The foundation of my work is built upon the idea that everything is comprised of constituent components in which all of the components serve a function in the creation of the integrated whole. This way of thinking is consistent with the principles of systems, however large or small, complex or simple. Every system has parameters that define and frame the behavior of its set of interacting and interdependent components. What I am interested in is not necessarily the final output of the system, but rather, the process in which the components interact within the parameters of the system and how the relationships of these interactions affect the outcome.
SCULPTURE AS SYSTEMATIC GROWTH

by

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SCULPTURE AS SYSTEMATIC GROWTH

The foundation of my work is built upon the idea that everything is comprised of constituent components in which all of the components serve a function in the creation of the integrated whole. This way of thinking is consistent with the principles of systems, however large or small, complex or simple. Every system has parameters that define and govern the behavior of its set of interacting and interdependent components. What I am interested in is not necessarily the final output of the system, but rather, the process in which the components interact within the parameters of the system and how the relationships of these interactions affect the outcome.

My interest in systems and process stems from my curiosity and investigation of natural forms, particularly organic forms and specifically, their growth patterns. I have always considered nature to be the supreme architect as evidenced in all of its creations. Nothing unnecessary is included and nothing necessary is omitted. It is the simplicity and efficiency in organic forms’ systematic growth pattern that I strive for in my own work in hope of demonstrating the properties organic systems established as an archetype for all other systems to follow, including man-made ones.

When I started art training in my undergraduate study, I was exposed to various mediums of art: drawing, painting, and so on. I was never good at creating space or the illusion of space on a flat plane. My awareness of real space and my ability to create physical things in space were more convincing than anything I could put on canvas.
Naturally, I gravitated towards sculpture because it grants freedom to explore space in an unrestrictive way.

When I started my graduate study at UNCG, ironically, I revisited drawing but not in the traditional sense. I created a series of small sculptures using thin steel rods. The steel rods took the place of lines or marks made in a traditional drawing. Unlike a traditional drawing, which is typically viewed straight on, the small sculptures can be rotated and positioned in any manner and the image or “drawing” viewed from any particular perspective is unique. This was not really a discovery. It is common knowledge that viewing any non-symmetrical three-dimensional object from different perspectives (front, side, top, etc…) will yield different images. Nevertheless, this intrigued and prompted me to further explore the idea of drawing in space, which led to the creation of my next sculpture, **Self-Portrait**.

For **Self-Portrait**, I wanted to create a sculpture of my likeness using the concept of drawing in space but also incorporate the appearance of randomness while adhering to a specific system of construction. The goal was to create a sculpture with an embedded portrait of myself that is discernable only from a specific vantage. To do this, I cut rhombus-shaped pieces of steel and welded them so that the pieces seem to be connected in an arbitrary manner. As a result, the sculpture, when viewed from any other perspective beyond a predetermined distance, a specific angle, and my eye level, will produce an image other than my likeness. However, if and only if these three viewing conditions are met will my portrait be revealed. In making **Self-Portrait**, I learned that
specificity of individual components and their placement is paramount in the uniqueness of a sculpture. This understanding laid the groundwork for the remainder of my work.

*Woman* is a study of the female form. As with *Self-Portrait*, this sculpture is made with simple geometric shapes. The individual triangular pieces and their positions are unique to this particular sculpture. Any deviation of shape or size, even in only one of the triangles, will result in a different sculpture. The notion of complex forms composed of smaller, simpler elements gave impetus to this sculpture, and the use of simple geometry was a logical decision since forms don’t get much simpler than triangles.

Figuration is a departure from my typical style of art making. I prefer to work in a more abstract manner and aim to create forms that induce multiple associations. Although my sculptures are not kinetic, I want them to exhibit dynamic qualities in a similar way certain sports cars project a sense of speed even while standing still. This is important in my work for if my desire is to allude to organic forms, I must demonstrate their inherent non-static qualities: growth, movement, fluidity.

Although *Self-Portrait* and *Woman* rely on specific systems of construction, their forms are also influenced by predetermined conditions. *Self-Portrait* was created with a specific image in mind and *Woman* had to ultimately reveal a form resembling a female figure. In this sense, both of these sculptures are to a certain degree contrived and fail to fully convey a natural progression of growth characteristic of organic vigor and autonomy. If the self-imposed challenge was to create work with minimal imposition on my part then effort was needed to eliminate altogether, or as much as possible,
expectation or predetermination of any specific outcome and let the work progress in the most organic way possible.

*Yin-Yang* is a sculpture that started life as a single closed ribbon of steel. From this point of origin, successive ribbons are added on both sides of the initial ribbon, effectively emanating in opposite directions. In Chinese philosophy, the concept of Yin and Yang represents the two complementary forces that encompass all aspects and phenomena of life. While creating this sculpture, I did not set forth any formal expectations for the finished form, and instead, concentrated purely on expressing principles of Yin and Yang. One half of the sculpture is angular and robust, while the other half is more curvaceous and slender. This was the intention at least. Although the sculpture is bulky and appears to be voluminous, it is completely hollow and doesn’t take up much actual space. The smooth, refined exterior is in stark contrast to the interior’s crude weld mark-laden surface. Also, the manner in which the two “halves” of the sculpture twist, contort, and intertwine suggests to me an occurrence of simultaneous struggle and embrace. As the sculpture grew, I found myself unexpectedly at times having to physically struggle to bend steel ribbons in ways to force the growth of the sculpture in a direction in opposition to its current movement. Conversely, the sculpture progressed smoothly and rewarded me with ease of construction when I didn’t try to fight it. In my opinion, this unanticipated tug of war or give and take between the sculpture and me is most successful in remaining true to the concept and essence of the piece. The process of successively overlapping ribbons in which *Yin-Yang* is constructed and its
unresolved open-endedness is intended to imply an indefinite growth limited only by its creator’s time, effort, and will.

*Means to an End* in my most ambitious sculpture to date. Although the technique employed for this sculpture differs from that of *Yin-Yang*, it is built on the same objective of achieving spontaneous form through systematic growth. The system that governs the growth of *Means to an End* allows for more variables, resulting in a higher degree of complexity in the sculpture’s construction and form. The sculpture is made of thousands of pieces of bent steel plates with each piece welded to at least two other pieces. The position of each piece is dictated by the shape, size, and placement of preexisting pieces. Since shape, size, and placement of each piece determines the sculpture’s direction of growth, rate of growth, and surface texture, I must, at all times, consciously be aware of these three factors that are at play simultaneously. Because of the difficult task of concurrently managing all variables, my control of the sculpture’s form is further diminished allowing the sculpture to grow in a more organic, less controlled way. Although I ultimately cut each steel piece to size and shape, the act is based no more on my will than the will of the sculpture. In this respect, *Means to an End* trumps my previous attempts at mimicking the natural development of organic forms and it comes closest to establishing a coherence of all the parts into a single inseparable whole so strong that the form appears complete. I believe it possesses one of the most fundamental characteristics of organic forms: wholeness.

Because my work generally involves numerous parts and relies on the intuitive decisions I make in joining them together, I rarely make preliminary maquettes or
sketches of my sculptures. I find these practices restrictive and counterproductive to my endeavor of creating something that is essentially born out of itself. The work has to find its own way of materializing through a strict process of accumulation afforded by the system specific to its creation. There is no editing in my work. Once a piece is added it is permanent. I used to think that if I made a mistake then I would have to accept it. But this way of thinking is based on my aesthetic preference rather than my full acceptance of the system in play. In actuality, if the parameters of the given system are followed, then no mistakes can be made. In its continuation of growth, the sculpture must adjust and adapt to whatever has occurred, regardless of how I feel about my decisions or actions. At any time during the making of a sculpture I can study what it has momentarily become. In trying to understand how it got to where it is, I hope to anticipate what it might do next. In the end, all of my sculptures either fully or partially document the history of their growth. It is only through looking back and studying the patterns and consequences of my decisions that I understand how to proceed forward. However complex my sculptures may seem, I believe, like anything else, to understand them is to understand how all of their parts work.

In addition to my fascination with natural forms and organic growth, I am also drawn to and indebted to artists who set precedents in the field of sculpture, especially those who have established unique idioms from which other artists, including myself, can expand upon. It is because of these artists’ achievements that I am able to grasp where I belong in the history of sculpture. Julio Gonzalez and David Smith’s fabricated steel sculptures paved the way for my own work in that medium. Smith’s earlier works’ use of
lines and negative space, which he called drawings in space, unquestionably influence my attempt to integrate pictorial space with physical space. Sol Lewitt’s rigid sculptures may differ dramatically from my biomorphic creations, but his use of self-imposed systems and process-based constructions provide a model for my own working methods. Two more recent artists, Tara Donovan and Ursula Von Rydingsvard, whose aesthetics are more in tune with my own and who transform copious quantities of singular materials into unexpected, grand, and organically dynamic forms, undoubtedly impact the manner in which I choose to create. Like Donovan, I am not trying to simulate nature, but instead am trying to simulate the way of nature, the way things actually grow. As with anything, including the aforementioned artists, it is impossible not to be influenced by what we have seen, felt, heard, experienced, and so on. What is of paramount importance is how we allow ourselves to be influenced.

Although a host of art and non-art peculiarities sway my philosophy and approach to art making, so too does my own work. Everything that I have ever created has had an influence on subsequent creations. The direction I take henceforth is uncertain but it is only continuous experimentation and undertakings coupled with awareness of what I have produced that will guide me in my endeavor.
REFERENCES


In these, the growth-rate constant represents the relative growth rate instead of merely an unspecified growth coefficient. We also present U-versions where the growth-rate parameters return absolute growth rate (instead of relative). The new U-Gompertz models are special cases of the Unified-Richards (U-Richards) model and thus belong to the Richards family of U-models. As U-models, they have a set of parameters, which are comparable across models in the family, without conversion equations. 49. Jefferies CJ, Brain P, Stott KG, Belcher AR. Experimental systems and a mathematical model for studying temperature effects on pollen-tube growth and fertilization in plum. Planudt, Cell & Environment. 1982;5(3):231–6. The growth pole theory may be considered as one of the earliest regional development theories referring to knowledge and innovation. This theory stresses the role of propulsive branches and their impact on the development of their milieu. However in the original theory, although it stressed the role of innovations, as pro-pulsive branches were considered not the most innovative branches but such as steel or petrochemical industries. Thus in the article the original growth pole theory is presented with the emphasise on the aspect of innovation mentioned by the authors of the theory and the new At RISD, Sculpture is about the growth of the individual as part of a larger community. The department ethos emphasizes visual and critical literacy and intensive skill acquisition in support of conceptually strong creative practices. Encouraged to experiment and push beyond obvious solutions, students learn to think holistically and understand the importance of the work they make as it relates to the world. Ultimately, they're able to produce meaningful work through a fluent command of process and the informed use of materials. Degree programs.