

Formal Elements, Wearable Jewelry

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Director: Tim Lazure

METAL DESIGN

Abstract

In my master's thesis and exhibition entitled *Formal Elements, Wearable Jewelry*, I explore the creative influences that inspire me to work in this medium. Texture, surface, line and movement contribute to a personal experience with materials and their natural qualities. These formal qualities, when translated into wearable jewelry, captivate and challenge our perception of what jewelry means. They create a visual dynamic and sustain the interest of the human eye. In my work, I often use traditional materials such as gold, silver, copper, steel, both semi-precious and precious stones, and explore their formal qualities. These qualities are heightened by their movement when worn. By the juxtaposition of positive and negative spaces and relief, rough and polished surfaces, I create an emotional connection by the wearer to the jewelry she or he is wearing.

I was greatly inspired by travel to Italy while an ECU student. Motifs and images of the Spanish steps in Rome, medieval towns, city walls, and window railings are translated and feature heavily in my recent body of work. Thus travel and movement are most closely intertwined in this work in both formal and conceptual terms. Organic forms deriving from formal and mental landscapes and my intrinsically sculptural sensibility is at the heart of all my work and is seen in the fluidity and movement I try to convey in sculpture for the body. I want the wearer and jewelry to become conjoined, so the act of wearing the jewelry initiates a performance, maybe by fantasy or the activation of a necklace or bracelet by the slightest move of the wearer.

Formal Elements, Wearable Jewelry

A Thesis

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By

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TABLE OF CONTENTS

List of Color Plates.....	
Introduction.....	1
Process.....	4
Technique	4
Exhibition	7
3+13 (Plate 1).....	8
Spanish Steps (Plate 5).....	9
Aurelian and Aurelian I (Plate 9, Plate 10 and Plate 11).....	11
Severina (Plate 12).....	14
Siena (Plate 16).....	16
Servian (Plate 19).....	18
Exploration (Plate 20).....	20
Djerdan (Plates 23, Plate 24).....	22
Conclusion.....	23
About the Artist.....	24

LIST OF PLATES

Plate 1:	3+13.....	8
Plates 2, 3 and 4:	<i>Inspiration: Spanish Steps detail</i>	9
Plate 5:	Spanish Steps	10
Plates 6 and 7:	<i>Inspiration: Aurelian Wall</i>	11
Plate 8:	<i>Inspiration: Roman armor detail</i>	11
Plate 9:	Aurelian	12
Plate 10:	Aurelian	12
Plate 11:	Aurelian I.....	13
Plate 12	Severina.....	14
Plates 13 and 14:	<i>Inspiration: Siena window bars</i>	15
Plate 15:	<i>Drawing: Siena</i>	16
Plate 16:	Siena.....	16
Plates 17 and 18:	<i>Inspiration: Servian Wall detail</i>	17
Plate 19:	Servian.....	18
Plate 20:	Exploration	20
Plates 21 and 22:	<i>Inspiration: Serbian Djerdani</i>	21
Plate 23:	Djerdan.....	22
Plate 24:	Djerdan.....	22

INTRODUCTION

Jewelry is not only about decorative pieces we wear and enjoy. It is also about identity and the lives we live. When on the move, people cannot carry all their belongings. Tiny pieces of wearable sculpture in the form of jewelry thus offer themselves as powerful depositories of places and memories of the past, the dynamic reality of the present and next steps in the future. This notion of jewelry is deeply rooted in my personal life and experiences, and is now reflected in my creative accomplishments.

I grew up in a small town at the geographical crossroads of central and southeastern Europe, a place of ancient history, architecture and culture, where every corner has a story. The memories of the old homes built of mud and wood, rock blocks and textured roads with natural patina remain very vivid and inspirational in my work. A few miles away from my hometown are ancient Roman Imperial ruins where, during summers, I used to participate in archaeological digs. The local museum has an extensive collection of small-scale objects, mostly jewelry, uncovered from this Roman town. While working on museum projects I had close first-hand experience with many of these ancient objects and I was astonished that the meaning of them was intensified by the messages they carried from their ancient past. The idea of hidden meaning greatly impacted me and left an indelible impression imprinted on my mind.

This memory of my youth is tied with strong emotions and nurture. I was surrounded by art, creativity and the love and care of my family. From as early as I can remember, I was fascinated by creating shapes. I had freedom to enjoy natural playfulness and amused myself with clay in the studio of my father who was a sculptor. My family encouraged my curiosity and never found it a problem that I was surrounded by mess and covered in dirt. As I grew older I helped my father as he created a variety of monuments. I was especially impressed with my father's skills in making armatures in metal to hold the clay sculptures and became intrigued by the hidden quality and importance of these metal forms.

My academic training in sculpture and metalsmithing took place in a traditional school of art and design in Serbia where I focused on the challenges of creating large-scale sculptures. The process of making large-scale monuments is very complex as it requires a

number of important steps: detailed planning and preparatory drawings; creating small-scale models; analyzing and developing the best proportions and the relationships between the constituent elements. Frequently the work entailed making small-scale models to visualize and test shapes and ideas without incurring the cost of producing the full-scale work. As a result, I was often surrounded by small sculptures and invested a lot of creative energy in making them. They took on very sentimental value and became meaningful in their own right. Their tactility encouraged me to hold them; touching and rotating them in my hands. I kept them in my pockets, turning them around and feeling their shape. Due to the intimate relationship I developed during these tactile interactions I began thinking about them as wearable objects.

These small models originally developed in Serbia transformed into wearable objects in the United States of America. After moving to the United States, I continued my artistic practice as a goldsmith and silversmith and became even more inspired to translate my training as a sculptor into an artist working with smaller forms, those that increasingly intrigued and inspired me. The word jewelry conjures up certain pre-conceived images and is often evaluated by the type and size of stones used and to a great extent their material value becomes more important than its form. I began to further explore the variety of ways to challenge long-established jewelry design and transition from traditional perceptions of jewelry towards new artistic expressions. I was able to capture fluid sculptural movement informed by organic elements and rugged texture. Wearable art became the heart of all of my work.

Movement – both spatial and visual – is an intrinsic part of my work and supports the tactile experience. Jewelry interacts with the body of the wearer, following its contours, utilizing the relationship or bond between the animate and inanimate to create new movement. Thereby, this personal expression and movement intrigues me to investigate the possibilities of combining negative and positive spaces, abstract forms and lines, and balanced proportions. Through these asymmetrical, dynamic compositions I develop visual movement in patterns and layers keeping minimal, simple, and natural surfaces. The person wearing my jewelry becomes a sculpture by wearing my work.

After spending time in Italy in the summer of 2011 and becoming increasingly interested in medieval architecture and art, I was reminded of the historic traditions of jewelry and metallurgy

and also of the timeless beauty in the worn and broken medieval structures, especially Roman walls and worn church floors. This triggered memories of familiar historical motifs from my native Serbia, which influence my work. The mimicking of heavy textures and reliefs of these massive objects contribute to the sensual and tactile experience of my tiny pieces.

I want my work to create visual and spatial movement and also for it to be viewed from multiple angles. Thus, the sides and interiors of my bracelets and rings and reverse sides of my necklaces show similar patterns and shapes. The overall shape of my work is broken down into components, comprising tiny details and worlds in their own right. They require magnification to execute and to fully experience them. My work becomes a conversation between the micro and macro worlds. At the same time, because my jewelry is made of such detailed and abstract forms, it blurs the distinction between the two worlds.

PROCESS

In my work I use several traditional and also digital techniques, yet the developing idea remains of the utmost importance and is an integral component of my creative process. As I mentioned earlier, a tactile interaction with my models is a very important part of my creative process. Equally crucial is my relationship with my sketchbooks. Because they are so significant to me I always have one with me, either in my pocket or bag. The sketchbooks contain drawings and scribbled notes and ideas – entire worlds on their own. Both my sketches and small-scale models build upon the ideas behind my work; they live and grow with me. Starting with ideas and drawings, I then carve models in wax and then cast these in metal using the lost wax-technique. After casting I have a model which I finish and apply texture. I then make a mold which I use to fill with wax and make prototypes of the previous model. These give me the ability to explore numerous creative possibilities. Coupled with this method I enjoy exploring the use of modern techniques and ways of combining the two. Sometimes depending on the complexity of the task I may use 3D design programs to create a sub-structure. To obtain the best results my process is iterative with frequent work back and forth in different media before I achieve what I am looking for.

TECHNIQUES

Lost wax casting technique. This method of casting intricate metal shapes entails first modeling the required form in wax, which leaves a high-quality model for a single casting. This wax model is then surrounded by a fine plaster, which creates a mold. The mold is then placed in a kiln, which is fired to a high temperature to melt the wax out, leaving negative space where the wax model was. Then metal is melted in a ceramic crucible and poured into the plaster mold, which creates a metal positive.

Wax is a great workable material especially because of its various levels of hardness and because of its applicability for the lost-wax casting technique. It is soft enough to quickly achieve the shape of the model, and is sufficiently hard enough to carve and develop textures into its surface. I use various sharp knives to carve the wax and to get the results I desire. Sometimes I

have to make carving tools with specially designed tips to accommodate what I need. One of the best characteristics of wax is its additive quality for model-making; I can use a heated wax working pen and easily add to or subtract wax from the model. I can use a variety of different types of wax depending on the surface quality I desire.

To create the different forms or textures I also make molds. There are two different kinds of molds that I generally use; silicone and rubber. Silicone molds are used for low temperature materials and rubber for metals. I make prototypes from the molds made from different objects and combine them. When I finish modeling the wax I use the lost-wax technique to transfer my work from wax to metal.

Metal fabrication is another technique I frequently use. I first create paper models and templates, then, by using these models and templates as a starting point, I construct them in metals by use of different techniques like forming, forging, raising, sawing, filing, and soldering. To obtain the best results I have to repeat the process both in metal and wax several times.

3D design programs and 3D printing is used in my work especially when an idea is extremely difficult to create by hand. I start by scanning my drawings then I transfer the important contours into graphic vectors. By manipulating vectors, renderings are created that are used to create 3D models. The software is connected to a CNC milling machine¹ and creates a 3D roto prototype² of my model. This model is made out of wax or resin and is a good raw material to experiment with. For example, with my wax-working pen I can deposit different types of wax onto the computer-generated model to add texture and further develop my ideas.

Quite often I work on complex pieces using a combination of all of these three basic techniques. The process, however, is essentially the same. When working on a model with numerous parts, all of them have to fit together as seamlessly as possible and the patterns should flow and match from segment to segment. With very little room for error, working on such small-scale and detailed objects requires multiple repetitions of the process until I am fully satisfied.

¹Computer Numerical Control (CNC) Milling is the most common form of CNC. Milling machines are often classed in two basic forms, horizontal and vertical, which refers to the orientation of the main spindle. Both types range in size from small, bench-mounted devices to room-sized machines. CNC mills can perform the functions of drilling and often turning.

²Roto prototyping is the process of automated manufacturing of physical components using freeform fabrication. A Rapid Prototyping machine works by taking models from created by software and then converting them into extremely thin, horizontal cross-sections and then goes on to create each cross-section in physical space in a cyclic manner until the model is completed. Rapid Prototyping is a process in which the virtual model bears identical resemblance to the finished physical model.

To reinforce my work as sculpture created in a portable and dynamic form I want my jewelry to be viewed as sculpture in the round shown within the gallery space. To get this effect I often build display bases as integral parts of my work. These bases have similar forms as the jewelry itself, incorporating slots into the bases where the jewelry can be placed. This makes the base more of an integral part of the piece, contrasting with rather more conventional static methods of displaying jewelry.

Once the model is formed in metal I use a variety of finishing techniques to complete each unique piece, including:

Electroplating: Plating process where electrical current is used to coat a conductive object with a thin layer of metal, such as gold.

Granulation: A technique where tiny granules or "grains" are fusion-welded to the metal's surface to create a pattern or design. I also use tiny balls of metal (shot balls) fused to the metal's surface to create pattern or design.

Hammered finish: Using a hammer to leave indented hammer marks on the metal's surface.

Mokume gane: A mixed-metal laminate with distinctive layers of precious metals worked into patterns and bonded into a single piece.

Patina: A method, often by use of chemicals, to create surface embellishments either for color, texture, or both. Patination composition varies with the reacted elements which determine the color of the patina. Sometimes the surface is enhanced by waxing, oiling, or other types of lacquers or clear-coats.

Reticulation: Created by heat, it gives the surface of the metal a rough or wrinkled texture (like a network or web) that has a naturally formed appearance.

Solder: A fusible metal alloy (gold solder: gold mixed with lower melting metals) melted to join two metallic surfaces. Temperature for silver solder ranges from 1490 ° F to 1270 ° F; for gold solder from 1837 ° F to 1517 ° F. Solder is used with flux which removes impurities and oxidized metals from the points of contact.

EXHIBITION

3+13

3+13 is part of my creative research of organic forms. My process began with the three basic organic forms I have made. I then use an iterative process of transforming them by adding additional forms or by changing the material of the constituent parts. Thus far I have developed 13 models starting from these basic three.

I carried these small abstract models for sculptures around and they became so precious to me that I decided to use them as small wearable sculptures. I think of the body as a pedestal for these sculptures. Because of the shape and form of the pieces it becomes challenging to figure out how the jewelry can attach on top of the body. In this group of work it is particularly challenging to engineer the pin-back findings to create the proper balance between the wearable sculpture and the body that wears it. When not being worn they can be displayed as a small installation which accentuates their sculptural form.



3+13: Silver, steel, raw gems, paper, gold plate, patina, paint (Plate 1)

Spanish Steps

These six rings were created after returning from my trip to Italy. I was inspired by the remarkable architecture of the Spanish steps in Rome. The patina and ancient appearance of the steps inspired the texture of my rings. The rings were modeled in 3D software, then texture was applied in wax, and they were finally cast in silver with some of them electro gold-plated³. I used granulation⁴ along with an assortment of raw, black, and white diamonds to suggest the ambivalent and ambiguous impression of luxurious life in the ancient city of Rome. Some of these rings have motifs from architectural columns to disclose the enduring architectural quality of Roman and Western civilization. The patterns are repeated in the interiors of the rings to suggest the idea of endurance and preeminence rather than superficiality.



Inspiration: Details of the Spanish Steps showing the texture and lines which inspired my ring series (Plates 2, 3 and 4)

³ Electrical current is used to coat a conductive object with a thin layer of gold.

⁴ A type of decoration in which minute grains or tiny balls of gold are applied to a surface in geometric or linear patterns or massed to fill in parts of a decoration. It is a traditional technique first used as early as the 3rd millennium BC in western Asia and Egypt and later by the Etruscans.



Spanish Steps: Silver, 21k gold, white, black, and raw diamonds (Plate 5)

Aurelian and Aurelian I

These bracelets are made of silver, white, black, and raw diamonds. They are masculine pieces of jewelry inspired by the Roman Emperor Aurelian and the immensity and masculinity of the walls he built to defend Rome from attack- a fascinating structure imbued with the depth of history. It is also reminiscent of the metal scales seen in the segmented armor of Roman legionnaires. An important feature of this bracelet is its flexibility and lightness with rich texture on the top, thus defying and contrasting the solidity and immensity of the great wall. I have used gold granulation on the surface of the piece to introduce a contrasting color to increase the texture and heighten the ancient appearance.



Inspiration: Aurelian Wall (Plate 6, Plate 7)



Inspiration: Detail of relic of Roman armor (Plate 8)



Aurelian: Silver, 21k gold, white, black, and raw diamonds (Plate 9)



Aurelian: Silver, 21k gold, white, black, and raw diamonds (Plate 10)



Aurelian I: Silver, 21k gold, white, black, and raw diamonds (Plate 11)

Severina

This feminine necklace is the partner to the Aurelian series which is fitting as Severina was the emperor's wife. The flexibility of this necklace is, as with the Aurelian series, created by the use of multiple links on the reverse. These connections on the back, not visible when being worn, achieve its flexibility and seamless movement.

The texture is inspired by the cobbled roads of the Roman Empire, rich in reliefs and layered with the tapestry of its enduring past and the historical secrets buried deep within them. The way the roads have worn but ultimately endured over time is reflected in this patinated necklace's seemingly perfect lightness and flexibility.



Severina: Silver and 21k gold (Plate 12)

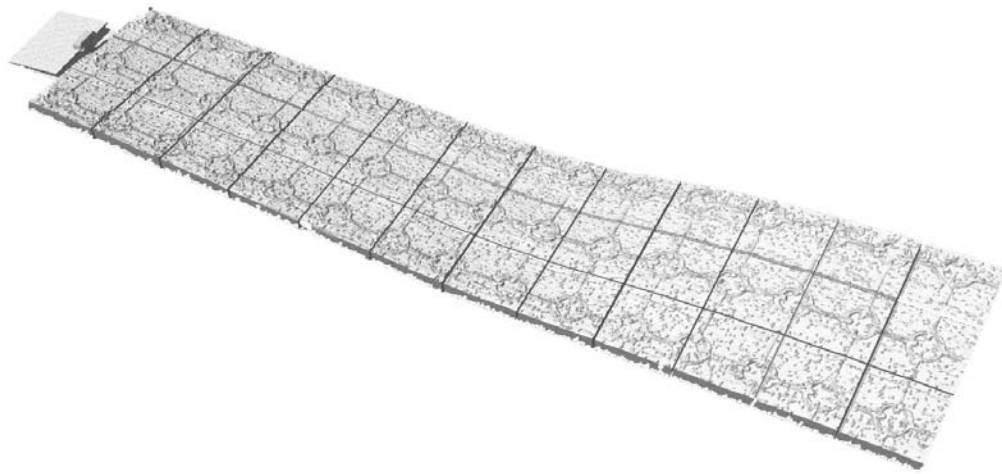
Siena

This piece is also inspired by my trip to Italy. I was impressed by the details of the medieval Tuscan hill town of Siena near Florence. In particular, my intention is to recreate the window railings of an ancient bar that simultaneously conveyed the joy and playfulness of a merry time and solidified sense of security. I am interested in texture and the ancient look of a semi-transparent window grid in front of a closed wooden panel and the heavy texture of the solid stone wall. Thus the texture and relative size of the window and wall inform the bracelet and the pedestal respectively. This very masculine, solid, and enclosed piece follows the shape of the male body in movement and rest.

To reinforce my work as sculpture created in a portable and dynamic form I want my jewelry to be viewed as sculpture within the gallery space. Siena is therefore displayed on a base which forms an integral part of the piece contrasting with rather more conventional static methods of displaying jewelry. The base has a similar form to the bracelet incorporating a slot where it can be placed.



Inspiration: Siena window bars detail (Plate 13) Drawing (Plate 14)



Drawing: Siena (Plate 15)



Siena (Plate 16): Silver, 21 k gold on resin base

Servian

This brooch takes its inspiration from Rome's Servian wall, its original medieval defensive barrier of large quarried blocks made from ash and rock fragments ejected by volcanic eruption. Sections of the wall can still be seen in Rome today, with vegetation visible on and between the blocks (see detail below). The surface texture of this piece is inspired by the volcanic blocks; volcanic fragments are represented and are combined with negative spaces and patinated color, reminiscent of vegetation, to create a visual dynamic of different surfaces and color. There are multiple connections on the reverse which facilitates flexibility so that it follows the shape of the body and sits comfortably on the wearer.



Inspiration: Servian Wall detail(Plate 17)



Detail of wall (Plate 18)



Servian: Silver, bronze and patina (Plate 19)

Exploration

These six rings were created after I finished my series of bracelets. The exterior of each ring is distinguished by varied textures and granulations, as well as metal carving and hammering techniques, while the interiors exhibit the Japanese mixed metal technique of *mokume gane*⁵ resulting in the swirling pattern of alloys.

The intention behind these rings was to make them texturally appealing both on the exterior and the interior. The interior decoration is revealed when the ring is not being worn but is secret when it is being worn, known only to those intimate with the ring, when the ring is on the finger. Because of their remarkable hidden layers and meaning these rings make attractive weddings bands.

⁵ A mixed-metal laminate with layers of precious metals bonded into a single piece. Translating as *burl metal*, the name was borrowed from one type of pattern created in the forging of swords and other edged weapons in 17th century Japan. The inventor, Denbei Shoami (1651–1728), initially called his product *guribori* for its resemblance to *guri*, a type of carved lacquerwork with alternating layers of red and black.



Exploration: Silver, copper (Plate 20)

Djerdan

Djerdan (pronounced jer-dan) is the Serbian name for necklace. Traditionally necklaces made of a collection of connected silver or gold coins formed part of the dowry a bride brought to a marriage and a way of storing family wealth throughout the generations (see images below). Because djerdani are made of old coins they have a particularly ancient look and are heavy in weight. Sometimes they are extremely large. The rustling sound of the movement of the coins while worn is an intrinsic part of the necklace's meaning as a signifier of wealth. My intention is to mimic but update the look to be worn today. The piece is made by use of an old reticulation⁶ technique to achieve the textural look of the metal. Its construction encourages movement with sonic resonance in the connected pieces. The necklace is much lighter than the ancestor djerdan from which it gains its inspiration.



Inspiration: Serbian women's dowry necklaces of silver or gold coins (Plate 21 and Plate 22)

⁶Reticulation is a process for giving the surface of the metal a rough or wrinkled texture (resembling a network or web) that has a naturally formed appearance. The process (also known as Samorodok) was popularized by Russian artists such as Fabergé.



Djerdan: Silver (Plate 23)



Djerdan: Silver (Plate 24)

CONCLUSION

In this paper, I have shared both the technical and conceptual aspects of my thesis exhibition and I have discussed my interest in and research on Formal Elements with Wearable Jewelry. The materials and techniques I use allow me to express my creative research about these implications to the viewer. In the end, this body of work is about being content with who I am as an artist and knowing that I have the ability to succeed in anything without conforming to the constraints of traditional roles.

ABOUT THE ARTIST

I am lucky to have had a wonderful and inspiring childhood. I was born to parents who demonstrated their love for me. My father was an art teacher, a charmer, a talker and an entertainer. As he was primarily a sculptor, I had many opportunities to play with clay and small molds, mostly of animals, from a very early age which I can vividly recall. My mother is also an artist, a graphic designer by training. My parents taught me about things that matter in life, including art.

I grew up in Knjaževac, a small town in Serbia in South Eastern Europe at the crossroads of history and as a result a rich past which has seen many cultural and historical transitions. Knjaževac has ancient architecture and a rich arts and crafts tradition both throughout its history and today. In this small community, most things are still made by hand; permanent and enduring they remain in families for a long time.

For my undergraduate degree I joined the excellent art program at Belgrade University. After a decade of active work in the field – sculpture, jewelry and restoration of metal artifacts – I came to East Carolina University for my graduate studies in metal design.

I have had many opportunities to travel, visit interesting and diverse places throughout the world and explore different cultures, their art and architecture. All of these happy moments in my life have given me inspiration to enrich my own language of sculpture and to explore the power of form, texture, line and movement, utilizing both positive and negative spaces, relief, protrusions, rough and polished surfaces to create the emotional connection of my wearable objects. My work captivates and challenges the perception of traditional materials (silver, gold and gem stones) I use to create a visual dynamic and sustain the interest of the human eye and trigger and maintain memory and emotion. The act of wearing the jewelry initiates a performance, maybe by fantasy or the movement of the wearer and when not being worn my pieces maintain integrity by their sculptural significance.

