Interaction and Motion

Reagan Furqueron

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Rochester Institute of Technology

A Thesis submitted to the faculty of
The College of Imaging Arts and Sciences in
Candidacy for the degree of Masters of Fine Arts.

Interaction and Motion

By

Reagan Furqueron

February 1, 2004
Approvals

Chief Advisor: Andy Buck
Date 4/26/04

Associate Advisor: Roberley Bell
Date 4/26/04

Associate Advisor: Richard Tannen
Date 4/26/04

Associate Advisor: Leonard Urso
Date 4/26/04

Chairperson: Michael Rogers
Date 4/27/04

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Thesis Statement

The purpose of this thesis is to explore the possibilities and opportunities that occur when the element of movement is included in the design of functional objects. There is an inherent quality of interaction in functional objects; my goal is to enhance this relationship between object and user. Through this I will pursue the investigation of portability as it applies to objects in domestic settings. By incorporating elements such as handles, wheels and other hardware that suggests movement, I will make functional objects that invite interaction resulting in motion. Likewise, by introducing motion, I hope to further encourage interaction. These hand-powered pieces will be made of wood, metal and found objects, finished with a variety of surface treatments. With this new body of work, I am committed to the gestural qualities that have become increasingly present in my previous design work.

Interaction- Emotional and Physical

For this thesis I am defining interaction in two ways, emotionally and physically. The emotional is wrapped in the presence of the piece while the physical is how we interact through motion. Working simultaneously in my work, these qualities will lure the viewer to approach and interact with the piece.
The emotional interaction is triggered by the visual vocabulary of the work. This vocabulary bases itself on color, whimsical gesture, shaping and the addition of wheels and handles. The look and color of this work is unusual for functional objects and has connections with toys and playthings. It is that association which brings the viewer in to closer examine the piece and to potentially interact with the work.

The physical interaction is based on real motion and deals with the maneuvering of carts and other wheeled objects as well as opening and closing of doors and drawers. This interaction is represented differently in each piece. For instance some of the pieces act as carts, actually replacing some of the users effort, while others have less obvious and unusual interaction allowing the user to access the function of the piece. These elements of movement further enforce interaction by giving visual clues to the function of the pieces.

Formulation of Ideas

In my search for answers, I was drawn to two interrelated directions. The first was adding obvious moveable and physically interactive elements to objects such as wheels and handles. This approach is based on real movement and utility. The second direction was to use these same elements to enhance the existing movements we encounter and create in our relationship with objects, that is the opening and closing of doors and drawers, etc.

I began by referencing hand powered utility vehicles such as carts and the emotional response we have to them. My thoughts were that these pieces be based on real movement and function as portable furniture. For me, the lure of all moveable furniture is
the method of moving and steering of the object, in many cases wheels and handles. Both wheel and handle hold an emotional response, the mere sight of a wheel suggests movement as the handle suggests utility. This would be the concept I would begin the work with.

These ideas stemmed from a statement by Edward Lucie-Smith, which helped reinforce the idea of portability and change.

“*The whole notion of the domestic interior as scenery for a play which we make up as we go along, and therefore pieces of furniture as components in a constantly shifting and capriciously altered three dimensional collage...*”

This helped me begin to define how our changing lives are affected by our domestic surroundings and vice versa. Having the convenience to alter our environment with ease as our lives or emotions change would fit into this theme. I began by adding elements of movement and handles to my work thus reinforcing this idea more clearly.

After exploring this direction in two actual pieces, I came to see that my approach was merely being added to furniture, not fully integrated within the concept. Because of these varied levels of success, I began exploring some of the natural interactions we are always having with furniture- opening doors, pulling out drawers, etc. By adding elements of movement and handles to highlight this natural interaction, it could reconfigure how we actually interact with furniture. I furthered this by questioning the ways we access, approach, or engage these objects. I also thought of different ways to view furniture in our environment. What if the pieces, through movement, created a

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presence by activating the area around them? The addition of movement would highlight this relationship and enhance the lure to explore the work.

Goals and Objectives

Throughout my investigation I have been striving not only to enhance interaction and motion but also to address multiple issues regarding my process. Issues ranging from my style and the way I work came to light as finally needing attention. While the success of these underlying objectives varied, I thought them important to strive for in this endeavor.

My main issue has been to build this body of work in a style that is representational of the character of my sketches. While pursuing this objective, I wanted to make pieces that were cohesive in craftsmanship, function and finish. This sketching style is based on the visual vocabulary I have been developing in my design process for some time. It can be described as gestural and animated and as stated, relies heavily on color and shaping. Most of the work in this style has lightness to it, a leggy feeling, something the final work failed to convey. This sketching approach takes nothing into consideration during the process and allows me to come up with ideas unedited and without regard to their success. It was this quality that was being designed out of the piece during the technical drawing stage. By eliminating technical drawings and approaching the material in a looser way, I attempted to capture this lighter style in the final piece.

Though the decision to address this issue was made, it was not an easy one to adhere to because it created risks with the material during the shaping process. Structural
issues dealing with my material of choice, wood, fueled these fears. Since I was literally sketching with the material as well as working with little or no preplanning, these pieces came to be physically at risk. It was only through this risk that the character was captured.

Along with embracing this sketching vocabulary through shaping, the color would also enhance this lighter character. I had been using paint and other pigments in my previous work and felt it an appropriate solution for this endeavor. While also in the sketching stage, I would begin to add color to the drawings, translating this into the final piece. By using color in this way, it would not only enhance a work’s animated character but also draw an emotive response. By using graphically applied color and pattern, I was able to highlight the undulating surfaces, thus enhancing the work into the character style I sought.

While objectives that deal with the work/process were important, others were critical to the success of my personal struggle as an artist. As an object maker, I have had problems during the building process, a start/stall method of working. This has caused problems in the past and has been carried into this thesis process. I felt it time to fully examine the source of this problem and begin to instill some healthier working habits.

In seeking to modify my building process, I began to create exploded drawings, which helped me visualize the parts necessary for completion of the pieces. This allowed me to schedule the steps of building, breaking down the construction into separate categories such as milling, joint cutting, assembly and finish. I was then able to focus on the individual parts of the project, not getting overwhelmed by the entire process. By
making this method change a priority, I am beginning to develop ways of solving this problem, thus slowly affecting my building process in a positive way.

Influences

While there is an obvious connection to hand powered utility vehicles, other artists who explore the concepts of movement also influence my work. Each of furniture makers, sculptors and illustrators has informed my work differently through method and conceptual approach. By examining the strengths and weaknesses of their approaches, I was able to formalize my own vocabulary to work through this process.

Tom Loeser

The work of furniture maker Tom Loeser has been influential in my development of ideas and direction. The main inspiration lies with his Roller Series (plate 1). These blanket chests, in which the chest rolls out and the lid stays stationary are fascinating to me on several levels. First, Loeser’s work “… is a drastic alteration of a familiar form that asks us to reconsider that forms usual properties.”2

He has taken a historical furniture form and rethought it. From this idea I too have begun to reexamine not only objects, but also how we approach and get into them. Examples of this are seen in Wall Wheel Box (plate 2) and Wall Box 2 (plate 3). By reconfiguring how we open these boxes, in this case pushing up a handle or rolling a lid down a wall, I am forcing the viewer to also rethink the interaction.

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Next is Loeser’s use of movement to perform this task. He is not only activating the piece but also the area around it. [His] work suggests a discontentment with the passive role of a standard wall-bound blanket chest.1 Through pieces like Rolling Table I (plate 4) and Rolling Side Table (plate 5), I too have activated, the object and the environment around it. The 360-degree pivot action of Rolling Table I is restricted, but still defines the space it occupies through motion. In Rolling Side Table the user maneuvers the piece to the desired location and wheels out the drawer, activating the piece and the area around it.

Finally Loeser uses color to visually activate and add a sense of play and emotion to his work. “Color is employed as well, to conjure up a mood and suggest associations.”2 This can also be seen throughout my work and has attachments to the emotional content of this thesis. This, coupled with the intrigue of motion is akin to Loeser’s work. Like Loeser’s viewers, I want my viewers to respond to my work through acts of curiosity and intrigue.

Emi Ozawa

The ideas and influence of Emi Ozawa can also be seen throughout this body of work. “Through attractive colors and moving parts [Emi] suggests play and evokes curiosity. She invites you to enjoy her work through hands on participation—opening doors or drawers, turning latches, folding and unfolding panels.”3 Like Loeser, her work begins to question the very nature of how we access functional objects. She deals with

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this by adding wheeled items that roll down to open doors, or the movement of a lever to activate the function in a piece (plate 6,7). It is this sense of curiosity that I seek to awaken in my own work. I feel this is achieved most strongly in the wall box series. These toy-like boxes are the most welcoming of my work and act to bring viewers in for a closer look.

Ozawa’s use of color finalizes the emotional qualities of play and curiosity she is after in her work. This emotional connection to color is also found within the visual vocabulary of my work. Her graphically applied color schemes, much like mine, are the first thing that brings people into the work and are also what brings the piece together.

Allen Wexler

By challenging the static nature of immobile objects, Allen Wexler has offered inspiration in the area of movement and portability. His approach is achieved through the addition of physical movement to objects, addressing our need to adjust and control our surroundings. In The Mattress Factory Gallery Residence (plate 8) Wexler demonstrates this theory using an adjustable living room-bedroom scenario. By rolling the bed/sofa through a wall, which separates the two spaces, residents can create a variety of sitting or sleeping arrangements as the mood or necessity sees fit.

I use a similar approach in Rolling Table 2 (plate 9) and Rolling Side Table enhancing the portability of the standard table unit. With the addition of wheels, these tables can now be rearranged with ease as the need or environment calls on them to. This portability also begins to change the function of Rolling Side Table; the wheels act not
only for convenience of movement but also the method to access the drawer. Through these examples, I have sought to convey some of Wexler’s concepts within my own work.

Rube Goldberg

The illustrated themes of Rube Goldberg’s illustrations are ones I am influenced by to achieve an element of surprise in my work. In Goldberg’s work he depicts fairly simple tasks being executed through multiple bizarre steps. In Professor Butts, taking his morning exercise kicks himself in the nose and sees a simple idea for cooling a plate of soup (plate 10) the task of cooling a plate of soup is finalized through fifteen steps. It is not that I want so many steps in the interaction of my work, but to evoke humor in figuring out and using of the piece.

I see many of my pieces bordering on objects of play and think that brings forth the curious nature of even how to interact with them. Goldberg’s themes hold true to pieces like Rolling Side Table and Wall Box 2; pieces that question how we access furniture. I like the aspects of being visually curious about the pieces, approaching them to see the mechanics and figuring out how to use or get into the object. During the show as I watched the surprise of people interacting with my work, I did not view fifteen steps, but I did see a reexamination of how they interact with the pieces.

Body of Work

Through my work I intended to blend these stated ideas, goals and inspirations into final pieces. Having viewed the body of work as a whole has helped me identify the
similarities in the strengths and weaknesses and how the work evolved. Using this approach I was able to physically and critically describe the work.

A natural evolution occurred in regard to issues within each piece based on the needs of the previously made pieces. Though this evolution was an active process, I still constantly addressed certain issues while others remained unchallenged. Decisions to make the work conceptually and visually interesting continually caused problems in the areas of function, mechanics and material choice.

Rolling Table 1
poplar, milk paint
34” x 19” x 35”

_Rolling Table 1_ was my first attempt at combining motion and interaction into a piece of furniture. The table consists of two wheeled legs that visually grow down and out of the tops organic shape. A third element coming down from the top is the base, which acts as both pivot and stabilizer. The base support is sectioned, allowing a pivot insert to act as the movement for the piece. Extruded from the top is an over- exaggerated handle that, by its smooth form and surface treatment, asks to be engaged. The piece is painted with blue, black and white milk paint. The paint and pattern are graphically applied and along with the various incised lines wrap the piece, accentuating the organic form. Using a cart-like vocabulary, it was my intent to instill a sense of portability while luring the user in with the over accentuated handle.

The concept for this piece reflects restricted movement. The table is confined to a 360-degree range of motion, activated by the handle. Conceptually the work derives from
two sources, Tom Loeser’s *Roller Series* and an architectural study by Allen Wexler⁶, both of which deal with confinement and repetition of movement. Loeser’s pieces can only pivot in a circle and Wexler’s study documents the restrictive movements of our interaction of chairs.

*Rolling Table 1* deals with these issues by “revers[ing] the static nature”⁷ of tables and documents this new movement. By creating a table that moves in a circle I am giving motion to a normally stationary object. The recording of that movement is accomplished by leaving circular marks and grooves on the floor.

Though the concept of this table is interesting other aspects suffer. Though produced without technical drawings, the character is still too static when examined against the sketchbook. Wood was an appropriate choice for this project but it could have been pushed further to help better reveal the character.

The mechanics of this piece also fall short of my expectations. Though people do approach and touch the work, they are rarely encouraged to wheel it around. If indeed it does inspire them to interact, the mechanics of the piece are awkward and the action is failing. Despite the research and use of bearings the wheels are not sophisticated enough to work correctly, left only to be feet for the table.

Finally, I also recognize the painted surface does not do enough to enhance the concept. Though this finish accentuates the piece, it seems an after thought and though not inappropriate, it does not complement the form. While this piece is riddled with aesthetic and technical problems, the idea does merit further investigation as it leaves me with much information and experience to draw upon.

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Rolling Table 2
mahogany, milk paint
37” x 23” x 34”

Again using the cart as reference, Rolling Table 2 further explores how we interact with furniture through portability. Reacting to the issues of the first piece, I sought to have this table overcome those weaknesses. By pushing the shaping of the material I began to see the essence of the sketchbook appear in the work. I also began to work on the maneuverability of this piece, but found that this pursuit began to conflict with the aesthetic areas of the work.

This quirky piece is organic in form and reflects visuals of plant life. The color scheme of lime, salmon and blue also reinforce this aesthetic. It consists of four legs that terminate to wheels, three of them by way of forks. The fourth ends with a double wheel isolating it as the method of steering. The tabletop, also organic in form has small handles that appear to grow out of the legs by way of recessed areas. The largest of these handles acts as a steering element to the leg that houses the double wheel.

The design of this table emerged as a serving cart to be easily maneuverable, but this, along with portability fail. Though the wheels visually reinforce the concept, the idea is questioned because they do not function properly due to the legs instability. I began to find that by pushing the aesthetics the function was compromised. By trying to shape thin legs, I negated the ease at which the piece could roll.

Though form and function are conflicting, I see this as a more successful design than the previous piece. By capturing the essence of the sketch, I felt it was a major
breakthrough. Through this piece I am beginning to reveal my own aesthetic, but for it to be fully realized, material research is in order.

Rolling Side Table
mahogany, white oak, milk paint
16” x 13” x 25”

Unhappy with many of the aspects of the first two pieces, *Rolling Side Table* ventures off into another and more successful direction. I have continued with a cart vocabulary but have incorporated the movement into the way we engage furniture-through the handle. The movement of the piece is now connected within the portability and functionality of the table.

*Rolling Side Table* is a small table with a drawer and is painted red, purple and yellow. It consists of an organic drawer cavity and small handles growing out of four spindly legs that end in wheels on the floor. The drawer face is attached to the front leg that extends down from a small handle to a single forked wheel. This piece’s movement is used for both portability and access to the drawer case.

The drawer case is squeezed in the middle to add to its whimsical style. This style, along with the color is consistent with the feeling of the sketches. Along with this success, the action of the drawer and front wheel work well together, but the mechanics dealing with the portability still has not been resolved.

The conceptual move to this piece was a good one and is an idea worth pursuing for sometime. This table also takes the inherent quality of interaction in a drawer and highlights it with a handle and wheel, making it a more intimate part of the concept.
Though it does, in some ways, fall short mechanically, this revised concept begins to challenge the thesis statement in a more successful way.

Wall Wheel Box
mahogany, milk paint
12” x 3.5” x 3”, 5’ x 6” overall height

Realizing the success of Rolling Side Table, I had already begun to formalize designs for the final three pieces, a series of wall boxes. I see this series as a scaling down of parts, focusing more on the handle and interaction and less on the mechanics explored in the first tables. Though these boxes were conceived at one time, my decision to start with Wall Wheel Box was merely the result of personal interest.

Wall Wheel Box consists of a narrow wall box, which the door slides downward by means of a long handle that terminates to a wheel. When the box is in the closed position, the wheel hangs above the ground. Opening the door, by rolling the wheel down the wall, activates the box. This is not only engaging movement for the user, but also activating the room the box occupies.

The whole notion of this piece questions the way we interact with furniture. It first does this by changing the motion of the door, which is a downward pull, and then by presenting a long handle with the wheel, a new method of getting into a box. The surface treatment has a tight checkerboard pattern of green and white with blue and yellow accents, this along with the feel of the surface are alluring and ask to be interacted with. The fact that the pattern is continued inside also gives the viewer further enticement to explore the piece.
The idea behind this piece, which I feel is the most successful of the show, arises from the way it pushes the limits of functional objects. Though it functions as a box, its real meaning lies in the motion necessary to get into the piece. While watching people interact with this piece during the show, I felt it encompassed all the things I was after in this body of work. It lured viewers in through curiosity, encouraged them to put the object into action, which was accompanied by mechanics that worked.

Wall Box 2
mahogany, milk paint
3.5” x 3.5” x 3”

Continuing with the exploration of movement within these wall boxes, I began to build Wall Box 2. This is a small box with a pivoted door and a long handle hanging down. The movement is puppet-like in that it has a purposeful arm motion that opens the door by pushing up on the handle. This causes the door to pivot in the upper left hand corner, opening the door. The container is organic in form and wrapped with a checkerboard pattern of blue and yellow, bordered by incised lines. The scale of the elements to each other and surface treatments are reasons why this box is so successful.

Wall Box 2 has an array of successes in concept and execution, but I still consider that its scale leans more towards a study for a full sizes piece rather than a piece in itself. I think this piece is gaining momentum from the last two pieces regarding the success of concept. Though again this box has more toy-like characteristics than that of a piece of furniture. Its ability to maintain the sketch quality is great and the material choice works well with the function of the work.
Wall Box 3
mahogany, milk paint
6.5” x 6.5” x 4.5”

The final piece in this thesis process is Wall Box 3 (plate11). This container is square with an oversized carved hinge and a long handle. It has an orange and purple checkerboard pattern that highlights its undulating character. Its purpose was to accentuate the element of movement inherent in the hinge and draw the viewer in with the long narrow handle.

As an object this wall box has visual interest, but does not speak the same language as the rest of the work, leaving it as the least successful of the show. Because of the way these boxes were designed, the fact that this is the final piece in the show does not overly distress me; my concern lies in the piece itself. This piece is void of a concept relating it to this thesis; the checkerboard pattern and its ability to capture the character of the sketch are its only links.

As I reflect on this piece, I am not happy that it was the final, especially after the success of the previous pieces. I am actually unsure why this box was even conceived; it feels more like filler than anything. Though I do realize that it was not a wasted effort, the disappointment is in its inability to comply with the rest of the work.
Conclusion

As I look back on the whole of the thesis process, I see six pieces that have a variety of strengths and weaknesses. These are the results of the choices I made in the conception and making of the objects. I see the richness in the opportunities of solving problems in the work as well as the development of the stronger ideas. To begin to evolve this work into a more successful realm, I need to examine these strengths and weaknesses dealing with the risks in the process, aesthetic decisions, material choice and mechanical elements.

The risks faced in this process were both personal and aesthetically driven. Facing the fears of personal struggles and developing healthier ways to approach my work is at the heart of this thesis. I feel a better artist and person for having struggled through it. Decisions based on the pursuit of a building style that would ultimately cause other parts of the work to fail were also very important and were the price exacted to move from the rather stagnant style it had become.

Above all, staying true to the look and character of a piece was most important. Part of this was choosing materials that are best suited to achieve these ideas. I feel in most cases the material of wood was inappropriate for this work, though I consciously continued to use it. The reason for this was I did not think I could finish this work in my timeline if an element of material research was added to this process. Wood was familiar to me; I felt I could manipulate it better than other materials at this time. More appropriate materials would fall within the realm of metals and plastics. These, coupled with wood, would hold up to the rigors that these ideas and character would put on a
material. To take these ideas to a more successful level, it is my goal to research and develop new materials that would help these concepts function properly.

Another area needing some focus was the kind of objects I chose to make. As I dealt with a variety of problems with the tables, I had already begun to design the wall box series. This was a retreat to an object I had previously had some success with. By filtering the concept to a wall-hung object, I was shying away from the areas of the tables that needed the most attention - the legs. I agree this move was ignoring those problems, but I do think it helped me better clarify this idea. By examining this concept in a simpler form, it helped me solve many of the issues that plagued the other pieces. Through this move I was successfully able to balance aesthetics and function in the making of Wall Wheel Box whose attributes speak true to the thesis statement.

To me, the ideas of this thesis were solid and provocative. Though much of their execution fell short and in many cases failed, they all merit my further investigation. I feel the biggest rewards resulted from the areas of work that encompassed motion and interaction at their heart. Pieces like Wall Wheel Box pushed the boundaries of both material and the thesis statement. This process has both challenged and rewarded me in my struggle to achieve it. I feel the further investigation of both idea and material will provide me with the first steps of a career.
Plates

1. Thomas Loeser: *Rollers #1, #2, #3*, 2001

2. Reagan Furqueron: *Wall Wheel Box*, 2002

3. Reagan Furqueron: *Wall Box 2*, 2002

4. Reagan Furqueron: *Rolling Table 1*, 2002

5. Reagan Furqueron, *Rolling Side Table*, 2002

6. Emi Ozawa: *Rolling Saucers*

7. Emi Ozawa: *Cubic Circus*

8. Allen Wexler: *Mattress Factory Gallery Residence*


10. Rube Goldberg: *Professor Butts, taking his morning exercise, kicks himself in the nose and sees a simple idea for cooling a plate of soup.*

Plate 1
Thomas Loeser
*Rollers 1,2,3*, 2001
Plate 2
Reagan Furqueron
*Wall Wheel Box*, 2002
Plate 3
Reagan Furqueron
Wall Box 2, 2002
Plate 4
Reagan Furqueron
Rolling Table 1, 2002
Plate 5
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Rolling Side Table, 2002
Plate 6
Emi Ozawa
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Emi Ozawa
*Cubic Circus*
Plate 8
Allen Wexler
*Mattress Factory Gallery Residence*
Plate 9
Reagan Furqueron
*Rolling Table 2, 2002*
Plate 10
Rube Goldberg

Professor butts. Taking his morning exercise, kicks himself in the nose and sees a simple idea for cooling a plate of soup.
Plate 11
Reagan Furqueron
*Wall Box 3, 2002*
Bibliography


