

FOR THE NOTETAKERS

by

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“...for the notetakers...” was a favorite and oft used phrase of a beloved teacher of mine. It was his cue to his serious students that this was one of the really juicy, important bits to capture. The way he said it called to something beyond fierce scribbling, and I was struck by the sweet notion of the notetakers as tribe of people, united not by the speed of their pens but rather by their thirst for meaning. I conceive of notetaking as extending beyond the page – a way of mining our attention for the layers of meaning afforded by the world around us. This body of work is both a product of and an invitation to this type of engagement, rooted in presence and reflection.

Recognizing beauty in physical voids – particularly in the complex interiors of sand dollar fragments revealed by fracture, erosion, and weathering – facilitated a shift in how I think about internal sense of void. This perceptual shift underpins this body of work, celebrating void not as the absence of something, but rather as holding space for opening and transformation. The relationship between space and structure in the fragments that serve as my inspiration offered me a visual language with which to explore the experience of vulnerability in abstract form.

I utilize forming and fabrication techniques in sheet steel for the production of these objects. The balance and interplay between structure and void is a driving concern in the work, bringing forward the relationship between the tangible and the unseen. Surface is developed with enamel and patina, guiding the eye over form and into void. The intimate scale of the work affords an opportunity for the pieces to be handled and turned over, with the intent of facilitating contemplation and cultivating an embrace of what is.

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by

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DEDICATION

*to Mama and to Baba,
to the Soul of my Uncle,
and to Sidi Usama*

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INTRODUCTION

The most salient descriptor I would use to characterize myself from an early age is as an observer, relying heavily on the visual to make sense of the world around me. Struggling with articulation and speech as a child, nature offered a haven where I could tap into visual meanings without the pressure to engage verbally. Days spent collecting shells along the coast of my home state of North Carolina were foundational aesthetic experiences, cultivating a sensitivity to natural forms that would continue to develop throughout my life.

As someone who orients myself through observation and reflection, I look to the natural world not only for aesthetic lessons, but to glean latent meanings borne visually. In her writing on creative practice, the artist Anna Held Audette articulates the relationship between the self and visual appreciation, asserting, “[W]hat will end up ‘inspiring’ you are those things that satisfy some powerful internal visual need...”ⁱ Design theorist Jessica Helfland further states, “As totems of memory and meaning, things beckon because they’re cues to who we are.”ⁱⁱ Attraction to a particular visual, whether in nature or otherwise, could be understood as latent meanings carried by the visual meeting an internal and perhaps not yet articulated need of an individual.

Considering this potential for nature to inform an understanding of the self, I became curious about the personal needs that increasingly drew me to fractured and eroded forms. I was beguiled by the inner voids and supporting structures of the sand dollar fragments that I obsessively collected when returning to the North Carolina coast. Time spent in meditative observation – tracing contours over and over with my eyes – acknowledged that the beauty of the fragment surpassed that of the whole. To witness and be won over by the perfection of brokenness and void in an external form offered a foil to my relationship to these concepts on an

internal level. I tasted what might be gained from embracing and passing through void, rather than maintaining an attachment to and attempting to restore an imagined whole.

This realization powerfully illustrated the potential for form to act as a facilitator of metaphysical experience, and laid the foundation for my use of abstraction as a means of distilling and manifesting that potential. Art critic John Berger states that, “All the languages of art have been developed as an attempt to transform the instantaneous into the permanent... Art is an organized response to what nature allows us to glimpse occasionally.”ⁱⁱⁱ This thesis body of work is an attempt of the kind Berger describes – to capture through abstraction, the ability of natural forms to call to and ease transformation.

In this endeavor these pieces occupy a strange middle ground between adornment, sculpture, and tools. At face value these works could easily be classified purely as sculpture, lacking the wearability or specific utilitarian function to be categorized as jewelry or craft. However my approach to the work is firmly rooted in what metalsmith and sculptor Kim Cridler describes as “the content in craft: the real or implied experience of function as a means to creating works that are not just intelligent or informed, but deeply felt.”^{iv} While lacking the wearability of jewelry, these objects are intended for the body, their intimate scale an invitation to be handled. And although these forms “simply don’t hold water,”^v as June Schwarcz quipped of her own enameled vessels, they nevertheless offer utility in holding the unseen.

SIGNS

How good are you at reading signs?

My mom had said it cheekily on an Odyssean road trip visiting my grandmother in the mountains of southwestern Virginia. The details of what prompted the line are a bit hazy, but it became a family refrain when confronted by circumstances bearing a message for us, often accompanied by a healthy share of absurdity. The phrase is a reminder to me now, that even at that otherwise unremarkable moment somewhere in my teens, I had a relationship to signs. The notion of gleaning meaning from everyday things and occurrences was so ordinary that it was natural to tease one another when the meanings perceived were a little on the nose. Given early challenges with verbal expression, a deep affinity for the natural world, and with a relationship to art as a mode of visual distillation and transmission of meaning, it's perhaps unsurprising that I was receptive to the idea of signs. What is significant is where that receptivity would lead, and how it would inform my artistic practice.

*There truly are signs in this for people who reflect.
The Qur'an, 13:3*

I returned to studying Arabic at a point where my spiritual path led me into Islam and its inner dimensions, known as *Tassawuf* or Sufism. Signs confronted me at the outset. The word used to denote verses in the Qur'an, *ayah* (singular, plural: *ayat*), linguistically can take on many meanings including "miracle," "sign," "ethical message," "something amazing," and "proof."^{vi} The notion of signs was contained within the basic structure of the Qur'an. Beyond structure, the significance of signs was illuminated in message as well, in the verse above and many others through out the Qur'an; Reminders that reflecting on the meanings of the natural world is an act

of worship integral to the faith. The meanings offered in these signs are contingent upon and rendered accessible by a willingness to reflect.

Seeking a deeper understanding of all that is encompassed by the Arabic word, I turned to Lane's Arabic-English Lexicon, which offered this characterization:

[Ayah] properly signifies any apparent thing inseparable from a thing not equally apparent, so that when one perceives the former, he knows that he perceives the other, which he cannot perceive by itself.^{vii}

The definition struck an unexpected chord. Presented unsentimentally and almost mechanically, it nevertheless offered fresh language for the way I encounter and collect meaning. Moments of awe and rapture are not simply exercises in visual appreciation, but hold the possibility of disclosing elusive and unseen realities. The human need for form as a seat for the intangible is identified as well. I see this spiritual framework for the relationship between physical form and intangible meanings as complementary to the aesthetic framework offered by Audette when she spoke of inspiration answering "powerful internal visual need." Audette's assertion bridges the act of witnessing to an internal process, assimilating meaning perceived externally.

In practice, uncovering the particular meanings held and needs satisfied by the fractured and eroded forms that prompted this thesis body of work began in formal observation. Initiated by the act of collection, each fragment was beheld – contours studied, edges traced, patterns identified – before being claimed. The basic internal structure shared by the fragments yielded seemingly infinite complexity and at the same time



Figure 1. Collected sand dollar fragments

could be worn into bare, essential gesture. The collection materialized not out of a desire to amass quantity, but rather to capture diverse expression unified by a common visual vocabulary.

Study of this vocabulary moved from observation to representation, expressed through myriad media and techniques including sketching, pattern design, and chasing and repoussé. These ways of working weren't ends in themselves, but were instead a mechanism for internalizing the language offered by the fragments.

You can be in that space of the poem, and it can hold you in its space, and you don't have to explain it. You don't have to paraphrase it. You just hold it, and it allows you to see differently.^{viii}

Through repetition, representation enabled an embodied sense of form and space. A student of Naomi Shihab Nye shared the above in a letter to the poet illustrating the shades of meaning carried by a Japanese word, *yutori*, translated as spaciousness. Her description captures the permeability between self and inspiration opened by this kind of open engagement.



Figure 2. *Between Ceramics and Stone*, Bai Ming

The work of contemporary ceramic artist Bai Ming, in a series titled *Between Ceramics and Stone*, offered a gateway into both a historical practice that mirrored my exploration, and material process as a mode of meditation on form.^{ix} Mr. Bai employed hand building, carving and modeling to create these sculptures, drawing inspiration for this body of work from the tradition of Chinese scholars rocks.^x Beginning in the early Song Dynasty (960–1279), naturally occurring eroded rocks were selected, sometimes subtly altered to enhance form, and displayed on pedestals for the purpose of contemplating the universe.^{xi xii} This tradition offered one possibility for how these forms might answer a visual need – acting as analogy to dynamics and transformations that occur in nature at every scale.

I had the opportunity to study with Mr. Bai in a workshop at Haystack Mountain School of Crafts, where he generously shared his insight on working subtractively to engage void and form. The nature of the porcelain necessitated a gradual process of removal. Rough spaces were carved out initially, always considering the connections between voids. Light and shadow

provided guidance for holistic resolution of form. The aim was not to reproduce something existing in nature but to abstract it, enabling the viewer to access a new vision.



Figure 3. Porcelain study



Figure 4. Bronze study

I continued to explore these forms in porcelain, and began to work in wax as well, to be cast in metal. Though the tools varied slightly for each material the principles were the same. Using round carving tools, I would remove large sections of material, gesturally establishing voids in relation to one another. Progress was guided by considerations of density and light, structure and void. As I continued to remove material, refinements became subtler, and I responded intuitively to what was called for to establish balance. The process was one of constant visual and tactile attunement, opening an internal spaciousness for presence and contemplation. It was in this space that I began to understand the personal meanings held for me in these forms.

INVITATION

Bowl Work

*The work of a bowl
of lake and cave
bathtub and sink
aquifer and spoon –
this is oxygen work
never noticed
til it's missed*

*Imagine living without bowls
drinking only from springs
not even a cupped hand to hold
never carrying anything home
because home is a bowl
the place a grape rolls and settles
and it seems it does nothing
despised among crockery
but it is a boat
a parasol
cradle
pool*

*(No-one wants to be a bowl
but everyone needs a place
to put their grapes)*

*Now imagine the bowl burnished
by hands that know it, value it,
understand the work it does
oil its worn faces to a patina
'til the knife curls with envy*

*And practise being a bowl
apparently still
holding*

-Medina Tenour Whiteman^{xiii}

The uncovering of personal meanings and needs seemed to build slowly and then happen all at once. To be occupied by these forms, to internalize them, set up a kind of cognitive and

embodied dissonance. It was clear over a long period of engagement with these structures inscribed by void, both those found in nature and the ones I was producing, that I was captivated. However, captivation can encompass many possibilities. It would be more precise to say that the *beauty* of these forms captivated me. The significance in this distinction is an internal one – what this recognition of beauty was agitating against.

The language of void was familiar to me. But where physical expression of these words enthralled, internally they demarked absence of self. Damage to be filled in and painted over to be made, or at least appear, whole again. Scrambling to cover lack out of shame. A persistent hum of dismay at what was lost, or taken, or from which I was fundamentally excluded. What externally beguiled, incised sharply within. The potency of these internal voids in effacing my sense of self was not drawn from their content, but actually consisted of and was maintained by my panic at how far they might extend. I was unable to see the structure for the void.

The only choice we have as we mature is how we inhabit our vulnerability, how we become larger and more courageous and more compassionate through our intimacy with disappearance, our choice is to inhabit vulnerability as generous citizens of loss, robustly and fully, or conversely, as misers and complainers, reluctant and fearful, always at the gates of existence, but never bravely and completely attempting to enter, never wanting to risk ourselves, never walking fully through the door.

-David Whyte^{xiv}

The shift I underwent was not a conscious one. It wasn't negotiated in the intellect or achieved by force of will. It was like suddenly gaining the ability to see to something that was previously invisible, only the seeing was actually an embodied knowing. These forms affirmed their unseen counterpart – self, not annihilated by absence, but holding it. Capacity and spaciousness were recovered in what was previously a site of suffering. Vulnerability defined

this meeting of structure and void; a threshold that might be crossed by abandoning fear for presence.

It is significant that the preceding description actually consists of conscious conclusions and outcomes, but is able to neither convey nor replicate the reality of the experience itself. Sufism distinguishes intellectual knowledge from knowledge arising from direct experience. Jeremy Henzell-Thomas discusses this distinction between the intellect and what he terms spiritual imagination:

The spiritual imagination is not a cogitating, thinking faculty working with abstract concepts. It's not 'head stuff' but a faculty of concrete perception, of deep seeing within the heart, and knowing through direct experience. Mevlana Rumi calls this the 'kernel', in contrast to what he calls the 'husk' of the intellect. As the eleventh-century philosopher, theologian and mystic Al-Ghazali said, the way to spiritual certitude (*yaqin*) is through 'tasting' (*dhawq*).^{xv}

The concept of *dhawq* captures two predicaments regarding knowledge arising from direct experience. The first is that of access. As Dr. Bilal Ware put it, "experience and experiential knowing cannot be replicated through discourse."^{xvi} What must be tasted can only be tasted. Adjectival descriptions and analogic comparisons cannot put the taste of honey on your tongue.

Taste is an apt metaphor for direct knowledge not only for its viscosity, but also for its fleetingness. The second predicament being that what was realized experientially within was not permanent. Sufism distinguishes between a *hal* and a *maqām*:

These terms signify the temporary and more permanent levels of consciousness that are experienced on the journey of spiritual realization. *Hal* signifies a temporary, passing state, while *maqām* is a place of stabilization, a fixed station.^{xvii}

These terms are traditionally presented in tandem, as the former is considered essential to achieving the latter. A *hal* offers a taste of the *maqām* that can be established through intention and cultivation. This pairing recalls Berger's reflection on the role of art:

All the languages of art have been developed as an attempt to transform the instantaneous into the permanent... Art is an organized response to what nature allows us to glimpse occasionally.^{xviii}

I had been offered an invitation. I was granted a taste of what might be cultivated through reflection on and presence with void and form. It was then natural that I reached for art to realize what nature had allowed me to glimpse.

ESTABLISH

REALIZATION, in its fullest meaning, is not merely knowing something, but making it real in oneself.

-Kabir Helminski^{xix}

Void and form had facilitated an unveiling of meaning, engaging the center of direct knowledge in the heart. What I had experienced was temporary, but might be established through remembrance, choosing again and again to be present to uncertainty and to move through it. The beauty of form inscribed by void had bypassed my defenses, inviting me to taste integration. In embarking on the work of choosing vulnerability, I sought a source of support that would draw me in with this same beauty, especially when the intellect resisted in fear. This thesis body of work emerged as an attempt to distill through abstraction, the ability of form to invite transformation.

Approaching the work from a background in jewelry, there was an appealing intimacy and proximity offered by adornment that felt appropriate. The ability to keep these forms close and for them to be handled, offering the tactile reassurance of a worry stone, would support turning into vulnerability. Yet, there was an outward orientation in an individual's relationship to jewelry that did not quite match. Jewelry is often selected for its ability to message to others about the wearer, communicating style and identity. Much like perfume, the wearer selects what they enjoy and wear it with intention, but after a few minutes direct engagement is largely concluded and it becomes about those who will perceive it. This outward projection did not align with the intent of internally establishing the meanings held by the work. The issue of mechanisms of attachment presented another dilemma, breaking the composition of form and

void and likely interrupting the meditative state yielded in tracing contours and surfaces with both eyes and hands.

The realm of sculpture could lift some of the challenges presented by adornment. There would be no need for mechanisms that would disrupt form, and pieces could be highly dimensional without reference to how they would rest on a wearer. As sculpture these objects might be closely observed and considered in the round, rather than being positioned in one orientation for display on the wearer. But conventional engagement of sculpture was not an ideal fit for the intended relationship either. There is a distance and stasis implied by the conventions of gallery display – the white pedestal signaling, *look, but don't touch*. Even in the case of sculptural works on a monumental scale, while they may allow and invite the viewer to walk through space defined by form, they offer the individual the experience of being held rather than activating their ability to hold. The experience of containment, offering intimacy and impressing a sense of one's smallness, would not necessarily translate into individual cultivation of internal spaciousness. The function intended in these objects might be entirely missed if engaged purely within this framework.

The pieces should be handled, turned over, placed in multiple orientations, gazed at and through. I wanted to not only employ the vocabulary of form and void, but to illuminate the meeting of the two, drawing attention to the alchemy taking place at that border. Rendered at a scale to fill the hands, they would evade the impulse to wear, yet still engage the desire to bring them inward and assimilate, if only achievable in meaning. The intention for the work placed it somewhere between jewelry, sculpture, and even hand tools, but with a utility based outside of the physical realm. That the work would exist outside of traditional categorization is not

remarkable in and of itself, but would forerun the internal movement into the unfamiliar invited by the work.

FRUITION

With the tactile engagement, surface, and scale desired for the work clear, material choice and technical considerations came to the fore. Given previous exploration in metals and ceramics, enamel and glaze were likely candidates for illuminating the meeting of form and void. Lost wax casting and carving porcelain each presented limitations to the realization of these objects. The scale intended was beyond the capacity of lost wax casting. Even if the forms were executed using larger-scale casting techniques, they would be cumbersome and heavy in the hand and would not allow for the application of enamel. Though perhaps more feasible in terms of density, the porcelain would exhibit stress and become fragile in the process of carving at this scale. Glaze presented a challenge as well, as it could not be developed over successive firings in the same way that enamel on metal could.

These considerations met with the opportunity to take a workshop with the sculptor Hoss Haley on the construction of hollow forms in steel. Gaining experience with cold forming and TIG welding, I found a material and process that would answer all the formal and technical parameters I had identified. Hollow construction would yield a lighter object for the hand. Exposed steel could be blackened and burnished to a beautiful satin finish. Enamel could be applied, and welds would not come apart in the firing process the way a soldered seam would. Subsequent study with the jeweler Kat Cole on the process of enameling on steel confirmed the suitability of these materials for the forms intended. Enameling Iron, a steel alloy containing 2% carbon, would be more malleable for cold forming, would ensure adhesion of enamel, and would not warp at firing temperatures. Spray application of liquid enamel was particularly well suited to holding onto concave surfaces.^{xx}

The transition from working subtractively in a solid material to generating hollow forms from sheet metal held certain challenges not immediately apparent. The order of operations for fabrication was clear in terms of what surfaces needed to be addressed first. I would begin by establishing the inner most surface, consisting of a ring or truncated cone with curved walls. These tight curvatures would require the most access to form, fit, and weld. Subsequent faces would be formed and fitted to previously established surfaces, and welded successively, radiating outward from the inner void. Having cultivated fluency with the visual language employed in the work, I anticipated being able to resolve the overall form within this progression of steps. What became clear, however, was that each step laid out a decisive final surface that could not easily be adjusted as the whole form took shape.

Reflecting on the subtractive process that I used in clay and wax, I had begun by removing large sections of material in sweeping gestures. This first roughing out of material provided landmarks guiding holistic realization of the form. As compelling relationships between planes emerged, subtle refinements were made to develop balance between structure and void. The earliest surfaces established in this process were often no longer present in the final form.

In order to be able to achieve the refinement of and balance between structure and void that I wanted, resolution and fabrication of form would have to be addressed separately. The materials I had turned to previously for exploration were not ideal for rapid iteration and refinement, especially at this larger scale. I needed a material that was less dense but still rigid enough to capture subtle curvature.



Figure 5. Balsa foam models

High-density balsa foam provided an ideal alternative. The material has a density similar to balsa wood, but as a plastic foam has no directional grain structure. A jeweler's saw and large bastard cut file made quick work of roughing out the model's general shape and exterior faces. I was able to use large round wood carving burs on a flex shaft to rapidly remove material and establish inner surfaces, working in the same way I had at a smaller scale with round wax carving burs. Larger versions of the sculpting tools I had used for carving porcelain were equally effective in sculpting foam. Turner's mesh, a flexible strip of open weave material in various abrasive grits, allowed for clog-free sanding while conforming to curved surfaces. The complete set of analogous tooling I was able to assemble for working in the foam allowed for a seamless transition to model making for pieces at a larger scale.

Once the models were completed, patterning, forming, and metal fabrication could begin. As mentioned before, this process

started by establishing the innermost surfaces of the forms, consisting of rings or truncated cones with curved walls. A flat pattern had to be generated, providing sufficient material for the sheet metal to be hammered into the three dimensional form. The degree of curvature to this innermost surface of the model in most cases made patterning with a sheet of flat material like manila or Bristol impossible. I applied strips of narrow electrical tape to the model, conforming to the

High-density balsa foam provided an ideal alternative. The material has a density similar to balsa wood, but as a plastic foam has no directional grain structure. A jeweler's saw and large bastard cut file made quick work of roughing out the model's general shape and



Figure 6. Balsa foam carving tools

contour of the surface and overlapping to create a continuous piece. Once the interior of the inner surface was covered, I used a permanent marker to trace the edges of the ring, as well as to mark the overlap of the tape where it would be separated for removal at the narrowest part of the band. Once removed from the form, the excess tape was trimmed and the tape was gently flattened onto some manila to provide a backing. I then drew margins around the tape, adding more material to the portions with the deepest curvature, generating the final template for the steel sheet. The 16ga steel blank was cut out using a jeweler's saw, and the edges were dressed using aluminum oxide deburring wheels on a benchtop grinder to prevent marring hammers and stakes during the forming process.

The process of transforming this flat blank into a ring with the desired curvature for these forms requires an approach known as *synclastic forming*. The term *synclast*, introduced to the field of metalsmithing by Heiki Seppä, denotes a surface where two orthogonal curvatures are present and curve towards the same direction, yielding a shell that could hold water when held in a certain position.^{xxi} *Synclastic forming*, *synclasting*, or *sinking*, all refer to the same process of introducing these two curvatures to sheet metal by hammering into a wooden block containing a depression that the metal can be stretched into.^{xxii} Betty Helen Longhi and Cynthia Eid refer to the short and long curvatures as the radial curve and the axial curve respectively. One of the qualities of these curves is that they are interchangeable, meaning that as one tightens, the other will tend to open up by a similar degree.^{xxiii} In the case of a synclastic ring, the axial curve is circular, with the ends of the blank brought around to meet one another. As Longhi and Eid describe,

The challenge of synclasting a form with a circular axial curve is that as the axial curve is tightened, the hammer can no longer reach the inner surface of the form. Therefore, we synclast the form until the axial curve is as deep as possible and over form the radial curves. After the axial and radial curves are interchanged, each axis will have the desired curvature.

In order to form these components, I began by choosing an embossing or raising hammer with tighter curvature(s) than the ones I wanted to impart to the sheet metal. I hammered into the



Figure 7. Forming hammers

end of a section of soft pine block to create an oval depression in the wood with matching curvatures. Beginning in the middle of the metal blank, I began to hammer the piece into the wood block. As mentioned by Longhi and Eid, while

establishing both curvatures, it is important

to focus first on achieving sufficient depth in the radial curve, tightening it even further than is necessary for the final form. Tightening the axial curve is secondary, as once the ring begins to close it will cut off hammer access to the inner surface for further stretching. Once the entire blank had been sunk and the radial curve was sufficiently tight, I began to form the axial curve around a ball stake of a smaller radius, using a weighted rawhide mallet from the outside to bring the metal around to meet at the ends.

Once the ends met and the radial curve opened to its final state, I overlapped the ends slightly. This allowed me to scribe against the edge of one end onto the surface of the other. Using a jeweler's saw to trim the excess material left a tight seam for welding. Next I employed a strategy from ring making to introduce spring into the metal, exerting internal force on the seam so that it does not shift during welding. The ring is tightened, with one end pulled on top of the other (A over B). The ring is then opened up before tightening again, this time reversing the position of the ends (B over A). Finally the ends are pulled apart just enough to meet.

Seams were TIG welded using a Miller Maxstar STH 161 with a 1/16" tungsten electrode and #4 ceramic nozzle. The majority of seams were fusion welded, meaning no extra material was introduced into the joint. In cases where extra material was required for the weld, I cut thin strips of the same sheet steel to ensure that the composition would not be altered at the seam and potentially compromise enamel adhesion later on. I tacked the ends together before progressing down the length of the seam.



Figure 8. Welding setup

Once welded, I used nylon mesh grinding wheels mounted on a 1/4" shank on the flex shaft to remove excess material and oxidation, and blend the weld into the rest of the surface. The piece was checked for consistency with the foam model, and any adjustments were made using files or jeweler's saw, and a bench grinder. At that point, early in the fabrication process, it was especially important to maintain as much fidelity to the model as possible, so that subsequent patterns pulled from the model would match well to the metal form being constructed.

Moving on to the adjacent surfaces of the forms, there began to be greater diversity in the



Figure 9. Sinking stump

forming processes required. In some cases where curvature was fairly shallow, no seam was required to achieve sufficient depth in the sheet metal. In these cases round or oblong pieces of sheet were cut to match the overall shape of the surface to be formed, and were sunk into stumps with shallow bowl forms. The curvature was further refined by inverting the piece onto a mushroom

stake of similar curvature, and *bouging* using a weighted rawhide mallet, a process of smoothing out marks or unevenness in the metal from

the forming process. Once the surface matched the model, the interior ring could be placed at the intended point of connection, and a line scribed to mark where the second piece should be pierced before welding the two together. In other



Figure 10. Forming stakes

cases with tighter and more uneven curvatures, a seam must be introduced to the pattern in order to bridge the flat blank to its final, more dimensional form. Here the patterning and forming process progressed similarly to the construction of the internal ring, made easier by the larger size of the piece and more open access to hammers. Again bouging on mushroom or round stakes, often using several on the same piece, helped in matching multiple curvatures. Once forming was complete, ends would be brought together and fitted as before, in preparation for welding.

Once any internal seams in the new surface were welded, the task of fitting the edge joining this part to the inner ring began. This process was more painstaking than fitting simple ends together, often requiring multiple rounds of scribing, filing or sawing, and rechecking. Once a tight seam was achieved around the entire edge of the inner ring, welding could begin.

Finding appropriate fixtures to hold the two parts together across the entirety of a three-dimensional, organic seam posed a challenge. In many cases, standard vice grips either could not securely hold curved surfaces in place, or would cause one or both of the parts to flex, compromising the fit of the seam. Ultimately the best option was to position and secure the pieces using small, angled magnets, ordinarily used for holding flat sheet at specific angles. Once secured, tacks could be made incrementally along the seam before welding along its length. Fixturing was also important to ensuring proper angling of the TIG torch relative to the position of the seam. Working along a tight curvature required frequent repositioning to enable torch access and maintain the correct angle of incidence for the electrode.

With each successive addition to a form, the process followed the same cycle – generate a pattern, cut and dress a blank, form to match model, fit to existing structure, and weld. These steps generally conformed to previous process descriptions, with a few important differences as surfaces became more varied towards the exterior of each form.



Figure 11. Balsa foam model and patterns

As surfaces became less tightly curved, I increasingly relied on manila as a patterning material. By pulling a sheet across the edge of my bench, sometimes in two directions, I was able to introduce enough curvature to the material to match these surfaces of the model.

Manila patterns could then be positioned in place on the metal structure and by running a finger over the manila where it met adjacent metal edges I could make very accurate patterns. Working in tandem between the model and the structure was particularly important as fabrication progressed, where subtle differences in the metal structure needed to be taken into account.

Though most of the forming was synclastic, achieved by sinking into voids and doming on rounded stakes, some exterior surfaces required *anticlastic forming*. An *anticlast* is a surface containing two axes of curvature that face in opposite directions, yielding a surface that cannot hold water in any orientation.^{xxiv} This type of forming required a sinusoidal stake.

As forming became more complex, in some cases fitting a new surface across the entirety of its edges before welding became impractical. Tacking and welding certain portions allowed for more purchase on the section, and hammering directly on the form enabled the final fit. In cases where edges needed to be refined on the form and saw access was not possible, cutoff wheels were used to remove excess material.

Dressing of welds with grinding wheels was done incrementally through out the fabrication process. Though not necessary from a technical standpoint, cleaning up welds and surfaces allowed for better visualization of the overall form as it took shape. Once each form was closed, a final pass was made with the nylon mesh grinding wheels on all welds and surfaces.

Any gaps in seams or areas of excessive pitting were welded and finished again. Finally a small vent hole was introduced with a fine drill bit to allow for venting during the enameling process.

The steel forms were prepared for enameling using a sandblaster with 80 grit aluminum oxide media. The abrasion of the surface offers a mechanical aid in adhering the enamel to the steel.^{xxv} Once blasted, the forms were scrubbed with a Scotch Brite pad, water, and dish soap, to ensure the removal of any oil or residue that might interfere with enamel adhesion. The forms were immediately dried with a towel and heat gun to prevent rust from developing.

Thompson Enamel's Low Fusing Clear Transparent Liquid Form Enamel (BC-969A) was prepared with distilled water and applied to the forms using a Critter Siphon Gun. Warming the pieces with a heat gun prior to spraying helped to quickly evaporate the water on contact, and helped to prevent runs in the enamel. The

enamel was directed to the innermost concave surfaces of the form. Once an even coat was achieved, the heat gun was used to dry the enamel completely. The edge of an X-acto knife was scraped along the edges between adjacent surfaces where one was to



Figure 12. Liquid enamel tools

be enameled and the other was to be bare metal. A foam brush was then used to sweep any enamel overspray from the surfaces intended to be left bare. The forms were fired to 1550°F in an enameling kiln. After firing, wax was applied to the still warm metal surface. After cooling further the wax was buffed to a burnished finish.

The enameling process yielded two important results that altered the resolution of both the bare metal and enameled surfaces. I had originally planned to mask the enamel and sandblast

the bare metal a second time in preparation for application of a steel blackener. The firing process, however, produced a beautiful heat patina on the steel, eliminating the need for chemical patination.

The initial intent for the enamel was to apply the clear flux as a base onto which china paints could be added, evoking the use of color in sacred Islamic Art as a facilitator of spiritual experience. In considering the introduction of color to these surfaces, a central concern was doing so in a way that related to and integrated with the forms. What became apparent in firing the flux base coats was that the flux was already accomplishing this intent better than any imposed color could. A range of tones developed from this one material, from milky whites, to warm grays, to golden hues. The variation was a result of the thickness of the enamel coat interacting with the uneven distribution of heat within the form during firing – the form itself produced these variations in color. When held and observed, these surfaces dynamically pulled in colors from the environment, casting them in honeyed light.

OFFERING

The Reed Flute's Song

*Listen to the story told by the reed,
of being separated*

*'Since I was cut from the reedbed,
I have made this crying sound.*

*Anyone apart from someone he loves
understands what I say.*

*Anyone pulled from a source
longs to go back.*

*At any gathering I am there,
mingling in the laughing and grieving,*

*a friend to each, but few
will hear the secrets hidden*

*within the notes. No ears for that.
Body flowing out of spirit,*

*spirit up from body: no concealing
that mixing. But it's not given us*

*to see the soul. The reed flute
is fire, not wind. Be that empty.'*

*Hear the love fire tangled
in the reed notes, as bewilderment*

*melts into wine. The reed is a friend
to all who want the fabric torn*

*and drawn away. The reed is hurt
and salve combining. Intimacy*

*and longing for intimacy, one
song. A disastrous surrender*

*and a fine love, together. The one
who secretly hears this is senseless.*

*A tongue has one customer, the ear.
A sugarcane flute has such effect*

*because it was able to make sugar
in the reedbed. The sound it makes*

*is for everyone. Days full of wanting,
let them go by without worrying*

*that they do. Stay where you are
inside such a pure, hollow note.*

*Every thirst satisfied except
that of these fish, the mystics*

*who swim a vast ocean of grace
still somehow longing for it!*

*No one lives in that without
being nourished every day.*

*But if someone doesn't want to hear
the song of the reed flute,*

*it's best to cut conversation
short, say good-bye, and leave.*

*-Mevlana Rumi
(Translated by Coleman Barks)^{xxvi}*



Plate 1. *for the notetakers*, installation view. Gallery North, Penland School of Craft, Penland, NC.

There is an austerity to the room; a vulnerability of space not yet inhabited. But there is a warmth, too. The totems of bench and table assure a place for you. The marks of their anticipation unseen, but felt. Seated, legs swing unencumbered; a familiar sensation of past joys. The table set, stretches to meet your gaze. Peering eyes welcomed to draw nearer. A bodily question circulates, but is not dared. Unasked, it is answered. *Yes, you can hold them.*

The exhibition, *for the notetakers*, was designed to facilitate embodied engagement of the work. This was not merely an issue of allowing people to touch the pieces, but involved preparing individuals before handling the work. Environmental cues help the individual to shift from the intellect into the space of embodied knowing. Spaciousness is preserved in the gallery, with minimal interruption by display. Furniture, rather than pedestals, connects to a sense of

home and the lived intimacy desired with the work. Both bench and table were designed to be taller than standard furniture heights. The somatic experiences of swinging legs and peering closely, subtly call forth childlike curiosity.



Plate 2. *for the notetakers*, installation detail

The opportunity to collect and position the objects in proximity to one another cultivates play and exploration. The length of the tabletop offers a landscape for these objects to inhabit and activate, the character of each partially revealed in shadows cast and light spilled.



Plate 3. *Object No. 4*

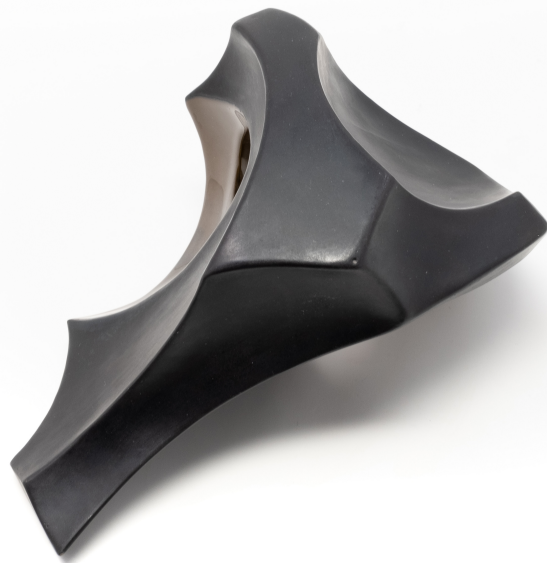


Plate 4. *Object No. 7*

Often mistaken for clay at first glance, the burnished matte steel offers a sense of softness and solidity in equal parts. In the hand, though, the hollow construction surprises with lightness, and reveals a sense of vitality and strength. When I first carried a piece home from the studio wrapped in a shop towel, I was amazed by the sensation that what was in my hands was alive. This element of surprise rewards curiosity with delight.

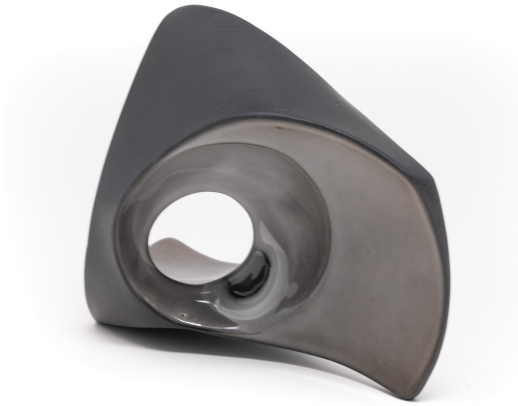


Plate 5. *Object No. 2*

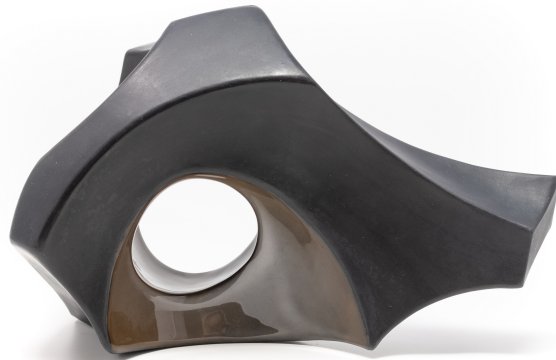


Plate 6. *Object No. 7, alternate view*

Movement is not only produced in the handling of the work but is evoked in the gesture of sweeping outer surfaces. These planes recall the motion of dervishes and the shapes of their garments, whirling in the *Sema* ceremony. Inner enameled surfaces suggest the relationship of hands in this turning:

[T]he dervishes unfold their arms and whirl... [They] extend their arms, right palm facing up and the left down. The energy from above enters through the right palm, passes through the visible channel of the body, then passes through the left palm into the earth.^{xxvii}

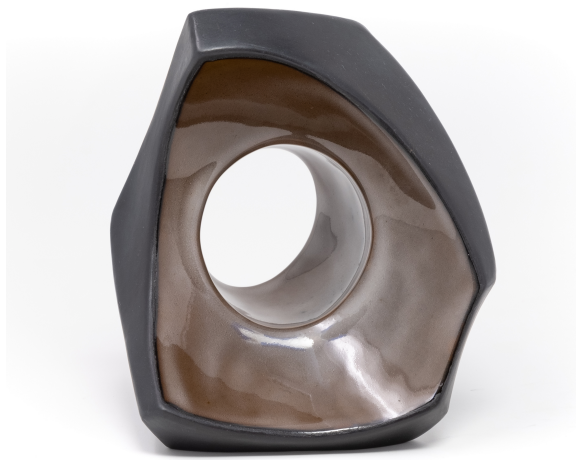


Plate 7. *Object No. 1*



Plate 8. *Object No. 4, alternate view*

Enamel furthers the motion inward, drawing the eye with light through void. Borrowing from the poet Rumi, this is the site of “hurt and salve combining.” Void and form melt into one another in a strange alchemy of healing. The light traveling through the enamel doesn’t transport the beholder elsewhere – it pulls in color and forms from the surrounding environment, supporting presence to what is.

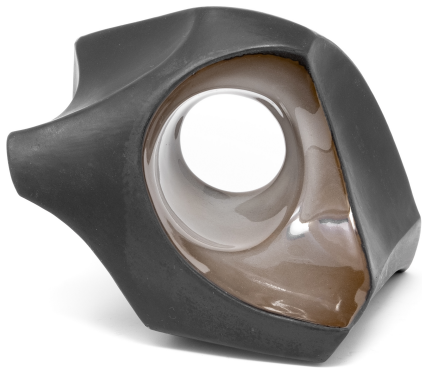


Plate 9. *Object No. 3*



Plate 10. *Object No. 2, alternate view*

These objects undoubtedly are of a kind. They belong to and emerge from a unified vocabulary inscribed by void. But within this unity, each possesses a distinct character, rooted in the holding of void – the hiding of it, in defiance of it, in acceptance, in submission, in embrace. They offer a mirror to our own inner holding. The act of choosing – a favored piece, orientation, vantage, surface, contour, shadow – begins a process of meeting and mapping as yet uncharted needs.



Plate 11. *Object No. 4, alternate view*



Plate 12. *Object No. 8*

CONCLUSION

Among the fragments I collected was a vision that recovers void as a site of transformation. I embarked on this thesis body of work with the intention of distilling the meanings offered to me in the language of form and void. The purpose of the resulting objects was twofold: To call to the experience of tasting and embodied knowing, and to support realization of the integration I glimpsed, in the daily practice of choosing to step into vulnerability.

The former was ventured in the exhibition *for the notetakers*. Even if the short term of engagement did not allow for the full unfurling of personal meanings held by the pieces, the opportunity to shift from the mind into an embodied curiosity, and for that curiosity to be satisfied in the handling of the work, offered a taste of internal need being satisfied by form.

As to the success in the later aim, I can only offer my own experience in long-term engagement with the work. Where I anticipated the pieces to offer tactile support in the manner of a worry stone, in practice they have equally been touchstones, offering an accountability of form. The work of presence and vulnerability is hard, and I find myself a *miser and complainer, reluctant and fearful* more often than I am able to *[walk] fully through the door*. In these moments, I often find it hard to look at these objects, my inner fears exposed as if bruising their contours. But in the moments I am able to abandon my fear I am able to see their beauty anew, and remember their generosity in continually inviting return.

ENDNOTES

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- ⁱⁱⁱ John Berger, *The Sense of Sight: Writings* (New York, NY: Vintage International, 1993), quoted in, Diane Ackerman, *A Natural History of the Senses* (New York, NY: Vintage Books, 1995), 277.
- ^{iv} Kim Cridler, *Unpublished Interview with the Artist*, April 19, 2017.
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^{xvii} Kabir Edmund Helminski, *The Book of Language: Exploring the Spiritual Vocabulary of Islām* (Watsonville, CA: The Book Foundation, 2006), 80.

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^{xxiv} *Ibid*, 28.

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