

B. Welling Hall

Earlham College

Swords into Plowshares New Directions Project

Summer 2013

My original goal, as I conceived this project, was to learn the blacksmithing work of actually beating a sword into a plowshare. This goal evolved to become learning artistic skills and techniques that I could use to transform weapons and remnants of weapons into functional, beautiful objects and tools. I had already begun to acquire some novice skills in metalsmithing. In this project, I worked under the guidance of accomplished metalsmith, Professor SungYeoul Lee.

Although it sounds like a cliche, the project was successful beyond my wildest dreams. I am so thrilled with my accomplishments this summer, I hope can begin to convey to you how significant it was. My thoughts were CONSTANTLY evolving.

First Project

Over the course of the six weeks (3 weeks in a May Term course, 2 weeks of independent study, and one week of reflection), I completed two projects: Garden Shears and Two Bullets per Person. The first stage for both projects was collecting materials. Some of this was mundane: ordering supplies from a metal smith supplier; the more challenging aspect was collecting weapons and remnants of weapons. Between February and May (the official start of the project) I acquired 2 quarts of tumbled spent ammunition from the ROTC program at Michigan Technical University; 100 pounds of bullet casings from the Richmond, Indiana Police Department; and a set of hardened steel throwing knives, a machete, and a combat knife from eBay.

The first (and ongoing iterative step) was to figure out what I was going to make. My thinking included these concrete, discernible stages.

1. Turn combat knives into scissors
2. Turn a machete into a scythe
3. Turn combat knives and melted bullet casings into scissors with peace sign handles
4. Turn combat knives and melted bullet casings into organic, conceptual “scissors” with multiple petals
5. Turn combat knives into functional scissors with organic design and petal ornament
6. Turn combat knives into functional scissors with organic design and floral reference

Steps involved

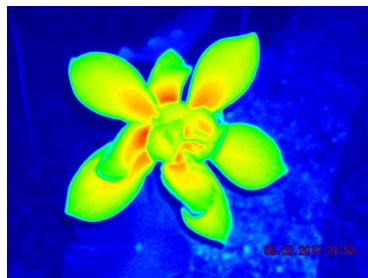
In order to fabricate the work titled Garden Shears, I had to study and practice dozens of metal smithing techniques. Many of these are quite advanced techniques and my first exposure whet my appetite to learn more. The techniques I tried out included design research; refinement of design with CAD software; print out and adjust the design; direct casting; sawing (metal and wax); filing, drilling and filing interior spaces; sanding, milling, and grinding; hinge and rivet making; use of calipers; lost wax casting (itself a multistage process of weighing, investment making, melting out, etc.); soldering; finishing and polishing.

Bullets ready to be cast



A key component of the project was actually melting the bullets so that the resulting material could be used to cast the projects I wanted to make. This photo shows bullets that were melted for my first project. In total, I used approximately 1 cup of the 100 pounds of donated shells. Obviously, I need to make more art!

The next photo is a picture of my first casting experiment. I direct cast a peace sign by carving a mold into a cuttlefish skeleton prior to practicing the more advanced technique of lost wax casting.



This is a heat map photograph I took in Cambodia last summer the week I visited the Tuol Sleng atrocity museum in Phnom Penh. This image was central to the design of Garden Shears. I hope you will see how the handles directly cite the shape of the petals of this flower.

In order to incorporate throwing knives into Garden Shears, I had to modify the blades (cut off the handles) in order to set them into my petal handles. Let's just say that it is very difficult to cut through hardened steel. It is almost as if they were designed to resist being cut in half :-)



In order to seat the blades into the handles of the shears, there was a lot of milling, sanding, and filing to do. I also had to learn how to use calipers in order to measure very precisely. Initially I would have been satisfied with a sculptural piece that looked like a pair of scissors, even if they could not actually function. However, Sungyeoul set a very high bar. Before earning his MFA, he considered becoming an automobile designer and he is deeply committed to precise engineering in the execution of his designs. Under his influence, I worked hard to complete a project that was as mechanically perfect as possible

Final Garden Shears

Here they are! Aren't they gorgeous? Melted bullets and modified combat knives: a beautiful, functional object from weapons and remnants of weapons ☺



Second Project

My mentor thought that it was artistically important to be working on two projects simultaneously. This was, indeed, a blessing as during waiting or leavening times on one project, I could turn my attention to the other. As the topic of the May Term that I took at the beginning of the project was focused on making eyeglasses, my first iterations of thinking about the second project focused on the juxtaposition of vision and violence. I tried to conceptualize projects that were a cross between night vision goggles, a mourner's veil, and a veil of ignorance. Here is one brief proposal that died a merciful death early on:

Rather than enhancing sight, these goggles occlude vision. This veil is not made of lace, but crocheted with a pastiche of bullets, toy soldiers, and symbols of deadly conflict over ethnicity, diamonds, chocolate and oil.

I imagine that some of the bullets might be powder coated to be the colors of red white blue (or colors of other conflicts, orange and green). Some of the items (e.g. chocolates or candy wrappers) might be encased in resin, they will all need to be drilled. I don't know whether the connecting fiber should be wire or some kind of other filament but it would need to be a very strong thread.

I imagine the veil going on and on and on forever until it reaches the floor and maybe flows out to the corners of the room.

Luckily for me, Sungyeoul had little interest in this idea. So, I had to continue brainstorming.

As it happened, that week I also signed an academic letter to Members of Congress about ratification of the Arms Trade Treaty (ATT) and was reminded that the world is now producing two bullets per person every year. With ideas of the ATT and resin art whirling around in my head at the same time, I landed on the idea (or, rather, the idea landed on me) of making human silhouettes with 2 bullets embedded in them: 2 Bullets per Person.

That idea had legs! In order to complete this project (and, yes, I am still sanding and polishing!), I had to learn and practice steps like these: design research; refinement of idea with CAD software; preparing the design for 3D laser printing; assembling models to make molds of silhouettes; preparing silicone mold material; making molds of acrylic models; safety procedure for working with toxic uncured resin; embedding objects during resin gel stage; demolding models; removing the tacky layer from cast resin figures; repairing cast resin; sanding, polishing, and refining.

In this picture, I am in a well-ventilated area, wearing a respirator, preparing to pour resin into molds.



Here are components of 2 Bullets per Person, released from molds and in various stages of finishing and polishing:



What Will I Do Next?

Throughout the project I kept arriving at new conclusions about art and pedagogy, although I'm still working hard to discern how this experience can most effectively inform my work as a teacher of International Relations! I learned that making art is intensely strenuous, challenging work. Blood, sweat, and tears went into the works I produced this summer. This is a far cry from a mental image I know that I have had sometimes, of "Art" as products of a Hegelian airy, gossamer, disembodied muse.

One observation was how frequently I returned to the refreshing hands on nature of what I was doing. I was learning by transforming objects. I was learning to manipulate the world. I had evidence that I made things and I made things that work!

So, this brings home to me, again and again, the importance of experiential learning - the centrality of which is key to Quaker pedagogy - that what we know and do experientially is the learning that matters most.

And I had little epiphanies about pedagogy: realizing how tentative I felt walking into the hot room to solder, meaning that I could successfully complete a project one time and that did not mean that I actually knew how to do it all by myself and would be able to perform again without guidance. I learned that it is possible for teachers to do too much for students - that learning and empowerment require being free to make mistakes. I enjoyed reflecting on a definition of expertise (and now I can't remember where I read it), that (to paraphrase) "developing expertise is developing a repertoire of recovering from mistakes." I observed, again and again, how much the Fine Arts resemble the Sciences in terms of theory, hypothesis testing, experimentation, observation, trial and error. The language used is entirely different, but the method remarkably similar.

Institutional Consequences

At this point, one concrete institutional and collaborative consequence is that Sungyeoul and I have begun to talk about hosting a GLCA Swords into Plowshares Art Show. The goal would be to encourage artists at our institutions to produce works made with weapons or remnants of weapons and, ideally, to collaborate with social scientists in conceptualizing the works.

In the future, I look forward to collaborating with colleagues at Earlham in thinking about how I might be able to teach something like an Arts Across the Curriculum course that will both help our students to engage experientially with the kind of abstract issues and terrible social problems that make up my conceptual universe and also provide an opportunity for me to continue to explore and bridge my world as a scholar of International Relations and my newly claimed identity as a visual artist. With construction underway for Earlham's new Visual and Performing Arts building, this is an exciting time of growth to be doing this work.

My only regret is that I didn't apply earlier and that the grant has run out so that it is no longer possible to apply for a second grant, which I would have done in a heartbeat. Thank you so much for this amazing opportunity.

ADDENDUM:

Here is a picture of the mounted Two Bullets per Person piece, which won an Award for Originality at the 115th Richmond Art Museum exhibition:

