to raise the temperature of the print surface, there is less risk of causing thermal shock fracturing. This energy, created by the beam of the laser, can be used to heat the metal oxide powder to the point of fusion by adjusting the power and duration of the laser beam to the melting point of the metal oxide. I have found that every ceramic glaze and vitrified clay tested has been able to withstand sudden localized increases in temperatures to upwards of 3500°F (1927°C) without risk of stress to the surface in the form of fracturing. This includes low-, mid-range, and high-fired work.

Different metals have different melting temperatures. In order to find the correct laser etcher settings for a particular oxide, the oxides were run through the printing process on successively slower speed settings. The success of an oxide print is dependent on the melting point of a given oxide in relation to the duration of the laser beam. The longer the beam is focused on a specific point, the faster the molecules vibrate and the hotter it becomes.

Creating an Image

In order to use the oxide fusion printing method, a black-and-white design must be created. Both digital and traditional methods work for creating the initial image. An extra step must be added when using the traditional method as hand-drawn work must be scanned in order to make a digital copy. For my process, I am using an Apple drawing app called Procreate and then finishing the image in Adobe Photoshop or Illustrator. The final image is converted to a PDF, a file type that the etchers are capable of reading.

Conveniently, a canvas can be created, or adjusted, in both programs to match the exact size of the printing area. This allows for customization of each piece. I determined the print area by measuring the circumference of the pot using waxed thread. Once the design is ready to be printed, the print surface must be prepared by applying the oxide to the surface of the ceramic piece.

Preparing and Applying the Metallic Oxide



Figure 28: Applying a thin coat of red copper oxide

In order to apply the powdered metal oxide, it must be mixed with a vehicle. The vehicle I am using for my work is isopropyl alcohol, chosen for its ability to evaporate quickly after application, leaving an even coating of powder. To achieve an even layer of oxide, I mix the oxide with the alcohol to the consistency of heavy cream and then carefully roll the preparation onto the surface of the glaze with a small print roller. The oxide must be applied thick enough to fuse, but if it is too thick, the laser will vaporize the top layer of oxide without affecting the ceramic material underneath.

My preferred application tool, a sponge roller, applies the oxide mixture in a very concise manner at a thickness that is ideal for oxide fusion printing. Brushes are not ideal when applying the oxide mixture to the surface, because it creates ridges of oxide, which can affect print quality.

Fusing the Oxide to the Surface

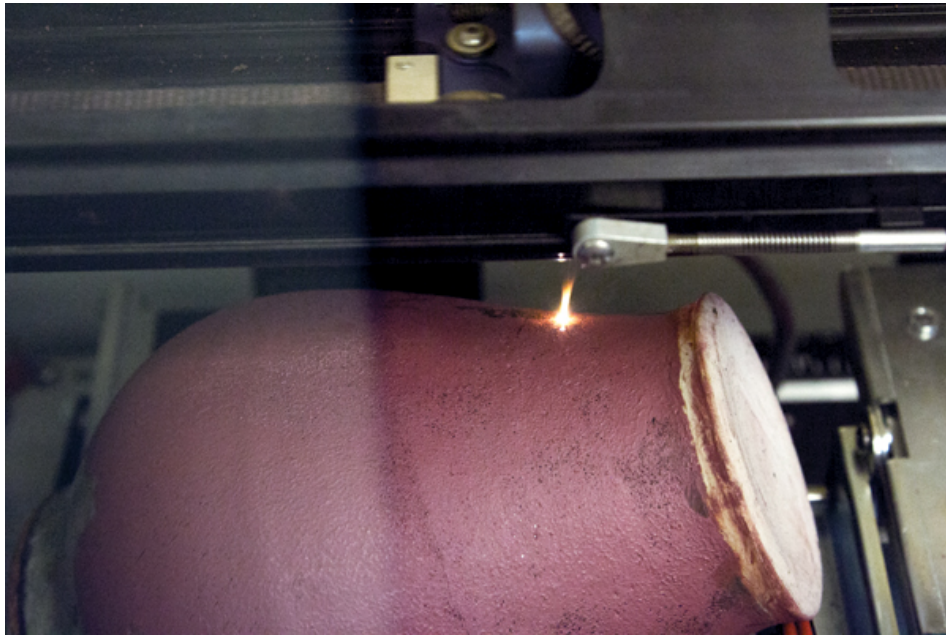


Figure 29: Laser etcher fusing oxide to jar

Once the oxide is applied to the surface, the ceramic material is ready to undergo the printing process. The work is inserted into the laser etcher and printing adjustments are made according to the oxide being used (9). I would suggest starting with a higher speed setting of 30 and making adjustments from there. If the speed is set too slow, it could burn out some of the oxides with lower melting points. The floor of the etcher is then adjusted to bring the ceramic material into proper focus. For a standard laser etcher, the distance between the laser head and the focused print surface can have a deviation of up to +/- 6 millimeters without affecting print quality. Once those limits are breached, the print quality will deteriorate rapidly. If the distance is greater than 6 millimeters, the oxide fails to fuse, conversely, if the print surface is too close to the laser head, the heat energy will vaporize the material instead of fusing it. An additional tool, called a rotary attachment, enables the laser etchers to print onto cylindrical objects.

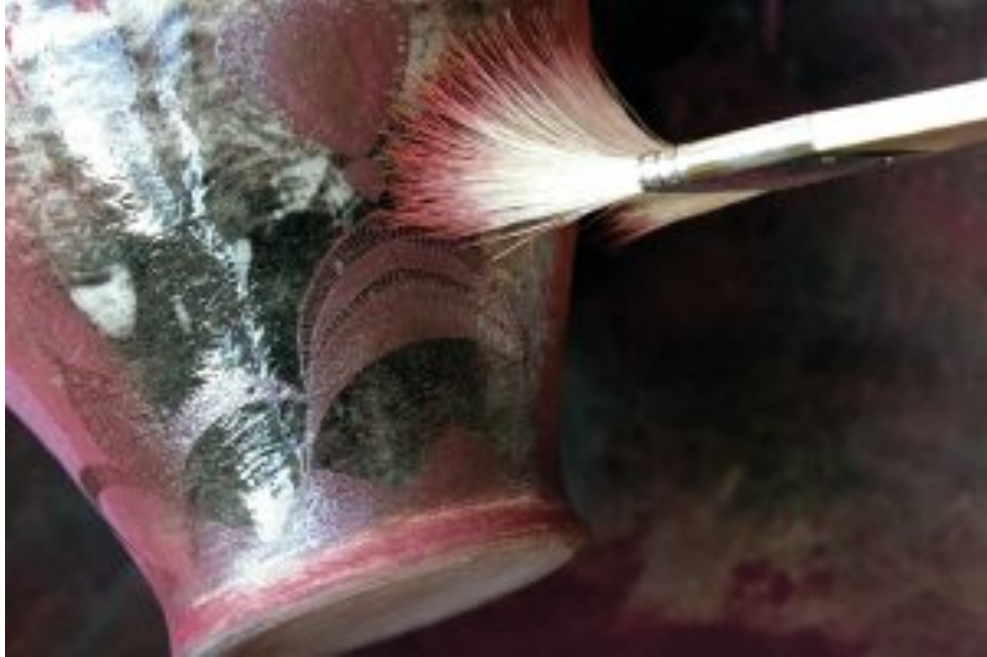


Figure 30: Removing excess oxide

Although research is still in progress, I have compiled a list of common metal oxides coupled with their ideal power and speed setting for use with the Zing Laser etchers produced by Epilog Laser.

METAL OXIDE	MELTING TEMPERATURE	SPEED/POWER
Red Copper Oxide	2250	30/100
Green Chrome Oxide	2435	20/100
Red Iron Oxide	2849	15/100
Black Iron Oxide	2907	15/100
Nickel Oxide	3551	5/100
Black Nickel Oxide	3551	5/100
Cobalt Carbonate	2723	5/100

Figure 31: Oxide Fusion Printing reference chart

The duration of the print time is dependent on the speed setting along with the size and complexity of the print. Print time for a complex, condensed, print averages in at 2.1 minutes per 1 square inch.

Once the ceramic print is run through the print session, the work can be removed and the oxide brushed off into a container for later use. The oxide is easily brushed off with a stiff paintbrush, leaving only the fused metal behind. The ability to collect the unfused oxide results in a print that uses almost negligible resources, making this an efficient and more sustainable image transfer method.