Externalized | Origins of Aesthetic Motivations
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by

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To my wife, Abby. Thank you for all the sacrifices you’ve made to help me make the most of this time and experience. None of this would have been possible without your endless support.
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Abstract

My thoughts and behaviors are influenced by a compulsive disorder. Observing this, I’ve learned how much my outlook can be shaped by my own ritualistic patterns. I live with a heightened sense of awareness toward my particular compulsions which has shaped how I see the world. In this thesis writing and collection of designed objects, I am seeking to further explore my own experience with compulsive thoughts and behaviors, unpacking how they manifest in the day-to-day, how they direct my perception, and ultimately how they serve as a driving force behind my design process. By observing these tendencies and articulating the source of my convictions, I’m laying bare the process by which I design and hoping to develop a better understanding of which aspects of my design approach lead to compelling results and which become obstacles. This writing takes on a spirit of self exploration and is intended to be an ever-evolving tool for refining my approach to design.
Art and design can often serve as a platform for expression, self-discovery, provocation, and perhaps also a means to assuage one’s anxieties. Though creative pursuits often affect people engaging on the periphery, the creator themselves tend to gain the most from this generative experience. The process by which we create serves to reveal truths about ourselves that nothing else can expose, and our unique set of experiences becomes a foundation upon which work is built.

As I consider my own formative experiences, none seem more impactful than my ongoing relationship with Tourette Syndrome and its related obsessive compulsive tendencies. Tourette’s has been a constant distraction, but has also provided a particular type of perception that is fundamental to how I seek inspiration, how I create form, and ultimately how I realize my work.
My design practice centers around geometry and symmetry to create harmony and wholeness. It is rooted in mathematical systems and relies on fundamental geometries to connect the work back to nature. There is a discipline in my process of making. A sense of rigor and vigor imbues a seriousness in the objects I create. It invites the viewer to discover the unknown through interaction and strikes a balance of being simple without being boring. This work is the distilled result of developing a particular visual language formed out of years of deep involvement with pattern, symmetry, rhythm, and balance.

My hope is to gain a clearer understanding of what I’ve experienced in the past to help me better navigate where I am going in the present. This writing has been an exercise in introspection, opening space to examine my daily compulsions, analyze how they direct my attention, and draw connections to the eccentricities which have become manifest in my design process. By arriving at a more comprehensive view of my design thinking, I wish to reassess the parts of my process that could be altered and to continue developing the aspects that have proven to be beneficial.
I was fairly shy as a child, never wishing to be in the spotlight. Content fading into the background, I did all I could to avoid being anyone’s focal point. By the second grade I started to have a constant urge to blink and raise my eyebrows. This behavior came on suddenly and made it nearly impossible to fly under the radar. Though it was easy enough to control, it wasn’t long before the tics became more noticeable. I began to squeak, grunt, twist my neck, and jerk my head forward and back, all of which attracted the attention of my classmates. No longer could I blend into the background; I was unwillingly put on center stage and had to pretend to ignore the giggles and stares of my curious peers.
My childhood and adolescence was dominated by frustration and anxiety as I struggled with this neurological battle. I couldn’t make sense of these uncontrollable behaviors and spent my days thinking about nothing else. All my effort was put into restraining that next tic. My days felt like a haze, as if nothing was coming through clearly except for the voice in my ear, screaming what to do next. I’d constantly scan the room to see if anyone was staring at me, seeking the release that my mind was begging for without being noticed. I fell behind in classes, missing pertinent information and unsure how to catch up. My self-image was entirely consumed by my tic disorder, and I closed off this part of myself to friends and family, refusing to discuss it. It was only with time that I learned to better cope with these compulsions and the emotional weight they carried. Though I still struggled, I found ways to learn in spite of these challenges and reached a point in high school where it had very little impact on my day-to-day.
Moving into adulthood, this struggle with tics began to subside and was replaced by patterns of compulsive thoughts. As I scanned the words on a page I found myself obsessing over all the numerical relationships I could find within the text. I began to count the number of letters in each word then the number of words in each sentence, compulsively searching for particular sums that I found pleasing. Though there was no particular logic to it, I found myself drawn to numbers that could be easily divided or seemed to have a level of stability (4, 10, 15, 16, 20, 25, 26, 30, etc). My age or the current year also became a number of intense interest. Conversely, I was repelled by prime numbers or numbers that didn’t have a sense of purity (1, 2, 3, 6, 11, 12, 13, 17, etc). I even found myself twisting my rules in an attempt to find one of these pure numbers, counting punctuation marks or spaces to avoid a number I didn’t like.
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In addition to counting, I began reading in rhythmic patterns, often three words at a time, as it helped with counting and created a structure that I found appealing. Along with the rhythmic reading, I’d sometimes disassemble words or phrases entirely and reorder them to create new words or meanings. It was becoming a creative process. This sparked an interest in palindromes and led me to try to find or create them in everything I read. Though these tendencies could be ignored, it took a tremendous effort and made reading a difficult way to learn.
Externalized | Directed By Perception

Ian Stell, Pyramid
My physical steps became something else I was compelled to count, particularly as I ascended or descended a staircase. Sometimes I’d do this to discover the total number of steps in the flight, hoping to land on a number I liked. Or, I would see it as a challenge to only step on even numbered steps, attempting to create a symmetrical pattern of steps from top to bottom. This process allowed me to insert myself into the equation and use my own movements to create balance. It allowed me to externalize this internal compulsion and transform it from thought into action.
The compulsion to count extended even into my interactions with the built environment. I was drawn to architectural elements, fixtures, and interior components that had some degree of repetition. Noticing and counting these repeated elements allowed me to find symmetry within a space or divide a building or room into equal parts. Doors, wall panels, columns, light fixtures, ceiling tiles, structural supports—all became players in my pursuit of a balanced or symmetric space. I found the layouts of cities to be fascinating, particularly in the case of Rome or Washington D.C., where buildings and structures were intended to line up in a specific way. I searched for inherent structure and symmetry in areas where it was less apparent or where it may not be intentional at all.
Years of compulsively counting, searching for symmetry, and creating patterns, have significantly impacted how I interact with the world and what I naturally direct my attention toward. My perception has become heavily filtered and I spend my days observing shapes, patterns, objects, and architecture, often to the detriment of the tasks that require my attention. Over time, this hyper-focus has drawn me to art and design, areas that allow me to create the harmonies I long for rather than turning outward to find them. Design offers a level of control I crave and allows me to impose the order I feel I need on the physical world around me. I am able to align the internal with the external. It has become a way for me to externalize my compulsions, channeling them toward productive outlets. It is a respite from having these things only contained internally.
My central point of formal inspiration for my thesis body of work is the circle and the ways in which it can be deconstructed while still maintaining some reference back to the original form. Despite working with a range of materials, colors, sizes, and typologies, this original source of inspiration still serves to tie each of the pieces together and helps create a cohesive collection that is greater than the sum of its parts.

Much of my work relates to connectivity and the relationship between adjacent parts, highlighting how the connection itself serves as the most significant element in the piece. This focus uses geometry as a tool for dealing with spatial relationships between components and provides solutions for how elements can be joined together seamlessly. It offers a system within which patterns can be formulated. I get endless inspiration for creating formal interactions from this system, often leading me to discover hidden functionalities.
I’m drawn to the idea of connectivity in a mechanical sense as well as in how we connect with the objects around us. Connections serve as transitional components within a system, allowing multiple parts to become integrated and bringing wholeness to a multi-component object. This point of transition is where I find the most potential in a design. It directs how a form takes shape and affects how the components will interact with one another, determining whether an object is fixed, modular, mutable, kinetic, or disassemblable.
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Observation Journal

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Observation Journal
In Coil Bench, the point of connection is what brings the piece to life. It offers flexibility between each of the components, allowing it to be reformulated into a variety of positions to accommodate a range of potential uses. In Stack Shelf, the components can be rearranged or removed in order to create a particular set of desired conditions. The overall height and shelf height adjustability allows the piece to take on a variety of forms and serve a range of functions. The repetition of components and universal connectivity affords the piece a great deal of flexibility and variation.

In both of these pieces, the point of connection gives me an opportunity to explore how pattern and repetition of components can be used to provide a particular function. Though these connections are integral to how the pieces operate, they also determine how they take shape, allowing the form and function to become fully integrated.
Stack Shelf
In many instances, my obsessive attention to detail is a positive aspect of my design approach. However, it can quickly turn into a hindrance, causing me to miss the forest for the trees. I can put a great deal of effort toward refining a particular detail or set of details, only to realize I’ve neglected the remainder of the piece. This is particularly evident when developing a joint or mechanism. I’ll get so focused on the details of this component that I lose sight of the function that it is supposedly providing, resulting in a piece that is mildly functional at best. Because of my insistence on creating functional, useful work, the application of my beloved component will appear forced and won’t do justice to the component or the piece to which it has been applied.

This happened while making the aluminum joint bench. I was so intent on refining the aluminum component that I lost sight of the bigger picture. I ultimately forced it into an application where it wasn’t well suited, and the beauty of the joint itself was lost. However, after reflecting on the outcome I was able to redirect my approach and designed the Twist Table and Slot Shelf, neither of which would have come to light without this prior experience.
Externalized | Directing Through Perception

Shoe Shelf
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Twist Table
Though my work exists in three-dimensions, much of it starts in two. I spend a lot of time experimenting with two-dimensional shapes and seeing how a form can be translated from one plane onto multiple planes through geometry and pattern. I experiment with imposing different actions and movements upon shapes to find new forms: pivot, flip, slice, rotate, join, extrude, invert. These alterations often serve as jumping off points for new designs. Experimenting with multiples of a particular form allows me to see how it operates within a collection and extends my understanding of its potential.
This interest in the translation between one plane and multiple planes has led to an exploration of developable surfaces and the stamping of three-dimensional forms. Using the movement of an oloid as an initial point of inspiration, I’ve begun to observe how my three-dimensional forms can be translated back to two dimensions. Through stamping, disassembling, rolling, flipping, and rotating the solid forms, I am able to see how they leave their mark on a single plane, even exploring their potential for casting shadows. This process allows me to understand a form at a deeper level and becomes an additional approach for creating and discovering pattern and controlled repetition.

Fondation Beyeler, Oloid
Pat Kim Design, Oloid
This idea is very much present in my Sliced Cube project. I experimented with Sliced Cube models and discovered that when used as stamps they left a fascinating trail in their wake. This stamping technique offered surprising discoveries and generated rhythms and patterns that I would never have otherwise formulated. Though I controlled the process, this method allowed me to make decisions by intuition and offered a level of freedom I rarely feel in my typical design process. The shape of the cube and the corresponding slices create a set framework, but I still had the freedom to flip the cube in whichever direction I desired. Though by nature I enjoy having a structure to operate within, I felt refreshed by these moments of spontaneity. It served as a reprieve from the potential numbness of complete order.

During all of this — 2-D forms translated to 3-D through pattern and play — I still paid attention to counting systems and moments of geometric harmony, driven by the same compulsions I’ve experienced for most of my life. By externalizing these internal compulsions I was able to experience a sense of wholeness and tranquility. The process of creation and the end result became a remedy to the chaos in my mind, allowing me a moment of peace, distracting me from my distractions, allowing me to be.
My form-guiding-function approach surfaced due to a combination of factors, namely my compulsive need to create pure, balanced forms and my desire to create functional objects. Though the functionality of my work may appear to take a backseat to the formal qualities, it is actually incredibly important that my work is genuinely useful and not merely an aesthetic expression. As a designer who is very form-driven, this creates a significant challenge. In order to check both boxes, I find myself having to make certain sacrifices; often the level of functionality is what gets compromised. This challenge, to find an appropriate balance, is an exciting one and often alerts me that I’m onto something promising. Ultimately where I fall short is knowing when to zoom out, when to let go, and when to pull the trigger on a piece that is in danger of being over-designed.
Despite the shortcomings of my form-guiding-function approach, it has proven to be an incredible asset in terms of idea generation and discovering hidden potential within an unassuming component. With the form-first approach I often don’t have a clear target I’m trying to hit. By holding my expectations for the end result loosely, I have the freedom to accept and explore whatever discoveries may fall in my lap. If I begin with a clear target, I may quickly dismiss an idea that doesn’t align with my goal, but by allowing the target to remain fluid it gives me the freedom to explore solutions I otherwise never would have known to look for. This freedom often results in unexpected innovation.
Though I feel many of my obsessive behaviors and compulsive thoughts are a result of my neurological “miswiring”, I have become increasingly aware of how often similar eccentricities show up in others despite the fact that they don’t have Tourette’s or OCD. Though we all display these tendencies in vastly different ways, I believe each of us have an innate desire for order, symmetry, balance and efficiency. As a result, I often feel that my work satisfies a craving that people may not even know they have.
From a psychological perspective, symmetry, for instance, is a fundamental principle for visual organization. Gestalt psychologists began recognizing the importance of symmetry in visual perception and discovered how significant a role it plays in face recognition, perceptual grouping, pattern recognition, and distinguishing living organisms from inanimate objects. These methods of organization and visual perception allow our brains to expend less energy and essentially run on autopilot. This explains why our brains are hardwired for stereotypes, biases, and even self-delusions, allowing us to make snap judgments rather than stopping to contemplate the advantages and disadvantages of every decision we make. Our brains naturally organize chaos into order which ultimately allows us to expend the smallest amount of energy possible.
Externalized | Resonance

Orbit Table Lamp
Biophilia is another area of study which offers additional perspective on our inherent affinity for the order and form found within the natural world. For much of human history, people’s everyday lives were closely linked to nature; we developed in response to the environmental forces acting upon us. We survived by responding quickly to threats and opportunities and developed a broad knowledge of plants, animals, landscapes, and other ecological cues such as light, weather, and organized complexity, which increased safety and security. Though fear and a need for protection ruled much of our lives, we were also driven by our aesthetic attraction and emotional connection to certain elements of our natural environment. Even today this is reflected in our capacity to appreciate beauty in nature and sense the underlying order in the world. It is this ingrained desire that drives us to project and symbolize nature in the built environments and objects around us.

A component often considered in Biophilic design is the balance between order, organization, and complexity. Complexity indicates that an area is rich in detail and diversity, whereas organization is the systematic arrangement of objects in a logically structured environment. In complex environments, one can presume that there are ample resources and opportunities available whereas a featureless environment will typically have a lack of resources and is often experienced as monotonous and dull. Additionally, exceedingly complex environments often lead to confusion and discord. Complexity requires order and organization to make it more accessible and understandable, and we have evolved to see the value in this balance.

Considering the way nature has evolved and how we have fit into that process of evolution, it’s no surprise that humans find beauty in the natural order of things. In order to survive and thrive we adapted to see our natural surroundings in a particular way, which has directly played into our aesthetic preferences that remain with us today.
"Perhaps in asking why the pervasive symmetries in nature are found appealing to the human mind and imitated in our human made constructions, we are making an erroneous assumption between our minds and the remainder of nature. Perhaps we are all the same stuff. After all, our minds are made of the same atoms and molecules as everything else in nature. The neurons in our brains obey the same physical laws as planets and snowflakes. Most important, our brains developed out of nature, out of hundreds of millions of years of sensory response to sunlight and sound and tactile connection to the world around our bodies. The architecture of our brains was born from the same trial and error, same energy principles, same pure mathematics, that happen in flowers and jellyfish and higgs particles. Viewed in this way, our human aesthetic is necessarily the aesthetic of nature. Viewed in this way, it is nonsensical to ask why we find nature beautiful. Beauty and symmetry and minimum principles are not qualities we ascribe to the cosmos and then marvel at in their perfection. They are simply what is. Just like the particular arrangement of atoms that make up our minds. We are not observers on the outside looking in. We are on the inside too."

Alan Lightman
The Accidental Universe
Equilibrium

Though my drive to create balance and harmony has been central to developing my own aesthetic, it also has had a tendency to be overemphasized in my work. This is particularly true with respect to symmetry. Having such a strong inclination toward order, balance, and symmetry, I often fail to put sufficient thought toward disorder and the significant role it plays. I tend to see order and symmetry as the be-all and end-all of my work, and perhaps I’m overlooking the ways the inverse idea can help bring life to my work. When creating work that is entirely symmetric or has identical repeating components, the person engaging with the work has nothing to discover. The piece can be understood at a glance, which doesn’t mean it’s not beautiful or useful but it misses an opportunity to incite the pleasure of experiencing something unexpected. Though this may be permissible for an individual piece, it’s amplified when an entire collection falls into this trap. It becomes dull, monotonous, leaving very little to delve into deeply.

Because of the personal nature of my inspiration and its inward stance, all of my work tends to have a cohesive quality about it. It becomes a physical representation of what is happening internally, which by nature creates a great deal of consistency from one work to the next. In terms of producing work intended to exist as a collection, this becomes a significant benefit, allowing me the freedom to explore, experiment, design and create without fear of the work being mismatched.
Orderliness will always be fundamental to my creative vision, but the stretching and breaking of my own rules will also allow me to push my work into realms that lead to discovery, challenging my existing ideas. Art will often include small departures from symmetry, something that has been shown to achieve a higher aesthetic satisfaction. Although human beings have a strong psychological attraction to order, perfect order in art often lacks visual interest and falls into monotony. It becomes apparent that visual delight lies somewhere between boredom and confusion and a balance must be struck between monotony and visual overload. When striking a balance between asymmetry and symmetry, it’s significant that they can only be defined in relation to one another. Symmetric details are often most effective when superimposed over an asymmetric background, and vice versa. This idea is true in our art, architecture, and environment as a whole. Asymmetries and symmetries must exist in conjunction with one another to offer the variety and order that we are drawn to.

In the natural world, disorder is ultimately what increases efficiency within an ordered system. In the evolutionary process, mutations serve as a driving force behind the adaptability of an organism within a given environment and determine how that organism will fare with the process of natural selection. This randomness is largely responsible for life on earth as we know it.
As I consider the definition of chaos, it’s hard for me to believe it really exists in my work, or that I even want it to. Maybe my work is entirely order-based and leaves no room for randomness. With this lack of complexity, maybe it lacks that spark that is created when order and disorder strike a balance or when a small anomaly breaks an otherwise logical system. As I’ve continued to wrestle with this notion of chaos I’ve realized that my own definition of the word might be entirely different from others, or maybe I’m using the wrong word entirely. Everyone has a different scale for what they consider chaotic, and I think for me it might not look the way others would expect. Something I admire in the work of others is an element of discovery. This could be considered as a moment of “chaos.” Just when you think you’ve seen everything a piece has to offer, you find that subtle detail that makes the search worth the effort.

When observing moments of chaos in the work of others, I find it most effective when the chaos is contained in some manner. Yes, there are moments of unexpected detail, texture, or movement, but it occurs within a contained space, offering a direct physical representation of the coexistence of chaos and order. The work of contemporary artist and designer Steven Haulenbeek comes to mind as someone who strikes this balance quite effectively. Particularly in his RBS Side Table #1, the juxtaposition between the smooth rectilinear exterior and the carved texture on the sculpted interior creates a level of dynamism that wouldn’t exist if the form was entirely crisp or entirely carved. He manages to contain this texture within the outer shell and in so doing he gives insight into how the piece was created. A more historical example is Donald Judd’s Untitled 1963 piece, which is a red, extruded form with a half-cylinder removed. The purity of the rectilinear form is broken but still remains within the given frame. These examples and countless others help me further refine my own definition of chaos and allow me an opportunity to consider how it can be represented in my work.
The chaos, or variable factor in a majority of my work revolves around the person interacting with it. As the designer, I work to develop a framework or system within which an object can be used and experienced. With my kinetic and interactive work, the user has the ultimate say in how an object or piece of furniture will be displayed, arranged, or assembled. With Coil Bench, for instance, the system is closed, with infinite possible configurations, but only because of a single variable. The same is true of the Tilt Sconce where the user can orient the direction of the surface however they please but it will never stretch beyond a given set of parameters. The Stack Shelf, Twist Table, and Slot Shelf, on the other hand, leave more room for discovery, which starts to get at my personal idea of chaos. I have designed each of these objects to be assembled and used in a particular way but, because of their built-in flexibility, I cede control of how the pieces may ultimately be used and assembled. Rather than gluing the triangle legs of the Twist Table at just the right angle, I’ve left it in the hands of the user to install the legs to their own level of precision. One of my greatest joys as a designer is seeing people interact with my work and discover configurations and layouts that are unique to their way of thinking and that I may have never considered.
I see my work living in homes with children, being scribbled on with crayons and pounded with a plastic hammer. The pieces aren’t on display in a living room where nothing can be touched. They’re in use daily, gathering the dirt and grime that all functional objects should, and unapologetically showing a patina of use. They’re meant to be arranged, rearranged, configured, and reconfigured. By building a bit of openness into a design, it allows the user to connect with an object on a deeper level than if they were interacting with something that was fixed or determined.
This “chaos” or interactive component has been a recurring theme for as long as I have been designing and making work. Have I mastered the ability to weave chaos and disorder into my work? Certainly not, and I need to continue challenging myself in this area. However, I do believe that this chaotic element is present and is worth continuing to explore in its current form.
Conclusion

I’ve always found it difficult to hone in on the driving force behind my work. For so long I’ve made what I felt I needed to make, allowing my subconscious to inform my decisions and never questioning it beyond that. My work was highly considered, but I would have found it nearly impossible to verbalize those considerations. Developing a deeper understanding of my internal and external motivations was a primary goal for graduate school and this thesis was a culmination of that pursuit. Through my work and writing these past two years, I’ve gained new insight into why I think the way that I do and in what ways my thinking differs from others, which has allowed me to continue pursuing work that is uniquely expressive. In developing this deeper understanding, I’ve discovered which aspects of my work are effective and which are less so.
As I consider my own successes and shortcomings as a designer it becomes abundantly clear that it will never be a solution to scrap a significant portion of my outlook or my approach to pursue something different. My approach and outlook are a part of who I am. They are consistent with how I see the world in every moment, not just in a design context. Moving forward, I intend to take this framework that has been developing throughout my life and continue refining my approach and challenging my way of thinking. This is not a pursuit that has an endpoint, rather it is a process of seeking to better understand myself, the way I interact with the world, and ultimately how I can use my individual perspective to create work in the most effective way possible.
Bibliography


1. In mathematics, a developable surface is a smooth surface that can be flattened onto a plane without distorting (i.e. stretching or compressing). Conversely, it is a surface which can be made by transforming a plane (i.e. folding, bending, rolling, cutting, and/or gluing).

2. An olloid is a three-dimensional curved geometric object that was discovered by Paul Schatz in 1929. It is the convex hull of a skeletal frame made by placing two linked congruent circles in perpendicular planes, so that the center of each circle lies on the edge of the other circle.

3. In the study of perception, Gestalt psychologists claim that perceptions are the products of complex interactions among various stimuli. Contrary to the behaviorist approach to focusing on stimulus and response, Gestalt psychologists sought to understand the organization of cognitive processes.

4. A majority of this information is pulled from Alan Lightman’s book, The Accidental Universe, also listed in the Bibliography. If this section is of interest to you, be sure to give this book a read.

5. For more information on Biophilia and Biophilic Design, Stephen Kellert’s book, Nature By Design is a wonderful reference.