“Oh, Chandelier?”

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Contents

1. Abstract

2. Goals and Audience

3. Context Research
   A. Modular system
   B. Modern Chandeliers
   C. Mass Customization

4. Design Solution
   A. Idea Process
   B. Material Research
   C. Technical Solutions

5. Future Development

6. Conclusion
1. Abstract

“Oh, Chandelier?” is an exploration of fluid modular lighting systems. The design is based on classical and modern chandeliers, and modular toys such as LEGO. Chandeliers are generally fascinating, glittering objects that give a pleasant aesthetic experience, whereas the modular toys provide a playful and dynamic building experience. This is a study that reinvents the chandelier — transforming it from something remote and secluded into an enriching design experience — by integrating it with a flexible modular platform. The modular system will provide flexible and creative choices on designs so that people can use their imagination to explore different structures and combinations. The material used for the individual modules is designed for translucent organic forms. What makes these fluid light forms special is the quality of memory and thought that emerges through the process of creation which is unique for each individual. The process of building these fluid light forms will create a sense of intimacy, as the relationship between light and builder evolves with a new layer of context.

Personally, I always loved to make things with my hands for the physical tactility of the objects. A large part of the joyful memories of making things emerges from the building process itself rather than the final outcome, as the entire process creates an intimate engagement between me as the builder and the object. As I was exploring interactivity during the program, I was assured that my personal interest lies in the interaction within physical presence. Therefore, through this project, I chose to express my appreciation for physical interaction. In “Oh, Chandelier?” the interaction occurs when users play with the actual physical modules. By putting the components together in their unique ways, people can explore flexible design possibilities with the modules and at the same time, experience simple and genuine contact with the object. The experience is neither intimidating nor overwhelming, but straightforward and playful.

From creating their own objects, people create their own context and relationship with the objects. It is not just about the satisfaction of having a unique design, but about the experience of building itself. The time they spend to build one and the emotion and stories that emerge from the experience provides personal attachment to the object. The attachment kids engage with ready-made toys versus Lego differs in
that sense — their own creation might not look as finished or elegant as factory goods, but the contextual experience is what makes the object so special.

2. Goals

To explore a modular system for flexible and creative design

Audience

- People who are interested in building experience but constrained and discouraged by situational factors such as time, space, and money
- People who appreciate contextual experiences with objects

3. Context Research

A. Modular System

Modular systems offer a friendly approach to people who are interested in building processes. Modules contain efficient flexibility that has been proven by modern manufacturing systems. With this modularized system, for example, when problems occur, it is easier to define the defective part and replace it when others remain the same. Also, a standardized scale of the modules makes the coordination of the flow faster and more efficient. With Lego, the connectors on the blocks are interchangeable, which allows the building process to be simple and playful to anyone—even children.

On the other hand, when modular systems offer higher efficiency and simpler handling, the downside of the system contradicts the benefits that lay in the design of the module: the general shape of the module constrains the overall look of the assembled objects. For instance, since Lego modules have square edges, the finished object built with Lego modules always contains the geometric architectural texture. Similarly, for the object that is built with stick-shaped modules is restricted to a
linear form.

Despite of the limitation on the design of the modular system, it still has enough advantages when it comes to a dynamic building experience. People remember the fun they had with Lego or assembly toys when they were young. Its modular system is simple yet challenging enough to bring one’s the creativity and to provide a sense of great accomplishment.

I would like to integrate the dynamic experience of modular systems into chandelier design to explore the reinventions of the original form. The exploration focuses on the structure of chandeliers with a glimpse on lighting and aesthetic aspects of them to emphasize the fun in building. This focus brings the project closer to a sculptural object than a practical lighting figure. This is an experiment and exploration of my passion for building and creation.

There are two different approaches to a modular system that has been applied to toys: one is a single module for a focused function. Tetra Kite and Magz are examples of a single module system. They offer only one module shape, and people play with the number of modules to put together. On the other hand, there are toys that have several different shapes of modules to connect. Lego is a good example for a diverse modular platform. They offer a kit of several kinds of modules, and there are more extensive options to add depending on people’s needs and preferences.

Chart 3. A.

<table>
<thead>
<tr>
<th>&lt;Modular toy examples&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Lego</td>
</tr>
<tr>
<td>- Tetra Kite</td>
</tr>
<tr>
<td>- Tinker toy</td>
</tr>
<tr>
<td>- Transformers</td>
</tr>
<tr>
<td>- Magz</td>
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<tr>
<td>- Zoob</td>
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</tbody>
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With a single-module system, the constraints force one’s creativity to take over. If the options on modules are too many, it limits the imagination in people that could have been encouraged more with the simpler system. In a commercial sense,

http://www.hasbro.com/playskool/tinkertoy/
offering more add-ons and upgrades can be a strategy to sell, but for my study, I am more interested in challenging the inner possibilities within constraints. For that reason, I am going to simplify options for modules and explore the possibilities within the given choices.

B. Modern Designer Chandeliers

The reason I chose chandeliers as my inspiration is because I have always admired them for their luminescent glow and elegant form. Moreover, while many consider chandeliers as fascinating objects, they are loaded with associations to classism. The social commentary evoked by chandeliers intrigued me, and has been of interest to many other modern artists and designers as well. There have been numerous attempts to alter and reinterpret the exclusive status of chandeliers by integrating different forms and materials into design.

1) New Interpretation on Forms

- Tord Boontje

Tord Boontje integrates high-technology into the new design of chandeliers. He is well-recognized by the public for his beautiful and delicate designs. His design solution is free-formed and untraditional. Blossom Chandelier hardly contains the

3 Tord Boontje [http://www.tordboontje.com](http://www.tordboontje.com)
traditional form of chandeliers but suggests the original inspiration from chandeliers with the use of crystals. By placing LEDs next to each crystal, he successfully hides the technology and maximizes the glittering effect. The blinking motion of the lights doesn’t seem to harmonize with the elegant look of crystal blossoms since it appears uncomfortably mechanical and dry.

- **Moritz Waldemeyer**

Waldemeyer’s chandelier piece embraces high-technology while retaining the aesthetic of chandeliers. The spiral design of the piece shows the inspiration from traditional chandeliers, but it rotates displaying text on the surface with LEDs. Considering the many failed attempts using LED text displays or similar technology, Waldemeyer’s work effectively conveyed beautiful design and movement with technology. The subtle rotating motion beautifully emphasizes the spiral form of crystals. As viewers can change the text on the chandelier by sending text messages with cell phones, the piece contains the flexibility in its presentation suggesting a personal experience with the object.

- **Ingo Maurer**

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4 Moritz Waldemeyer [http://www.waldemeyer.com](http://www.waldemeyer.com)
5 Ingo Maurer [http://www.ingo-maurer.com](http://www.ingo-maurer.com)
Ingo Maurer’s exploration of chandeliers focuses on form. He breaks the conventional context of chandeliers and creates new designs in a more abstract and modern sense. He does not limit the choice of materials to crystals or glass, but opens it up to papers and feathers to express the new forms he suggests. His work is inspiring as he removes the conservative definition from the object.

- Tobias Wong⁶

Tobias’s chandelier piece at Cooper-Hewitt for the Design for Life exhibition brings out a sarcastic nuance to the traditional chandelier position. He claims that he

⁶ Tobias Wong http://www.brokenoff.com
wanted to create an intimate space with the object that is usually very public. He hides a classical chandelier inside of a large black shade, so that the audience can see the light only when by sitting at a mirrored table that reflects the bottom of the chandelier. It is a very witty approach to twist the interaction with chandeliers into a more private context.

- **Gaetano Pesce**

![Image 3. B.- 6](http://www.mocoloco.com/archives/003503.php)

Pesce’s Mediteranneo piece was designed to look like and imitate the jellyfish. It is one of the most high-tech chandelier pieces, which creates a total new experience with the light. The motion and the change of lights it creates are very powerful and organic which justifies the use of technology.

- **David Wiseman**

![Image 3. B.- 7](http://www.gaetanopesce.com/)

![Image 3. B.- 7](http://www.dwiseman.com/)

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Wiseman’s Charm Chandelier holds a strong suggestion of creative and playful interpretation of chandelier design. It breaks off the traditional form as one coherent symmetric piece and arranges individual components into multiple spread-outs that harmonize coherently together. Despite the fact that it does not use crystals or any traditional shapes from conventional chandeliers, it still conveys elegant femininity with the fluid form and the theme of organic nature.

2) New Material

While there are designers and artists who explore new forms of chandeliers, there are also many works that investigate different materials for chandelier design. The choice of new materials, in many cases, is eco-friendly: designers employ used objects such as pens, pencils, and disposable containers for detergent or drinks and effectively arrange them to create a beautiful glow. The structures for these works usually remain in a traditional form while the focus of new interpretation is made with the materials used.

Image 3. B.- 8 Big ballpoint pen Chandelier by En Pieza

Image 3. B.- 9 Tide Chandelier by Stuart Haygarth
Image 3. B.- 10 Disposable Chandelier by Stuart Haygarth

Image 3. B.- 11 Styrofoam Chandelier by Shannon

Image 3. B.- 12 Plywood Chandelier by Courtney Scott
C. Mass Customization

While I was interested in personal experiences with objects, the question naturally arose concerning mass production in modern society. Since the industrial revolution, mass production has prevailed in modern life, dropping the unit price, but at the same time, raising criticism of identical design aspects that disrespect the unique personality in individuals. To complement the criticism on mass production systems, a mass customization trend appeared. Mass customization has three categories: modular customization, adjustable customization, dimensional customization\(^\text{10}\). Mass customization enabled the production system to maintain relatively low cost for more variable choices of output. IKEA is one good example that successfully engages mass customization in their production system. IKEA offers several options for materials and designs of products so that customers can choose depending on their personal preferences. For ease of use, on IKEA’s website, they categorize specific styles to choose from, so that visitors can define their own style and choose among the options. Limitations certainly exist, but with mass products, it comes with sacrifice in an exchange with efficient cost and speed.

Admitting the limitation of personalization of mass products, there has been an attempt to resolve the frustration by offering well-designed mass products for general buyers. When mass production started — with the focus on lower cost and more efficiency — people started realizing the importance and needs of good design. It does not necessarily deliver personal involvement with the goods that I am aiming at with my study, but here I looked at two examples of well-designed mass produced brands to understand the consequences of the approach.

- **MUJI\(^\text{11}\)**
  MUJI is a good example that advocates high quality design for mass products. They provide simple and sophisticated design with accessible prices. They also pitch ecological value by using recycled paper and environment-friendly material for their products to add more social ground which easily is ignored with mass products.

- **Urban Outfitters\(^\text{12}\)**

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\(^\text{10}\) Mass Customization, the Proactive Management of Variety by Dr. David M. Anderson, P.E., CMC http://www.build-to-order-consulting.com/mc.htm

\(^\text{11}\) MUJI http://www.muji.net/eng/
Urban Outfitters is another example for affordable yet fashionable design. They save cost on material and provide trendy designs. Their compromise between the quality of material and the quality of design meets with the need of people who appreciate trendy looks with affordable price. Urban Outfitters also have a version of chandeliers in their stores: it was a replica of the traditional crystal chandelier design made with plastic. It shows the design philosophy of the brand well. While it sacrifices the qualitative side of chandeliers, it satisfies the needs of large number of people.

D. D.I.Y Movement

Do it yourself, often referred to by the acronym "DIY," is a term used by various communities that focus on people creating things for themselves without the aid of paid professionals. It reflects the frustration and criticism that arises in the modern consumer culture setting the populace as passive buyer, not as an active owner of the object. This complements with my study in modular systems — the building process that the DIY movement offers is one of the important aspects in my project. Through the DIY experience, people expect to gain personal involvement with the objects they consume, occurring with the entire process of planning, getting materials, and building the object. They value the contextual stories added to the object, which differentiate the creation from any other products in the market.

There are many open source instructions available for DIY activities. Makezine, Craftzine and Instructables are magazines and web blogs for open source instructions. One of the merits for these sources is the easy access and deliberate sharing among people. Stores such as Home Depot also have been doing a successful business with the high demand of people who would get their own hands dirty.

Many of the instructions for DIY are complicated and time consuming, which discourages people from getting into the action. Compared to the DIY system,
modular platforms provide simpler and friendlier approaches to the playful experience of creating own design. Modular systems, on the other hand, have less flexibility on the choices of styles.

4. Design Solution

A. Idea Process

First Iteration

As I became interested in modular systems as a means to explore flexible design, I designed a module arm that contained the aesthetic aspects of classical chandeliers. I wanted to constrain the choices of modules to one to see the possibilities and the limitation. (Module1 – image1)

Image 4. A – 1 Sketches for the first design of modules
Clear plastic was considered as a material for the main structure. Simple crystal beads were added for aesthetics and to add a glittering effect as chandelier inspired lighting. Each module contains one mini light bulb, powered through connectors to attach modules together. Each module has 5 connectors – top, bottom, front, and two in the back - to give the options for combination. (Image 4. A – 3)

Visually, I explored the potential of the flexibility of the module (Image 4. A – 4 ~ 8) I could suggest several possibilities, but the suggested look was limited to the classical feel of chandeliers as the module itself had such a distinctive style. Also, the design of the arm was too rigid to explore different designs.

![Image 4. A - 2 Module1 design](image1)

![Image 4. A - 3 Module1 connectors](image2)
Image 4. A - 4 Module1 combination1

Image 4. A - 5 Module1 combination2

Image 4. A - 6 Module1 combination3
Second Iteration

After experiencing the limitations of a single module system, I searched for a more flexible modular solution. I came across several lighting pieces that suggested a playful way for customized design.
The first one is by Tord Boontje, a flower patterned sheet that wraps around the lighting to create their own iteration of design. The second is of a similar idea: the product is translucent sheer fabric ropes covers the light to create a soft illuminating effect. The last one is Bendant by Jaime Salm. It is cut aluminum plates that can be fold into different directions to create unique designs.

The solutions for these works are so simple yet brilliantly playful. Since playful experience has always been of personal interest, I wanted to adapt this playful aspect in my modular system.

1) Sketches

For the second design of a module, I researched the materials that provide more fluid and organic forms that are applicable for more flexible shapes. In order to create an organic shape, the material needed to be flexible yet rigid enough to retain its form with the pulling weight from other attachments. Among the materials I researched, the gooseneck appeared as the most ideal choice for the purpose.
2) Materials and Design

- Gooseneck pipes
I found several lengths and thicknesses for goosenecks with 1/8” female connectors at the end. I chose the thinnest for its light weight and more elegant and delicate curves. Also for length choices, I picked three lengths to add a little more flexibility in design choices.

- Connectors
I used both female and male connectors for 1/8” size that fits on the goosenecks I chose. The allocation and number of connectors for each module varies depending on the length of gooseneck. The space between the connectors remains roughly consistent for every module.

- 3mm white LEDs
For the light source, 3mm small white superbright LEDs were used. Each connector has two LEDs on the sides, so depending on the number of connectors, each module has different number of LEDs. Two LEDs for one connector runs in series while an array of the couples run in parallel.

- Female headers
In order to be able to replace the LEDs, I placed female sockets where LEDs can sit in.
- Magnet wire
On the module, power runs on magnet wire that is woven in clear beads and wrapped around the gooseneck. Power and ground runs on separate wires, so each gooseneck gets two beaded wires wrapped around.

- Snaps
In order to run power from one module to the next one, each power wire has snaps at both ends and on the parts for connectors. When two arms are attached together, snaps will make connections for power.

- Beads
Tiny clear beads were used to hide wires and apply chandelier like glittering to the modules.

In addition to the main arm modules, in order to maximize the lighting glow, I added another layer of design options with patterned strips. When the strips wrap around the LEDs, the light is diffused. The strips also add on aesthetical touch to the basic structure. The three patterns were inspired by Tord Boontje’s Blossom
Chandelier and branch-like linear figure of the main arm module. The patterns were laser-cut onto two types of materials: sheer organza fabric and translucent drafting paper.

Image 4. A – 14 Patterned strips

Image 4. A – 15 Laser-cut patterns (above), Diffused light effect (below)
Accessories

As mentioned earlier, the additional accessory components were kept simple to bring focus to the main structure. Just to give a little additional touch as a chandelier inspired piece, I added two crystal components. One is added to the female connectors embedded with surface mount LEDs so it can be attached at the tip of the arms for finished looks and additional lights. Another crystal piece is simply dangling, and can be hooked either on the beaded wires or on the back side of the connectors. Aside from the two crystal accessories, the only additional components are connectors joining the arms together or to hang them from the ceiling.

Image 4. A – 16 Accessories: crystal light (left), dangling (center), connectors (right)

3) Prototyping process

For the connector parts, female connectors that fit with the female ends of goosenecks are placed alongside the modules. The connectors are put in place with hose clamps and clay glue named Propoxy to hold them strong.

Image 4. A – 17 Gooseneck fabrication process – attaching connectors
Once the arms get built with connectors, the white spray paint and rubber dip were added on the arms in order to cover the parts and add clean look on the modules.

After letting the arms dry, female sockets for LEDs are glued on the sides of connectors and snaps woven with power wires are placed at the ends of arms and connectors.

The final number of finished arm modules are 15 — 7 for medium length, 4 for short length, and 4 for long one.

4) Explore

As an exploration on flexibility of modular systems, there are three steps to take: First, the modules need to prove the flexibility and possibility on a classical form of chandeliers. The design of a module was initially inspired by the original shape of chandeliers; therefore, it is important to see how adaptable the design of the module is
for the initial inspirational form. After the testing stage, the next step is to explore the further extensive potential of the modules. This second exploration is about trying unconventional forms of lighting that were designed after traditional chandeliers. The modern chandelier works that adopted radical and creative shapes to reinterpret the old forms of chandeliers are good examples to investigate. As a further step, the exploration extends to creative application of the modules. The form does not limit to ceiling light but examine other possibilities such as desk lamps, stands, or any other sculptural forms.

First step: Traditional form of Chandeliers

This is the first design for a classical shape of chandeliers. Only three modules were used — one of each length – and the three were placed using symmetric angles. The long arm worked as a central holder, and the other two arms were attached to the long arm.

Image 4. A – 20
Classic 1 – clock-wise from top left: structure, structure with fabric strips, close-up on a joint, bottom view
Since the structure was minimal and clean, the look felt quite modern and edgy. I played with the patterned fabric strips and crystals to add decoration on the basic structure. The decorative version is shown on the right column. For the decorative version, the diffusive light through the fabric evokes a feminine and elegant mood.

The second design for classical chandeliers went for a more complex architecture with ten arms – one long, six medium, and three short modules. The long arm forms a circle loop to hold the other arms from the top. Three medium length modules are attached to the top holder, and each three module are joined with two other arms.

The finished structure successfully brings out the look of classical chandeliers although it still contains the minimal simple design. To emphasize the fluid structure of the design, accessories are limited to hanging crystals. The bottom view is interesting in terms of the proportion the connected arms created.
The third iteration of the classical chandelier follows a similar structure of the second one with a different distribution of arms and angles. It was designed to be relatively compact with more curves than the previous one. The weight is carried up to the top level rather than the bottom, and the top-shifted distribution makes an impact on the impression of the object as a more solid and coherent object compared to the sparse design of the previous one.

Second step: Modern Chandeliers

For the second adventure of exploration, I chose three modern chandelier pieces designed by other designers and artists to reinterpret the traditional designs of chandeliers. The forms of the three pieces are very unique and unconventional, and I was interested to investigate the possibilities of the given platform of my modules for the free-formed designs.

The three example works are Tord Boontje’s Blossom Chandelier, Moritz Waldemeyer’s spiral chandeliers, and David Wiseman’s Charm Chandelier. Within the constraints of detailed decoration of each piece, the recreation of the pieces was focused on the structure to examine the potential of the creative combination of the modules.
The reinvention of Tord Boontje’s chandelier turned out to be very powerful and effective in terms of carrying out the organic femininity of the original piece. Six modules of all three sizes were used and the graceful flow was easily created with the flexible nature of the modules. The leaf patterned strips covered the arms to create the feel of the branches distributing the glow more effectively along the arms.
The second recreation was made on the spiral structure of Moritz Waldemeyer’s work. With the task, the challenge was to create the vertical flow with the linear design of the modules. To give better weight and volume, two long arms, which were the combination of two long arms, were twisted together and curved into a spiral shape. Then the patterned strips were used to give the dropping flow on the structure. With the fluid characteristic of the modules, the recreation expressed softer and lighter image compared to the heavy and geometric look of the original work.
The third example piece was David Wiseman’s charm chandelier. It was the most unconventional type of chandelier among the three, and the dispersed allocation of the components provided the impressive uniqueness of the piece. Therefore, I created the top structure with a long arm that allowed the extended lay-out of the hanging parts. Instead of mimicking the same lay out of the original, I implemented the major center piece and the additional supportive motif. The large glass center-piece was recreated with a lump of sheer fabric strips, and the branch structure was imitated with a twist of two modules. While the original one contains the mixture of colors and materials, the new version of mine refines the structure with the single white color scheme and solitary material of the module.

Third step: Free-formed Exploration

After the experiments on the basic structures of chandeliers with the modules, the further exploration proceeded into more open-ended and creative realm. The possibility expands to other design applications from different kinds of lightings such as desk lamps and standing lights to sculptural objects of any organic shapes. The fluid
design of the modules suggests biomorphic design, and also the nature of modular system is indeed ideal for repetitive patterned forms.

I explored a couple of designs for the further expansion. The first was the dome shape that was inspired by a bird cage and a lantern light. Two ring shaped modules composed the top and the bottom structure and four medium length arms connected the rings vertically. Additionally, two arms were shaped into a sphere and plugged into the hole of the bottom and a long arm filled the space in the middle to add additional structure and light. It was so far the most geometric and closed design among the suggested designs.

The second exploration was inspired by a spiral shape that was explored earlier and developed further into the shape of a torch. It was designed to be placed over the desk while others were all hung from the ceiling, thus appeared more as a sculptural fixture.

With clear beads ornamenting the arm modules and the crystal garnishes, both extensive pieces still carried confined images of chandeliers. However, the structure progressed into a whole different look that hardly contained the original form of chandeliers.
5. Future Development

While the first investigation was about recreating chandeliers to examine and study the original structures and the applicability of the modules, the next development will be a step further on the transformation of the module structures. The designs will be more distinguishable from traditional forms and further away from the initial inspiration of chandeliers.

The designs explored within three categories show the flexible applications and various iterations on style of the modules, however, the general theme was shown as organic fluid form with feminine soft touches throughout the collection of designs. Although that was the initial intention for the choice of materials and design of the modules, I would like to utilize the given materials for the further differentiated styles and looks: extend the style into stiff and geometric forms and stronger masculine looks by structuring the modules in more angled shapes. Also, as the investigation has evolved further from the original forms of chandeliers, I would like to push it even further into more free-formed sculptural object like structures. Crawling living sculptures would be an interesting subject to explore with the flexible and organic material of the modules, and also bio-morphic patterns would be well brought out with the repetitive layers of the modular system. For further investigation, the wider range of accessories could be
integrated as well to accentuate and support the each individual style.

Moreover, I would like to build more modules for user testing to see creativity coming out from different people. The project remained personal and self-exploratory for the first round, but for the future, I would like to open up the platform to more people to share the appreciation of the building experience. While I was playing with the modules, I noticed the positive reactions from people who were intrigued by the building modules.

From the testing experience on the modules, there are a couple of improvements to be made for the further version of modules: First, the turning joint of the connectors could be replaced with a simpler movement. Even though the turning joint is one of the solid solution for the safe and strong attachments, as the length of a module gets longer and the weight gets heavier with more components, the attaching movement of the arms can get tricky and requires a structured plan ahead in order to avoid a complication. Some other attaching skills such as clipping or magnets can be considered for the replacement. In addition, I would also like to design the connectors to be removable and attachable so that users can decide on the allocation of the connectors on the arms depending on the needs of each design. The exposed connectors that were not in use to hold other modules was the certainly the distraction of the overall look, therefore, the removable type of connectors will be helpful to complete the cleaner design. As the decision to have connectors to stay in one position was for sturdy and safe fixation, the new solution to make connectors removable should prove solid as well.

Since the fundamental platform of structures is ready, as a further study on personal relationship with the objects, I would like to add an additional layer of personalization on the object by inputting personal data possibly from biometric sensors or ambient environmental readers. The personal data will create and control unique behavior of the lights and structures, and it will provide a more private and personal experience for people with the object.

6. Conclusion

As the journey started from a naïve passion on fun building, the most part of the process in this project was a very stimulating and intriguing. Some of the moments were challenging when I had to refine the concept and find a better solution for the problem I
was working on, but the personal passion certainly worked as fuel to hold the project strong. The most convincing moments about the project were when I realized the project was a reflection of my personal passions and interests. I felt ownership of the project even when I was highly frustrated with so many details associated with tiny beads and messy glue and paint, I still found myself loving the process and getting satisfied with the outcomes.

Building and creation is not everyone’s favorite thing to do, but I certainly believe in the great value of the experience. The interaction with the object versus the interaction between people is different and the value of each is arguable, but my personal trust and appreciation in the experience would stand and even hold stronger with this project. I hope this work has been an inspiration for people who have been intimidated by the creative work, and motivate them to get their hands dirty and have fun with it.
Research

BOOKS
“Design for everyday things” by Donald Norman
“Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design” by Anthony Dunne
“Digilog” by Eo-ryung Lee
“Everyware” by Adam Greenfield
“The Laws of Simplicity” by John Maeda
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INSPIRATIONS
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