Developing Sun and Shadows
by Artistic Producer, Christianne Myers

The Beginning of the Idea
Back in 2007 when the Walgreen Drama Center and Arthur Miller Theatre opened, I learned that the exterior walls of the theatre were originally designed to light up. So, for the grand opening of the theatre in April 2007, I organized a group of lighting students (including Justin Lang ’09), who coordinated with their teacher, Rob Murphy, and the house technician, Mark Gordon, to produce a light show. With funding from the development office, they rented some lighting equipment and threw some splashy color on the glass so as patrons left the theatre, they were treated to a light show with color chasing all over the sides of the building (photo, below). It was a great way to introduce North Campus to the Dept. of Theatre & Drama. It was flashy, and awesome, and for years afterward, people would say, “That was so cool, why can’t we do that again?”

Fast-forward to spring 2012. Our departmental Chair, Priscilla Lindsay, was looking ahead to 2015 and beginning to plan the Department’s 100th anniversary celebration. I told her about the light show from 2007, but wondered if we could do something more? Could we figure out a way to tell a story? A shadow show of some kind? We knew we wanted something that had visual impact, but we weren’t sure what it was going to be. By pure coincidence that summer I participated in USITT’s summer costume symposium, Puppet Bootcamp. After a crash course in shadow puppets that weekend, I started to wonder if this was the form for our ambiguous and ambitious event.

First, a bit about the actual building. The southern and western exterior walls of the Arthur Miller theatre are constructed with large panels of translucent glass. Between the glass walls and the interior walls of the theatre is a six foot catwalk space (photo, above right). It is a space begging to be used somehow! We started referring to it as The Cube. We proposed that the audience would gather outside, on the circle drive (photo, left)
I began by writing a proposal and call for collaborators. I can be many things, but I am not a writer, nor a director, and I didn't want to assume anyone's involuntary participation. New faculty member, Dr. Anita Gonzalez, stepped forward as a collaborator and director, but it wasn't until the spring of 2014 that Gillian Eaton suggested *The Disobedience of the Daughter of the Sun* as a possible story. It is an ancient Mesoamerican myth first put the page by Martin Prechtel, and Gillian volunteered to adapt it into a script. Later that fall, I secured the permission and blessings from Flowering Mountain, Mr. Prechtel's foundation, to move forward with the project.

Earlier in the fall of 2013, we completed our first test with puppets in the Cube (photos, right), at sunset. Prof. Murphy brought in different instruments, and we tested the cause-and-effect of different lights with a handful of small shadow puppets and a student volunteer. We needed to learn which instruments offered the best diffusion and coverage of light.

**Producing**

As producer, I continued the necessary steps in mounting a project like this--there was so much paperwork. Because the performance space behind the glass was officially a maintenance area, we needed to secure permission for student performers and technicians to be there. Because the audience was gathering outside of the building, we needed an outdoor event permit as well as a permit for amplified sound. I needed to determine the equipment we had on hand and could use without straining resources for other campus projects, which led to the development of the budget. The team was filling in, but I needed to find other collaborators- a combination of students, faculty, and staff who would work together on a project with very blurry lines when it came to job definition. And, of course, there was the fundraising. The writing of the narratives for each of the grant applications was an opportunity to articulate why it was important to me to produce something like this, clearly out of my comfort zone.

I wanted to cultivate an opportunity for students to develop site-specific work, learn to collaborate with others outside of their own genres, strengthen teamwork, and create something where the final result would not be clear from the onset. This was also an opportunity for an interdisciplinary project- students came from Performing Arts Management, Performing Arts Technology, InterArts, Design and Production, and Performance. We wanted to celebrate the building as a creative space & continue to make North Campus a destination for the Arts. One of the long-term goals was to create a production infrastructure allowing theatre to cross-pollinate with international literature, and other performance areas in this highly visible, yet unusual space. Funding allowed us to purchase dedicated lighting and sound equipment that was otherwise unavailable for sustained site-specific use. As I wrap up this project, I am currently creating a template that allows for greater ease in collaboration between different courses wishing to produce performance in this curricular context, and am developing a suggested production protocol for this space.

Performance modes in the 21st century are evolving. More and more, both audience and artists are looking for hybridized performance methods that blur the lines of a traditional play, story-telling, opera, street theatre, concert, etc. As a costume designer, my favorite projects have always been those where the “4th wall” is broken, or questioned. The performance piece I proposed defied the 4th wall, and engaged with the audience; as spectators, they inherently became participants. Puppetry in performance is an ancient practice, but one need not go back in time to observe examples—*Warhorse, The Lion King, and Avenue Q* are just a few that use puppets as the means for advancing a narrative. In addition to these more traditional theatrical pieces, puppetry has been a part of public art for centuries. The Bread & Puppet Theatre, Macnas, Royal de Luxe, and The Heart of the Beast, are examples of contemporary processional pageantry that engage their communities, tell stories, and sometimes question authority. Puppets have the extreme luxury of saying and doing things humans cannot or will not do or say. Therefore, they make excellent storytellers and ambassadors. Additionally, site-specific work is enjoying a renaissance in contemporary commercial theatre (*Sleep No More, and Macbeth in the Park Ave. Armory to name two*). It was important for our students to have the opportunity to practice work that was both limited and inspired by the use of an unusual space.
Smaller grants lead to larger grants, and when it was all done, and the final approval was in place, I raised over $30,000 from six different sources:

- University of Michigan Office of Research- $15,000
- School of Music Theatre & Dance- $5,600
- Center for Research on Learning and Teaching, the Gilbert Whitaker Fund $6,000
- Dept. of Theatre & Drama- $3,000
- The International Institute-$2,000
- Arts@Michigan-$1,000

As classes began in the fall, other positions began filling in. Isaac Levine, a junior Performing Arts Technology student, was engaged as the composer and sound designer. He quickly began creating sound sketches in response to the story that set the overall tone and inspired us all. Next, a stage manager, assistant stage manager, production assistant, and an individual to handle the marketing and public relations were secured. It continued to be a priority for me that as many students take on as much responsibility as possible. Students were mentored by specific faculty members, but developed many of their own techniques to adapt to this unusual production.

Pre-Production and Early Designs

When I wasn’t wearing my producer hat, I was busy co-designing the visuals with Sarah Tanner, a staff member in the University Productions prop shop. There was a bit of chicken and egg- we needed to know what puppets and scenic elements were necessary to tell the story, and Gillian and Anita needed to know what we were capable of creating.

Our first job was creating a task list which remained a live document until our final tech rehearsal. Anita highlighted action beats in the story and Sarah & I started a list of characters, props and scenic elements. We dreamed big. Originally we had the ideas that the Short Boy would be played by a human and that the Sun (sketch, right) and Moon would be giant twelve to fourteen foot tall puppets that would walk around outside of the building and interact with the shadows from the within the walls. Both of those ideas were eventually cut. The large walk-around puppets were spectacle only, and muddied the vocabulary of our storytelling. As you can see from the sketch, they were firmly rooted by the ancient Mayan research. Anita, Sarah and I all agreed we did not want to be tethered to ancient research. We wanted to be inspired by it, but not appropriate it. We needed to understand the original time and place of this story, but our ultimate goal was the make this ancient tale modern and universal.

We set a deadline in October 2014 to test scale and materials. I discovered an artist named Wangechi Mutu, and loved how she collaged different media. We were inspired by her textures and palette. Sarah and I explored printing on acetate as a way to integrate as much color and texture into the design as possible. We experimented with tyvec, cardboard, bamboo, and eventually settled on coroplast (corrugated plastic) as our base material to use with the acetate. As our task list grew, we discovered we couldn’t just rely on the puppets’ relationship to the light to control scale, and that several puppets would need to be made in different sizes. I concentrated on designing the character puppets, all except for the Tall Girl. Conceptually, we wanted her to look like she was from another world altogether, so Sarah designed her basic form in addition to the scenic elements.

For our test, I designed the Hummingbird as a prototype puppet. My approach to researching images for this project was both systematic and organic. I tried to always go to the primary source, but I also wanted to honor and be aware of how this shape was interpreted by the Maya. For the mechanical design, I wanted a puppet that could collapse flat,
like a traditional shadow puppet, but could also fly dynamically as a three dimensional bird. Knowing it was the smallest character puppet in the show, we'd decided to mock it up as a three foot puppet beak to tail. Sarah built the prototype based on my design and we tried it out in the space with alumnus and lighting designer Justin Lang, who was on the student team that lit the Cube in 2007, on-site. It worked! It was at that time we all decided that the center four panels of glass (40' across) would be the primary playing space and that we would need some sort of ground row to mask lighting instruments and people.

Photos above: 1) Hummingbird in flight, 2) Mayan glyph of a Hummingbird, 3) my original sketch, 4) complete design, 5) photo from test, 6) production photo

Sarah finalized the scenic designs (sketches, below), I had puppet sketches, and we presented what we had to the whole team for the first time in December.

Anita and I worked closely to integrate the project into our Winter courses. In the first half of winter term, my puppetry class would build the puppets, props, and scenery both during class time and weekend workshops led by Sarah and myself. Then after the break, we would pass the puppets to Anita's Devising Theatre class, who would animate them and tell the story. As the winter semester began, supplies were ordered and preliminary designs were in place, I had one of those huge moments of, NOW WHAT? All these students were about to show up to create this thing. There was so much momentum, curiosity and excitement.
Puppet Construction

Two weeks into the winter semester and we were in full production mode. The assignment sheet and course syllabus are included in the teaching portfolio of this dossier. Students were asked to contribute to a project blog. Members of the Puppetry class were each assigned one character puppet to shepherd through the whole process- a quarter scale model out of cardstock, then scale up the pieces with any corrections, and then construct the full sized puppet out of coroplast and acetate with any necessary reinforcements and control rods. Students registered for the one-credit Directed Study assisted with the character pieces and were assigned various group projects to build the prop and scenic pieces. Anita and I had both of our classes meet together, once in January when the script was read aloud for the first time, and then again in February when we went into the light lab and showed the puppets to the whole group. I assigned each student’s project so they were individually challenged but (hopefully) not completely overwhelmed.

Basic construction steps used for most puppet and prop pieces:

- Once the ¼” scale model was approved, the pattern pieces were enlarged to full scale using a projector and traced directly onto the coroplast
- Color and texture printed on 36” wide acetate using large format color printer
- Coroplast cut, including interior shapes that would be filled with acetate
- Attached acetate to coroplast armature
- Raw edges of smaller pieces bound with duct tape
- For larger puppets, edges reinforced with sharkbite plastic tubing, sealed with duct tape
- Puppet joints rigged with small machine bolts, washers and nylon locking nuts.
- Balance tested and pick up points for control rods determined. Lightweight rods for subtle joint control attached using clip on key fobs; heavier rods wired to loose-pin hinges bolted to the puppets.
One advanced student, Zoe Andersen, a junior in the Stamps School of Art and Design, was invited to research and design the Bird that the Tall Girl turns into. She was up to the challenge of starting with a blank piece of paper and seeing the puppet through to completion. That image also served as our poster graphic. From the table reading of the script, she was also intrigued by the description of the Lightning Brothers. She designed that puppet as well, though, as planned, it was constructed by a different group of students during the workshops.

From top to bottom, left to right: 1) Horned Guan photo research, 2) Mayan glyph, 3) Sketch by Zoe Andersen, 4) Rendering by Zoe Andersen, 5) ¼ scale model, 6) Test in the Light Lab, 7) Wing mechanism, 8) Bird in flight in the Cube, 9 & 10) In performance.
Another challenge was the evolution of the Moon. I provided a preliminary design to student Kelsey Murphy, but charged her with figuring out a way to rotate the puppet from a central swivel point and provide an optical illusion of having features that worked both in profile and as a full moon. She worked small to problem solve the mechanics, and in tracing paper to see how the symmetry aligned. Once the puppet was in full scale, the halves were stacked, reinforced, and the pivot point engineered. Mechanically, it worked beautifully. Logistically, it was very heavy. After consulting with Anita, we realized it could be much simpler- the Moon could remain in two pieces and the magic would be provided by the puppeteers.
The Short Boy was straightforward in design and fabrication. Anita's only suggestion was that I look closely at the physiological features on the faces in my indigenous research before proceeding. Once the profile was corrected, the design was passed to a second year performance major, Justin Choi, who had never seen an X-acto knife before. He was a bit daunted as we began, but slowly gained his confidence and created a beautiful, expressive puppet central to the story telling. Later in the process, with the Boy completed, I challenged him to figure out a way to hinge a magnet on the end of a small control rod in order to "magically" move small puppet props from one place to another seemingly hands free, like a magnetic fishing rod. (He did it. It was simple and elegant...and cut from the show.)

Photos top to bottom, left to right: 1) Myan profile research, 2) Sketch by Christianne Myers, 3) Rendering by Christianne Myers, 4) Puppet pattern pieces, 5) 1/4 scale model, 6) Justin Choi, puppet builder, meeting his puppet, 7) In performance.
The Tall Girl was also simple in construction, but required different iterations throughout the story. First, she is born as a complete girl out of the Moon. That full body puppet, designed by Sarah, was completed by a first year stage management student, Jenny Barretto, who claimed to have no artistic ability; I trusted her to find some, and she did. In our story, the Girl is so tall, she doesn't fit the frame. She is then represented by a large set of skirted legs, two giant hands that weave at the loom, and a three-quarter profile face. Later when she and the world are destroyed, we needed smaller versions of the prop body part pieces for the Boy to collect and put in the pot.

Sketch of Girl by Sarah Tanner, above
1) \( \frac{1}{4} \) scale model of Girl,
2) Jenny Barretto, with her completed Girl puppet,
3) Christianne with giant legs

One of the simplest puppets in the whole show was the Girl's large head (photos, left). It had a control rod on a telescoping window washer pole, and a smaller pick-up point on her chin so she could peer down, ribbon hair to match the other heads, and no big moving parts except a mouth that could open and close. Yet, it was the most expressive, I think.

The hands (research, left) used for weaving and holding the Hummingbird were designed by the same student who constructed the Moon. I handed her a photo of hands in the correct posture and she articulated the pieces so they could give the impression of weaving. The motions, of course, were simplified once the puppeteers began using them, but the effect in performance was lovely. (photo of head & hands in the rehearsal studio, right)
Part of the assignment was for each student to research, design and construct a small animal shadow puppet that would be a part of the weaving on the loom. It was important to me that each student have at least one small thing that they completed start to finish in the show. They were constructed from heavy black cardstock and eventually backed with sheets of clear acetate so the delicate details weren’t broken. They were then suspended by lengths of fishing line from a long flexible pole (photo right) that could bounce, suspended over the loom.

During the first half of the term, students worked during class and scheduled workshops (in lieu of independent homework) to build most of the pieces on our task list. Sarah and I continued to meet with Anita refining the designs and simplifying things. During her workshops with the students, Sarah tackled the construction of the archway, loom, tree, and some of the props that were added later in the process. Together we finished and fine-tuned everything to get the major pieces to Anita's class when they returned from the mid-term break in early March. Once the puppets were passed to the Devising Theatre class, most pieces needed small adjustments and reinforcements; fortunately we had built “puppet triage” time into the schedule. Additionally, on most nights the performers were in the Cube, there was a representative from the construction team on hand for quick fixes.

What was amazing about this whole project was how fluidly we passed the ideas around. We were all ruthless about editing. Chunks of script, puppets, and pieces of scenery all were pared down to the core. As we circled in throughout the fall and winter, we discovered what was essential, and with guidance from Anita understood that not every moment had to be illustrated visually.

**Developing the Performance**

When the students returned after their break, Anita’s work began in earnest as the students learned about the puppets and how to tell the story. Puppeteering requires an enormous amount of focus and intention. It is not simply hitting a mark and moving a large prop. The maker and the performer must both become invested in an inanimate object in order for the audience to become invested as well. That first week, the performers rehearsed in a studio with roving lights and a cyc. They acclimated themselves to using the parade belts I bought, to help distribute the weight, and were able to make specific, helpful construction requests to help animate the puppets.

The second week of rehearsal was the first week in the Cube. We had four nights with a rudimentary lighting system, just the fresnels that lit the puppets against the glass. We learned the ideal height of the ground row, how to use the cones of light to make puppets appear and disappear quickly, and the importance of well choreographed backstage movements. Anita planned to stage specific large moment beats, skipping through the script, saving the subtler character work for the rehearsal studio. The first night felt like well organized chaos. There was a lot of experimentation as students would try out different movement ideas. Anita would give one round of direction from within the Cube, and then would watch from the outside. Then they would work it again and she would give direction over the god mic from outside. I had been worried about the puppeteers being cold, since the Cube vents directly to
the outside and is not part of the HVAC system, but things warmed up in the space with the lights on and only Anita and I, outside as the air temperature hovered at freezing, were cold. We had a great stage management team who developed a method of tracking the blocking three dimensionally (sample, left). I also provided them with a long carpet runner so they could have spike marks travel from the performance space back to the rehearsal space. The ASM kept the playing space, which was also the backstage space, very organized as puppets traveled back and forth. Even without amplified sound, we were stopping traffic as the building was lit up and these giant surreal images moved silently about the exterior of the building. The week continued with more research and development with scale and choreography. My puppetry class tackled a work list of notes and presented the Devising class with a giant Pot used in the finale of the piece. The Pot (photo, below) was designed and engineered to hold the prop body pieces by magnets, and then crack open with the rebirth of the Girl (alas, the cracking moment was cut). After a week of discovery, it was back to the studio.

For the next two weeks, the sound designer and composer, Isaac Levine, solidified a running soundtrack of the whole piece, infused with foley effects, a beautiful composition and the voice-over of the story as performed by Priscilla Lindsay and students from her voice-over class, as well as students from Devising. Once the specific timings were established, it became easier to tighten the choreography. The performers really started to embody their puppets and as is the case with any mask work, animate the inanimate.

We returned to the Cube for two more nights of pre-tech rehearsal, adding the two large scenic elements, the Loom and the Arch. More lighting equipment was added, including the strip lights that would provide washes of color throughout and a light show before and after the performances. The performance footprint became tighter. As we sat at our tech table in the middle of the grass of the circle drive, we all agreed that we should extend the playing space and had the materials, lights and power to do so. Sarah and I cut our last full sheets of coroplast down to shape and extended the ground row for the following night, Rob and Justin installed two more booms, and everyone in the Cube was grateful for the extra space so the puppets could move freely.

Photos left to right:
1) Archway blocked with boulders, 
2) Loom and weaving animals within Cube, 
3) Loom in performance
The weekend between Cube rehearsals was Anita’s last time in the studio space to rehearse an indoor rain plan. The big take-away from that rehearsal is that it would simply be a different show. The massiveness of the scale of performing on the side of a building captured the universal themes of the tale. By performing inside, it simply became a story of a forbidden romance. In order for the inside version to work, we would need to dedicate some of our Cube tech time the following week to relight the whole set and figure out a way to suggest the scenic elements. I needed to find another option.

**Producing, part two**

As we entered full production mode, my primary job was to make sure everyone had what they needed to do their jobs, and also to try to plan for every contingency. The program design was coming along, as was our social media presence. We had postcards to mail and hand out. Once the ground plan was solidified for outdoor equipment, it was determined that we did not, in fact, need cable covers (but I now know where to get them), nor port-a-potties, thankfully. I spoke with campus security so they understood the scope of the project, and the impact it might have on traffic.

My last big worry was the rain plan. At that point, the rain contingency had been to move the performance indoors to the rehearsal studio and seat the audience on the risers. I began checking the forecast and the 10 day outlook was decidedly not in our favor for tech or the weekend of the shows. Anita rehearsed a rain version the weekend before tech rehearsals with the roving rehearsal lights in the studio, but that idea seemed like a watered-down disappointment after all the work so far. The puppets and puppeteers were always going to be safe and dry. The only equipment outside was the sound cart and two small lights that projected a few extra shadow textures from the outside onto the glass. The sound cart was portable, and safely tucked under an overhang. The speakers had been repainted with porch paint so could handle being in a drizzle, and the extra lights were not critical to the narrative. I had purchased large golf umbrellas and had two party tents standing by, so I thought we were fine in case of light rain. After a good night’s sleep, I awoke with the brainstorm not to move the show at all, just move the audience. On the other side of the circle drive is Pierpont Commons, the North Campus student union. In the Commons is a large picture window, facing our playing space. It’s not huge, but large enough for several dozen people to gather to watch a twenty minute show. The answer was not in front of me, rather it was behind me. I popped into the space and happened to run into the manager who was quite happy to explore the possibility. There was a sound system in place, so we could play back the sound track and keep the audience dry; it would almost be like going to the movies. Of course after jumping through all the hoops, the forecast cleared for the rest of the week. There was a drizzle on one tech night, but it literally stopped raining the minute we propped the door to wheel out the sound cart, and it started again the moment after the stage manager called an early end to rehearsal because one of our performers was an RA and had to get back to the dorms. Phew.

For our late evening rehearsals in the Cube, I made sure there were hot drinks and hand warmers available. Though the plan had always been for the audience to stand or sit on the grass and they were encouraged to bring lawn chairs or blankets, I knew it would be wise to have a handful of chairs standing by. Even with the unusual circumstances, it was important that we follow a production template we were comfortable and familiar with- our tech table might have been outside on the grass, but we had one, with headsets. The stage manager needed a light to see her script, but it was a battery operated camping lantern that could double as a paperweight. Our rehearsals were, by default, quite public, and one of my jobs that week was to hand out show postcards, quietly answer questions, and keep passersby from disturbing everyone’s work.

Once we were back in the Cube for the third time, everybody had the rhythm of the show and space down. Justin continued to add depth and specificity to the lighting. He also designed a light show for the building using Isaac’s pre-show music. And then, as is the case with any show, we rehearsed. Because the show ran at about twenty-three minutes, it was possible to run it a couple of times each night. We were ready to open that Friday. (Puppeteers, right)
In order to really capture the party atmosphere and kick off the 100th anniversary celebration, Vencedores, the U-M Samba band (photo, left) was hired to play before and between shows on Friday night. The weather, in the end, couldn’t have been more perfect. It was a little chilly for the Saturday shows, but no one seemed to mind. It was as imagined and so much more. A very real sense of community was fostered, and an estimated 650 people saw one of the five performances.

Watch the [show teaser](#).

AND

Watch the [whole show](#).
Twenty-Twenty Hindsight

As with any undertaking, it is important to consider what one would do differently next time. The feedback from the students indicates that more of them would have liked to be involved in both the making and the performing of the puppets. Once the puppets were built, several of the fabricators said they were surprised that they felt a little sad that someone else was going to animate their puppet. Likewise, some of the performers would have liked time constructing, particularly to understand the mechanization.

We need to examine when we do a performance like this in the future and where it lands with the rest of the academic year. Mid-April was incredibly busy for staff and resources were stretched thin especially considering the rest of our Mainstage production season. One new idea is to split the process - have the Puppetry class build puppets during the winter term, but condense the rehearsal process and perform the show early the following fall term, which has the added benefit of allowing students to take part in both aspects.

I would also take a slightly different approach to some PR materials. We should have had postcards earlier to hand out to passersby the very first time we were rehearsing in the Cube. Also, we needed bus ads. The main streets that pass the building are also the bus routes for every U-M campus bus. One student reported that everyone stopped playing with their phones to watch as the bus drove by, but had no idea what was going on. We printed a program, but I was worried about littering, so we had the program on-line as well, accessed by a QR code printed on acetate and projected on the building. It was a great idea, but only worked about 75% of the time and needed some fine-tuning.

We had planned to use the Lighting 1 class as the electrics load-in crew, but I was not made aware until way too late that there were, in fact, too many students in the class. We had a cap of no more than ten people in the Cube at one time. I think with planning and creativity there would have been a workaround, but the load-in largely fell on the shoulders (literally) of that teacher, Rob Murphy, our TD, and the lighting designer, who was wondering where the crew was. We did have a full turn out for strike and wrapped the project in under four hours.

Lastly, with the students’ class and work schedules, our rehearsals in the Cube were shorter than planned, and we never ran the show three times in a row. The Friday night of the performances was the first time they did, and they were tired. I doubt the audience knew the difference, but I could tell their arms were tired and the pacing was off for the third performance.

This artistic journey was both thrilling and amazing. It was gratifying to become invested and immersed so thoroughly into the process, and have all that hard work reflected in a successful experience. On the night of the shows, I was able to actually sit back and simply watch. Each of the considerations listed above is certainly solvable.

I wonder what story we will tell next time.