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Market Adapted Furniture

by

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A Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Fine Art in Furniture Design

School of American Craft
College of Imaging Art and Sciences

Rochester Institute of Technology
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Abstract

The furniture market as a whole can be broken into three discrete markets. These are the custom or one-off market, the limited or batch production market and the manufactured or mass production market. Each of these markets poses different design challenges based on many changing variables including cost, method of production and distribution.

Normally these furniture sub markets exist with a certain amount of separation within the larger market of furniture. The clientele tend to be very different and the companies or people that make the furniture tend to be relatively specialized. Because of this significant separation, it is very difficult to experience all the furniture markets in the span of a career.

This thesis proposal is to look at furniture and all its sub-markets with minimal separation. I will do this by building at least three full size prototypes and developing each one for a different market.

One of the goals will be to maintain the conceptual and aesthetic sensibility of the initial prototype while adapting the design to address the requirements of each different market. The requirement of making two generations of each piece will make the entire process stronger and provide an opportunity to truly revisit a piece in a way I have not yet experienced.

The design processes and finished pieces associated with each market will be compared to one another analytically. This will ideally result in additional insight into the differences between each and the effectiveness of my design decisions and processes. The analysis will be aided by written and visual documentation taken throughout each phase.

The main goal will be to gain a unique perspective and appreciation of the demands of the furniture market as a whole. However, it is also my intention to thoroughly prepare myself for a broad range of employment opportunities post graduation.

Research

My research can be broken up into a number of different categories. Primary research, where I have observed the inner workings of furniture shops ranging from one-man operations to large scale manufacturing facilities. Secondary/market research where I have studied the offerings of a large range of the furniture market via the internet and publications. Finally experimental research where I am studying the benefits of different design strategies as they relate to building furniture for different markets.

My primary research has spanned my time at RIT. I have had the opportunity to look in depth at furniture makers serving all three of my markets. The majority of the furniture makers I have observed tailor their work to the custom market. I have had the opportunity to visit the facilities of Wendel Castle, Jim Turner, Plukas Furniture and Will Tracey among others. These represent a very diverse group, which can be attributed to the nature of their work, which by necessity all has its own unique individualized character.

Custom furniture in part relies on the unique individual nature of each maker's style as a selling point. The craftsman's style adds perceived value to the work and makes it feel special. Wendel Castle, for example, has become known for his stack lamination work that is very expressive and flowing. This has found a significant following in the world of fine art. In comparison, Will Tracey has a much more reserved and architectural style with a high level of fit and finish. His work has become popular with interior designers and art directors for use in-high-end corporate settings. They both have a very notable and individual character to their work-contributing significantly to their success.

I have also visited two makers working in the limited production market: John Byers, who produces the JEB JONES furniture line, and Bella Designs, which produces small batches of furniture and related items. These two operations could not be more different yet this contrast offers interesting insight into this market. John Byers began his career exclusively building custom furniture but over the years has found it in his best interest to start his own small production line. He has been transitioning his business

to focus more heavily on his products as a source of more reliable income. However, he still operates out of a small one man shop in Ithaca, NY producing everything himself.

Bella Designs, while having similar roots in custom furniture, has followed a slightly different path. They have developed a clientele over the years that have steadily pushed them to invest in high-end computer control machines and finishing facilities. This clientele now contracts them to produce batches of furniture objects in very much an assembly line fashion. The objects move from station to station through an array of specialized workers.

In the realm of manufactured furniture I have also visited two very different companies. The first company was Knoll Furniture in East Greenville, PA and, more recently, Thomas Moser in Maine. My visit to the Thomas Moser facility has expanded my understanding of what is possible in a manufacturing environment. Working in ways very much rooted in traditional woodworking practices and supplemented by modern technology they have an amazingly flexible production ability that can accommodate designs across a wide spectrum of production levels and price points. Such production flexibility would not have been something I thought possible before my visit.

Market research has come into play in two ways. First, as a broad investigation focused on defining relevant companies producing furniture at different production levels and analyzing their offerings based on price, production method and distribution. The second type of market research has been focused on market information directly relevant to the development of the individual pieces.

The broad market research has been as part of an effort to develop design restrictions for myself that represent real constraints to companies serving the different markets I have defined them. I first identified a list of companies that are making furniture for these different markets. I then created a spreadsheet that cross references the retail price of comparable furniture archetypes, distribution and apparent attributes.

The focused market research aims to inform the actual furniture pieces in a much more direct way. While the broad market research addresses market wide variables, the focused research addresses the specific visual, structural and practical elements of each piece. By finding either whole companies or just individual furniture references related to the piece being built decisions can be made about that piece in a much more informed fashion.

The experimental research I have undertaken has focused on different methods of prototyping and how these methods inform designs for different markets. I first tried a highly detailed representational scale model. This was very useful for relaying the concept to others as well as for assessing design variations. However the level of detail to which it was executed was perhaps excessive. The investment of time was high relative to the return.

I also developed a written order-of-operations document, basically a written outline describing each operation of the build process in sequence and relating these operations to a visual representation of each feature or element being created. I have, in the past, drafted schematics which describe an object and its features for production, but this was different. Although they may have alluded to it, those schematics did not go into specifying the exact operations necessary for construction. This was an interesting document to have around for the build process because not only did it keep me on track but it also was easily edited and streamlined along the way.

My experimental research has also delved into the use of full scale or “first generation” prototypes. The use of these prototypes allows me to experiment in a very detailed fashion with a number of different elements. For example, the prototypes can be used to test methods of production, material and finish options and, of course, aesthetic attributes. This also provides an opportunity to evaluate how useful or rewarding full scale prototyping is in reference to each market.

Critical Analysis

One of the main shifts in understanding during the completion of my thesis has been the connection between production scale, retail cost and production/design restrictions. At the outset of my thesis work, I was under the impression that there was a somewhat straightforward and defined relationship between these variables. This perceived relationship was partially the impetus that led me to investigate furniture's three sub-markets. This relationship, while real, is much more variable than I previously believed.

This shift in understanding has been most affected by my primary and secondary research. In my primary research I have repeatedly been surprised by the way furniture makers blur the lines between the markets. They accomplish this either by offering a diverse selection of furniture that serves many markets or by offering furniture that doesn't succinctly fit into the definition of one market. The original definitions of the three furniture sub-markets held that the lower the retail cost of the furniture the higher the production numbers and the more stringent the methods of production. It is now clear that this relationship between production numbers/methods and retail cost is far from linear.

As part of my secondary research, I searched for furniture examples from a wide range of companies that were comparable on a visual and structural basis. In many cases I found examples of furniture made by different companies with similar visual and structural elements being produced in a variety of production levels and marketed at drastically different retail costs.

Thomas Moser changed my understanding of production. Their methods of production are rooted in traditional woodworking and maintain that high level of complex craftsmanship. However, they have adapted into a manufacturing facility producing a large volume of product. Not only do they use production methods that are challenging to implement in a mass production but they use the same facility to also make limited production and fully custom work.

I attribute the gaps in my original understanding of the furniture market to two market realities which I did not fully appreciate. The first is the degree to which the differential between the production cost and

the perceived value of a given piece of furniture can vary. The second is that I realize now that my knowledge and understanding of what is possible in terms of methods of production is still fledgling.

My experimental research has lead to a real appreciation for the value in having the time to develop an accurate full-scale prototype. Too often a very successful piece of furniture can still be a candidate for significant design development. It is very rare, however, to to be able to justify the time to revisit that piece of furniture. The opportunity to do just this in my thesis has been very rewarding and it has given me a terrific context which I can use in the future to judge if a design in fact deserves to be revisited.

As part of this thesis, I have been lucky to have a range of success with my prototypes. The success of a prototype is gauged not only by its visual and structural attributes but also by what insight it provides into the entire process and, in this sense, the success of the prototype is defined by how much I am able to learn.

By this measure my first full scale prototype, a coffee table designed for limited production, was not the most successful. It was preceded in the design process by a highly accurate scale model and a detailed written analysis of the build process. Using both the model and the analysis, I had already learned much about the aesthetics and logistics of the piece before I began the full-scale prototype. In full scale, I did experiment with a new material (Douglas Fir) which was very informative. The end result, however, was that this prototype was only informative in a few select areas in that it allowed me to learn a lot about the positives and negatives of Douglas Fir as a material. I was also able to confirm the structural integrity of the design. I did not, on the other hand, learn very much about the build process, which was well thought out and proved, in practice, to be straightforward. Similarly, there was little learned about the aesthetics because they had been pretty well vetted through a number of methods earlier in the design process.

The second full scale prototype, a public bench designed for mass production, was much more successful in offering insight into almost every aspect of the piece. This is attributed to the fact that the

design of the second piece called for production methods that I was far less familiar with. This not only allowed me to learn more throughout the entire construction process, but it also aided me in continuing the design process while building the prototype. I was able to both make changes on the fly to the prototype itself and to plan for the more significant changes I wanted to make in the second generation.

One example of an unexpected change made on the fly was the decision to skin my second prototype inside and out with fiberglass. This decision was based a determination made during the build process that the prototype needed to be strengthened. Fiberglass, when used in the correct fashion, is very strong and also very durable. This durability of fiberglass was a significant advantage because it was a much desired design trait developed during the original design process.

This on-the-fly design change not only improved the first prototype but it also informed the second generation piece in an unexpected fashion. After going through the process of working with the fiberglass, I became more familiar with it as a material. Based on this new experience, I decided that there was a more direct way to deal with the durability and strength issues of the piece. I did this by improving the original under-structure of the piece so that it would suffice without the addition of fiberglass. I also applied a layer of plastic laminate to the outside. This removed a number of additional build steps required by the fiberglass but still provided the durability required.

The prototype for the one-off piece, a small task chair, deviates a little from the previous two pieces. For this part of the thesis I chose to revisit a piece I completed prior to my thesis year. There were a few reasons for this. The first reason being that since its completion I have felt that this chair needed to be revisited with a second generation. It was such a strong piece but just barely missed the mark in some of its aesthetic and ergonomic details. The second reason for revisiting an older piece was that it would be a very different experience doing the second generation after a significant passing of time (and knowledge gained) since completion of the first chair.

Conclusion

Since its conception the goal of my thesis has been to look at furniture in a broad manner. Part of what I hoped from the outset was that this broad approach would allow me to learn about the furniture market as a whole. In addition, I also hoped it would provide me with the opportunity to learn new and unexpected information and techniques.

There is no question that I have learned a lot about the furniture market most of which has led me to change my perhaps slightly naive views about clearly defined sub markets. The furniture market is much more complex than that and not so clearly definable. So many furniture companies are operating in ways that do not fit neatly into the categories I originally outlined. At first this was slightly daunting but it has become interesting. Interesting because it is the unique quality of all the different furniture makers that make the market as a whole so complex.

The furniture that has resulted from the thesis has been very fulfilling and informative. I never could have predicted at the outset that building every piece twice would be such a joy. It allowed all of the second generation pieces to be very strong and well thought out. Conversely, having the knowledge that the first generation pieces were just prototypes freed me to be much less conservative. At times, the knowledge that the simplest of decisions can be catastrophic to the outcome of a piece can be stifling. This is especially true if you know you only have one chance to get it right. What I discovered in the use of prototypes was that I was freed of that anxiety because I could say “its just a prototype” and know even if the worst happened I would have another shot at it. Surprisingly, this carried over to the second generation as well because I had the confidence, born from the experience of having done it once already, that I would not screw it up.

There is also a balance to meet with a full scale working prototype that is delicate and interesting. While it can be slightly looser because “its just a prototype” it still must ultimately function as a proof of concept. In that balance exists a mode of working that for me is quite enjoyable. This has actually made me consider applying for model making/prototyping jobs after graduation.

The success of the second generation pieces has been mixed just as it was with the first generation. Obviously how the second generation pieces are judged as successful is different than the first. I actually think they need to be assessed from two different viewpoints. The first viewpoint is how the second generation stands up as a reaction to the first. The other viewpoint is how it is as a stand alone piece in isolation from the first generation.

The second generation coffee table was in my estimation a very good reaction to the initial piece. It addressed issues of aesthetics, usability and marketability defined in the first generation to good effect. However as a stand alone piece I still find it slightly lacking. It was meant to be a bold powerful piece yet it still comes across as slightly mundane.

In contrast to the coffee table, the public bench is more successful as a stand alone piece than it is as a second generation. There were key issues in terms of construction, strength and aesthetics that had to be addressed from the first generation. While the construction and strength issues were adeptly dealt with in the second generation, the aesthetic was lost. The aesthetic of the first piece was very clean and compelling. These aesthetic characteristics were intended to be carried over into the second generation. While the second generation piece is still an attractive piece it has lost some of the character of the first.

My last piece, the second generation task chair, has, in my estimation, been the most successful. This can be attributed in part to the very strong foundation provided by the first generation piece. The goals of refining the small aesthetic details and ergonomic shortcomings of the first chair were achieved without affecting the character of the original piece. I wanted to create more continuity between the cross sectional shape of all the chair's individual members. I was able to achieve this as well as some ergonomic improvements via alterations the chair's geometry. This was all done subtly enough to maintain all the valuable character of the first generation.

My thesis has brought many realizations that in fact contradict some of my original posits. However, I

feel that the thesis work actually benefited from this and has led to a far greater learning experience than I ever would have expected originally. The structure of the multiple generations that was originally incorporated into my thesis has likewise led me to an understanding of process that I did not originally possess.

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