National College of Art & Design Department of Craft Design

# Wendell Castle: Timepieces

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Submitted to the Faculty of History of Art and Design and

Complementary Studies in Candidacy for the Degree in Craft Design

1998

# ACKNOWLEDGMENTS

I would like to thank my thesis tutor, Niamh O'Sullivan, for all her help this year.
I would also like to thank the Brooklyn Museum, The Detroit Institute of Arts, Museum of Fine Arts Boston, Memorial Art Gallery of the University of Rochester, The American Craft Council and the Smithsonian Institution for the information they supplied.

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# INTRODUCTION

Can a piece of furniture be a piece of sculpture? If it has function does that mean it is not sculpture? Can Wendell Castle make something that has function and is also a piece of sculpture? Can he achieve this through his interpretations of the concept of time in his ranges of timepieces? Throughout this thesis I will try to answer these questions.

The artist/craftsman Wendell Castle has attempted to resolve these conflicts between function and sculpture through confronting these all his life. Castle will not rest until he has been accepted by the fine art world as a valuable sculptor/furniture-maker, that is, accepted as a fine artist. He has devoted his life's work to the process of achieving the acceptance of his furniture as fine art sculpture. In this thesis I will deal with how he has achieved this through his clocks which he considers to be his most sculptural project.

I discovered Wendell Castle's work in contemporary furniture books in our college library. I found his work so interesting and different, that I wanted to find out more about it. I wrote to many American Museums and galleries and received information on him. I am very interested in furniture and its recent challenging position situated between craft and sculpture. I chose Wendell Castle's work mostly for his use of bold shapes and his unique designs, and his constant battle to justify his furniture as sculpture, uprooting the barrier between craft and fine art, through focusing on his ranges of clocks.

Unlike most average clock-makers who make clocks as decorative ornaments that tell the time, Castle made clocks that not only told the time but also in their design took on the immensity of the theme itself time. In order to understand his clocks and his concepts, I will introduce the twentieth-century American craft scene and then situate Wendell Castle and his work within this world.

In chapter one, this thesis will discuss how craft in America in the last century has gone through many changes and how the American craft movement has spanned the late nineteenth century and the twentieth century, through the World Wars. The 1950s and 1960s saw the emergence of the first generation of furniture makers who linked furniture to sculpture and fine art. In the 1960s the artists moved freely between craft and fine art. Then in the 1970s the second generation appeared and it is amongst these that Castle shone.

Wendell Castle was born in 1932 in Emporia, Kansas, U.S.A. He studied art between 1953 - 1961 at the University of Kansas. He took courses in architectural and industrial design, drawing, sculpture and jewellry. He received a Bachelor's Degree in Fine Art in industrial design in 1958. Castle then decided that he wanted to be a sculptor, so he returned to the University of Kansas to finish a Master's Degree in Sculpture in 1961.

At this time he was very inspired by two wood-workers, George Nakashima and Wharton Esherick, especially the latter who made woodblock prints, sculpture and sculptural furniture. It was mostly Esherick's aesthetic philosophy that influenced Castle as he was interested in both the sculptural and functional aspect of his furniture.

When Castle moved to New York in 1962 he began teaching at the Rochester Institute of Technology. He was allowed to use the college's work space and equipment after college hours and at weekends which allowed him to develop his own ideas and style more freely. Castle had always considered marketing to be an important part in the presentation of his work, so he concentrated on advertising and exhibiting his work in order to increase his exposure and enhance his reputation, in the hope that he would get further commissions.

Chapter one will also show the effect that exhibiting his Stool Sculpture in the Mid -

America Exhibition, and his Scribe's Stool in the Young Americans in 1962 had on Castle's early work. His achievements have been recognised throughout America as well as in Europe. This is evident in the many prizes he has been awarded, which include winning first prize in the annual Rochester - Finger Lakes Exhibition, 1965, sponsored by the University of Rochester's Memorial Art Gallery, which resulted in his first one man museum exhibition. Castle was one of several craftsmen chosen to represent the United States at the 1966 Internationales Kunsthandwerk exhibition in Stuttgart, at the time considered the most significant craft exhibition in Europe. These important advances resulted in commissions, sales and important artist - patron relationships.

In 1964 Castle was included in an exhibition 'The American Craftsman,' at the Museum of Contemporary Crafts in New York. This exhibition show-cased thirty distinguished American craftspeople but only included three wood-workers - Sam Maloof, Wharton Esherick and Wendell Castle. This show contributed to the growing position of Castle's work in the craft world. In less than two years Castle was included in the internationally acclaimed five-person show Fantasy Furniture in 1966 and at the Museum of Contemporary Crafts. This led to considerable Press coverage, including a review in 'Art in America'. By 1967, his career had reached a peak and he continued to sell work which enabled him to hire more assistants for his workshop.

In 1968 Castle purchased an old soy-bean mill in Scottsville, New York. This became both living and work space. In 1970, due to differences between Castle and fellow furniture tutors at the Rochester Institute of Technology where he taught, Castle accepted the position as Chairman of the Sculpture Department at the State University of New York at Brockport.

His production of plastic furniture lead to the establishment of Wendell Castle Associates in 1970, he also produced a range of wooden furniture for production. By

the mid 1970s master craftspeople were becoming more established and accepted by fine arts galleries and the public. This new interest in craft benefited Castle immensely. In the late 1970s he began his range of furniture entitled *trompe l'oeil*. In 1980 as finances were increased, Wendell Castle set up his own school called 'The Wendell Castle Workshop' (later the Wendell Castle School) in which he created a school combining both a traditional Craft apprenticeship and a fine arts degree, supported by marketing.

Now that his finances were secure he could afford to take on such an expensive project as tall case clocks. These were monumental clocks which took on the immensity of time.

This thesis will deal with Castle's ranges of tall case clocks which incorporate many different aspects of time; from mystery and magic to the decorative arts and also incorporating time with other elements, creating metaphors for life and change. As a concept, time is a vast subject. Castle took on the clock theme as he felt that he would be able to express his concepts concerning form and function more freely as he considered that a clock was one object whose function was the least overpowering. According to Castle,

> The nice thing about clocks is that they have no function that makes demands on the form. A table has to be a flat surface. A chair has to have a place to sit on. With a clock, you just have to stick hands on it some place or other. I'm putting them on top, but they don't have to be. (Mullinax, 1996, p. 1)

Castle has always worked on a large scale, so these clocks would have to be impressive in scale, and take the form of tall case clocks. To make time pieces to fit Wendell Castle's tastes, to sum up his vast research into history and art, and to incorporate his love of exotic materials and refined techniques, was the purpose of this major project.

In chapter two this thesis will deal with Castle's clocks and how he balanced technique with concepts, and how he considered these clocks to be his most sculptural project yet. The first clock he created entitled Octagon had an inscription on it "Time and tide

wait for no man". This clock was a success, so he embarked on creating two whole ranges of clocks.

To understand Castle's clocks we have to consider his concepts of time. In order to comprehend these we must examine how time, through the ages, has been measured and understood. Chapter three will discuss this through looking at the earliest measurements of time, which consisted of dividing a year into twelve moons. The recording of the sun's movement which enabled yearly events to be noted, such as at Newgrange, which indicates the shortest day of the year, and Stonehenge indicating the longest day of the year. Chapter three will likewise consider the invention of sundials and water clocks, and its effect on the measurement of time. Likewise to man throughout the ages Castle has tried to understand time through its recording and measurement.

This chapter will look at how astrology required accurate timekeeping and will also include the people who first divided the degree into minutes and seconds, the first inventions of machines that showed the motions of the planets and the first clock dial with hands turning clockwise. The invention of the pendulum, right up to the most accurate clock to date, will also be considered. As man throughout the ages has invented many different ways of telling the time, Castle has also created different ways of telling the time in his individual timepieces. In this way I hope to unravel the concepts and reasons for Castle's work.

# CHAPTER ONE

This chapter will introduce twentieth-century furniture in America as this is the background to Wendell Castle's career and explains where his motivations originated. Against this background his clocks will be introduced. In the past fifty years in America there has been a change from Modernism for the most part, to personal expression for the latter part; this transition has included a broadening of the concept of furniture as made by artists, architects and crafts people. In the 1950s and 1960s the 'first generation' of studio furniture makers (working mostly in wood) were driven by the aesthetics of the material. This emphasis on material was their main characteristic along with attention to idea, form and technique. In the 1960s there was an effort to link furniture to sculpture and fine art, but it did not achieve much supportive response, as furniture was still only being commended by the fine art world for its function and technique. In the 1970s the 'second generation' of furniture makers extended the emphasis of the 'first generation', but placed more emphasis on concepts and meanings, along with the use of a variety of materials, and greater attention to the process of design.

The roots of the American Craft Movement started in the late nineteenth-century and developed from early twentieth-century. It matured after World War II when people had more money and were becoming more aware of domestic furniture and surroundings leading to a mass-production of factory furniture. This created the modern industrial style which combined inexpensive construction with basic design. At the same time, at the other end of the market there was a choice of either American industrial furniture, imported Scandinavian or custom-designed works. The Scandinavian imports were a mixture of the hand-crafted style of the cabinet maker and the efficiency of industry's mass-production. The industrial designed pieces were made from materials other than wood, such as fibreglass, wire etc., to introduce expression and aesthetic value. Then there was the custom designed work which was influenced by both Scandinavian design and colonial revival, producing new modern-styled furniture. This

new style inspired a group of furniture makers who worked outside these main channels, and who relied only on their own workshop and their own designs to create their furniture, without the use of factories and mass-production. This alternative to industrially designed furniture was the creation of the first generation of studio furniture makers. Wharton Esherick and George Nakashima are the two earliest and best known furniture makers in this generation. Wharton Esherick was one of Wendell Castle's biggest influences and as with Castle, was influenced by the geometry of Cubism. He also had an affinity with the natural form of the material (wood). Esherick began as a painter, then sculptor and then finally became a furniture maker. In the 1930s and 1940s he made little impact on the American furniture scene; in the 1950s he created furniture with curved lines unlike the rectilinear lines of the industrial furniture, but still his work was not associated with the fine art world. The emergence of the Studio Craft Movement in the 1950s was linked to the success of both Nakashima and Esherick in the custom-designed furniture market. In the 1950s many small custom furniture workshops sprung up, run by people ranging from the self-taught, to sculptors, architects and crafts people. Although these new studio furniture makers used the term hand-crafted they did not totally reject the machine, using it selectively to their advantage.

The 1960s offered furniture makers a new direction in their work, as they moved freely between craft, fine art and design creating an environment that strongly rejected the emphasis on function and truth to materials, resulting in more creative experimentation. In the 1960s the two main furniture makers whose aims were to reject traditional forms and techniques and make 'artistic furniture', were Wendell Castle and Tommy Simpson, both of whom exhibited work in 1966 in the Museum of Contemporary Crafts exhibition, Fantasy Furniture.

Castle was interested in organic forms and was one of the first furniture makers to use only stack lamination to construct his furniture. He combined his interest in sculpture

with respect for his material (wood). In the 1960s there were two main exhibitions of studio furniture - Woodenworks and Objects USA. The exhibitions consisted of five masters - Wharton Esherick, George Nakashima, Sam Maloof, Art Carpenter and Wendell Castle. These exhibitions brought furniture (woodworking) into the public eye. As Cooke maintained

> Castle's anti-historical organic style and simple techniques inspired many woodworkers and spawned imitators; stack lamination became synonymous with contemporary popular American furniture of the 1970s. (Cooke, p. 10).

At the beginning of Castle's career he did not want to look at furniture from the past but rather create his own organic furniture made from stack lamination which became the basis for the construction of most of his work. This involved glueing lengths of wood together and then shaping the outside to whatever form is required. Although it had been used by contemporary sculptors in the 1950s, Castle was the first artist-craftsperson to use this process regularly. He has always been concerned with the conceptual side of his work, so he created a piece of sculpture that had a hidden function which was only revealed through close examination.

Castle's Stool Sculpture (1959) (plate 1) was one of his first pieces of furniture to be viewed as sculpture (indeed, when first viewed it was not obvious that it was a stool). This was juried into the Mid - America Exhibition (1960) at the Nelson Gallery - Atkins Museum in Kansas City; Also, his Scribe's Stool (1962) was exhibited in New York at the Museum of Contemporary Crafts in the Young Americans exhibition. Although his first stool - Stool Sculpture was viewed as sculpture, after this stool sculpture he created many other pieces of furniture which led him his recognition solely as a furniture maker. During the span of Wendell Castle's career, as the barrier between craft and sculpture was being uprooted, traditional techniques and materials were beginning to be replaced by conceptual issues and new experimental techniques.

From 1969 Castle spent two years concentrating on fibreglass sculptures, during which time he sought to break away from the title of furniture-maker with which he was

**Plate 1**
**Stool Sculpture, 1959.**
Walnut; ivory
154.9 x 59.1 x 94 cm

labelled. As a result of this venture, his work was developing more sculptural characteristics. Even though some of this work was beginning to be viewed as sculpture again, the art world was still inclined to focus on the functional aspect of his work, as function was not considered appropriate to sculpture.

In 1970, in Castle's second one-person show at Lee Nordness Galleries, he exhibited nine lamps which were all made from non wood materials and were very sculptural in shape and form. These were all made from glass-reinforced polyester, coloured with shiny automobile enamel and finished with automobile lacquer. To emphasise the sculptural content of these lamps he gave them names, one such name being Benny (plate 2).

Between 1969 and 1973 Castle abandoned his stack lamination, as he felt that this technique overpowered the aesthetics of the pieces; the lines of lamination and the bulk of the technique were oppressive. During this time he made hand-built plastic furniture, but it proved to be unsuccessful, so he returned to wood. In 1972-73 the City of Rochester commissioned Castle to make a large outdoor sculpture. This was a twelve-foot piece, Twist (plate 3) which also functioned as public seating.

As Castle's work went through many phases, he became more and more concerned about it being accepted as sculpture. He then began a new project in which he hoped to transcend furniture, to create sculpture that would not be limited by overpowering function. He also intended to incorporate his fine cabinet-making with a concern for fine finishing in these pieces of work. Castle was intrigued by the idea of translating every-day objects into illusionistic wooden sculptures. He was interested in realistic sculpture, but also wanted to keep in mind his love for traditional furniture techniques and styles. He produced two types of illusionistic sculptures: one using stack laminated furniture forms and one using traditionally constructed furniture. In using the latter he referred to previous traditional furniture in look and construction.

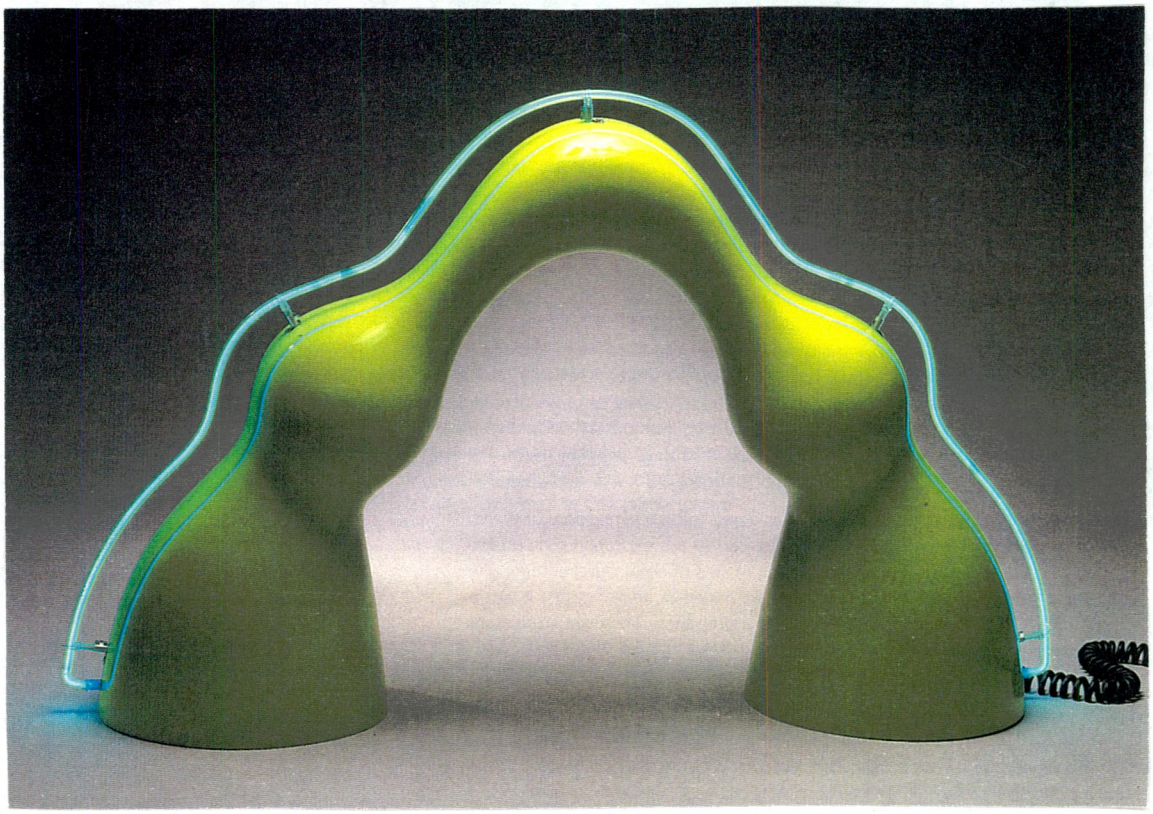

**Plate 2**
**Benny, 1969**
Glass-reinforced polyester, neon
88.3 x 145.4 x 41.9 cm

**Plate 3**
**Twist, 1972-73.**
Genesee Crossroads Park East, Rochester, New York.

In 1976 Castle began to make illusionistic objects that consisted of traditional furniture forms on which he displayed everyday objects carved in wood, called *trompe l'oeil.* In *Trompe l'oeil*-fashion he incorporated objects like hats, glasses, gloves and jackets (plate 4), all of which were made of wood, and were an integral part of the furniture. In 1981 he had a one-man exhibition in Alexander F. Milliken's gallery of predominantly illusionistic work. These received attention from both craft and art critics in the late 1970s, indeed John Rullell from the New York Times, lauded Castle as both furniture-maker and sculptor, gratifyingly comparing his work to that of the Surrealist Rene Magritte.

As a further step in Castle's efforts to create furniture as sculpture he took on a project which involved clocks. In an effort to make furniture which was not solely defined by its function, he focused on clocks as the most flexible form of furniture for this purpose. As far as experimenting with the sculptural aspect of the piece is concerned, the only functional feature of a clock is its face and hands. In this range of clocks he would explore the theme of time which brought him back to combining conceptual ideas with technical skill. He thought that by developing a series of monumental clocks with sculptural qualities it would position his work as sculpture. It was a logical step from his previous furniture and especially his *trompe l'oeil* work.

Not only was Castle creating a range of tall case clocks, he was taking on the immensity of 'time' itself. He explored several ways in which the form of the clock can be viewed - architecturally, anthropomorphically and metaphorically: from mystery and magic, to the decorative arts and references to the human form.

Castle was always uncomfortable with his close association with the craft world, through making furniture from wood, the traditional furniture-making material, even more so now that he was becoming more respected by the fine art world. He began to change the appearance of his wooden furniture by painting them and also he began to

**Plate 4**
**Coatrack with Trench Coat, 1978**
Honduras mahogany
190.5 x 58.1 x 54.6 cm

work in materials other than wood. As in Music of Rubber Bands (plate 5) Castle began to make furniture that did not function, creating tables with warped tops, for example; nothing could be placed on these as objects would simply fall off, due to the angle of their tops. Some of these pieces were so ridiculous as far as function was concerned: a tiny cabinet barely able to contain anything, would be placed in the trunk of a rubber plant in a pot (plate 6). After this, Castle could not resist returning to the idea of tall case clocks. He still considers the clocks to be most conducive to creating form within their function, so he created a second range of clocks. This most recent range of clocks, entitled *Pods,* are similar to his early organic work. Like his early work, these clocks are free from sharp edges and straight lines and are attractive to touch. In this range he used straight forward techniques, focusing interestingly on the initial idea and the final finish. Similar to his early organic sculptural furniture, pieces like Blanket Chest (plate 7) accommodate function but place greater emphasis on the work's organic shape. The clocks are by no means overburdened by their function and have a strong sculptural presence through the technique and designing used to create these organic shapes.

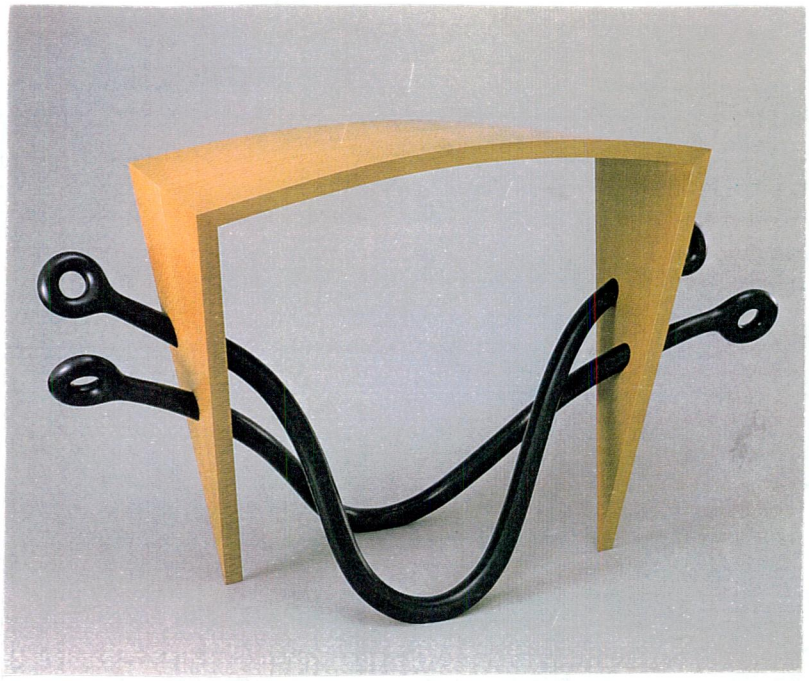

**Plate 5**
**The Music Of Rubber Bands, 1986**
Ebonized cherry, lauan plywood; lacewood veneer
96.5 x 162.5 x 55.8 cm.

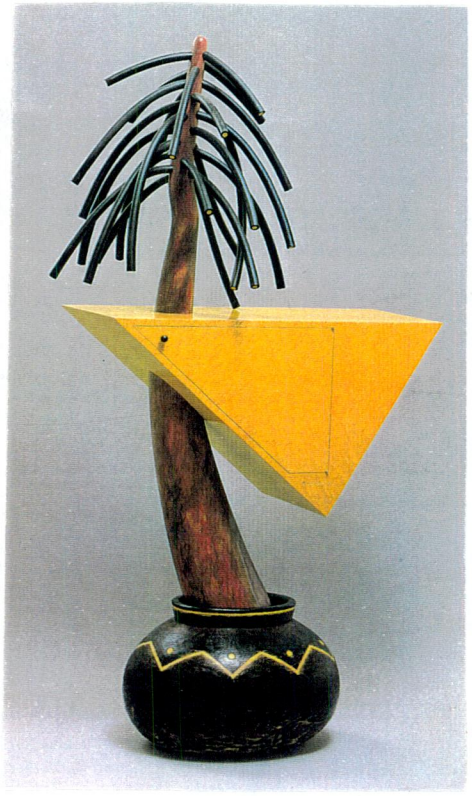

**Plate 6**
**Untitled (Potted Rubber Tree), 1986**
Painted poplar, flakeboard; stained bird's-eye maple veneer; rubber
175.2 x 88.9 x 35.5 cm.

**Plate 7**
**Blanket Chest, 1963**
Cherry
91.4 x 86.4 x 33 cm

# CHAPTER 2

Castle made a clock in 1984, Octagon which was influenced by early nineteenth century furniture. This was an octagonal column, seven feet tall, in East Indian ebony, with an octagonally-sided clock face that is set into the column. It has a circle of inlaid silver letters just above the base, spelling out the proverb "Time and tide wait for no man". This was such a success that Castle embarked on making a whole range of clocks.

Wendell Castle's first range of clocks grew to thirteen timepieces. In which he incorporates his high regard for fine craftsmanship. To this end, he employed certain people such as clock-makers and fine furniture makers to help him with his work. A skilled metal worker provided the expertise required for metal fabrication - plating and casting, while a trained engineer provided the designing and milling of the hardware and the mechanisms.

Wendell Castle spent a total of two years (1983-85) working full-time on this project. Notwithstanding the considerable emphasis on technical excellence he tried to balance this with a sophisticated conceptual approach; through exploring the theme of time he hoped this project would be his most sculptural one yet aspired to. In developing a series of monumental clocks with significant sculptural qualities, given the considerable expense involved in the production of each piece, the marketing had to be a major concern.

Castle explored different ways in which the form of his clocks can be viewed: architecturally, anthropomorphically and metaphorically. Many of the clocks are concerned with architectural and monumental qualities which are emphasised through their height - all clocks being between six and eight feet tall. In this series Castle does not just simply put hands and a face on each clock, each clock has a carefully thought-out way of telling the time, and every clock is different. Castle's approach to these clocks was

architectural in terms of their mass and historical in terms of their detailing.

Mystery (1984), was influenced by the geometric forms of the French architect Claude-Nicolas Ledoux, and also refers to Castle's *Fancy Furniture*. The main body of this clock is made up of bubinga, curly maple, granite and gold-plated brass. The clock part of this piece does not reveal how it tells the time. Its hands look like they are attached to nothing and there are no numerals on the clear Plexiglass face, which is ringed in brass. The hands of this clock float upon this transparent glass disk, and are rotated by a completely hidden electric movement. Chastain-Chapman suggests that this clock refers to nineteenth century French novelty clocks although he continues less positively:

"this piece is a good deal less mysterious than the nineteenth century French novelty clocks known as *mysterieuses* to which presumably, Castle's title refers." (Chastain-Chapman, 1986, p. 22)

Magicians Birthday (1984) (plate 8), is suggestive of Medieval forms of enchantment, calculation and geometry, indeed temples of this period were complexities of extended geometry. The veneer of this clock is stained to reduce the visibility of the grain. It consists of ebony, ebonised cherry, East Indian ebony and gaboon ebony. Its numbers are made from gold-plated brass and there are four aligned clock faces and four synchronous sets of hands. But the numbers lie at the bottom of the piece, lying on its feet like ankle bracelets.

Castle's Bird clock was also made in 1984, it refers to both Roman and Gothic architecture. This clock is comprised of lacewood, cypress crotch veneer, ebony and ebonized cherry. Formed as a gothic slender linen-folded column with a church clocktower it displays a number of carved birds on top of a base guarded by four imperial eagles, all in gold-plated brass. According to Lisa Hammel the clock could have been titled "from the fall of the Roman Empire to the rise of Christianity." (Hammel, 1986, p.10)

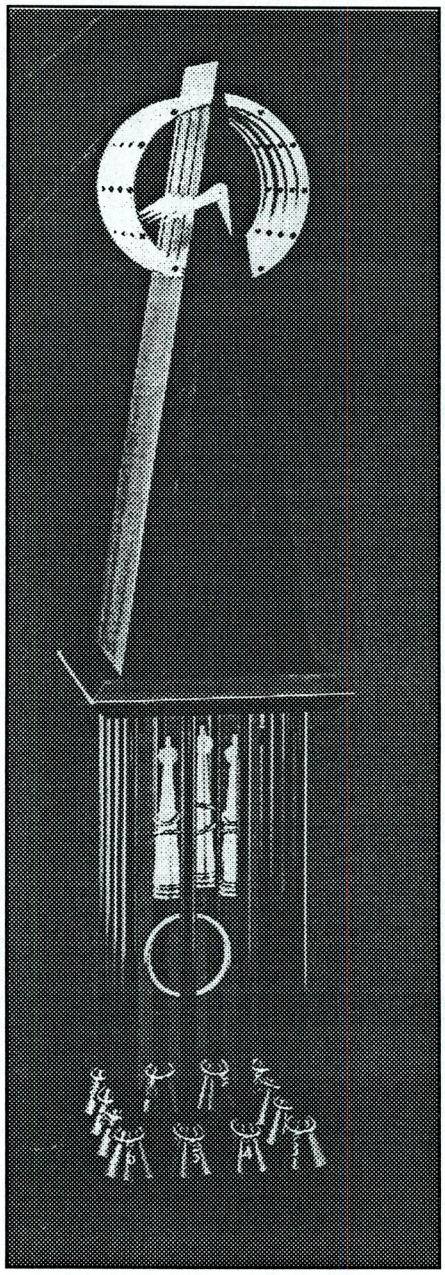

**Plate 8**
**Magician's Birthday, 1984**
Gaboon ebony, ebonized cherry, East Indian ebony, gold plated brass, weight driven movement
92" x 21.5" x 21.5"

Sun God (1985), was inspired by the Egyptian sun deity Horus. In a mixture of tulip-wood, purpleheart and rosewood, it has no dial and the hands are very small in proportion to the rest of the clock. The clock is eight feet tall, with a pyramid resting on two legs, in purple and gold. Perched on the base of the legs in the form of gilded falcons are the incarnations of 'Horus'.

The design ideas of Ziggurat (1985) were based on Sumerian Temples, executed in gaboon ebony the clock is enhanced by the golden semi-circular dial and numbers that seem to represent a sunrise or sunset. Furthermore, the koa veneer seems is evocative of a Middle Eastern desert landscape. The clock looks like it is made from solid boards - the striped veneer creates this illusion by separating each level. As opposed to normal clocks the large hand points to the hour, and the small one to the minutes. There are eleven brass numbers on the top of the crescent shaped clock, at twelve o'clock the hands disappear beneath the crescent.

Arch (plate 9) also made in 1985, refers to arches from the architecture of the Roman Empire. It has panels of rose wood which are separated by gilded fillets, suggesting a series of building blocks. It tells the time by two gold balls moving within a golden circle. In Chastain Chapman's opinion

"Arch makes such a clear reference to an Art Deco icon, the famous Egyptian head-dress clock by Albert Cheuret." (Chastain-Chapman, 1986, p. 22)

While all of the above mentioned clocks have architectural resonances, the next two clocks refer to the human form. Jester (plate 10) was made in 1985, and Four Years Before Lunch (plate 11) in 1984. The references to the human figure are evident in their decorative elements, which are derived from clothing. In Jester, this reference is made through the harlequin-type diamond patterning on the main body of the clock. It has banded grain patterns of light coloured diamond-shaped inlays in imbuya wood, and dark coloured ones in curly mahogany, underneath which stands its red leather legs.

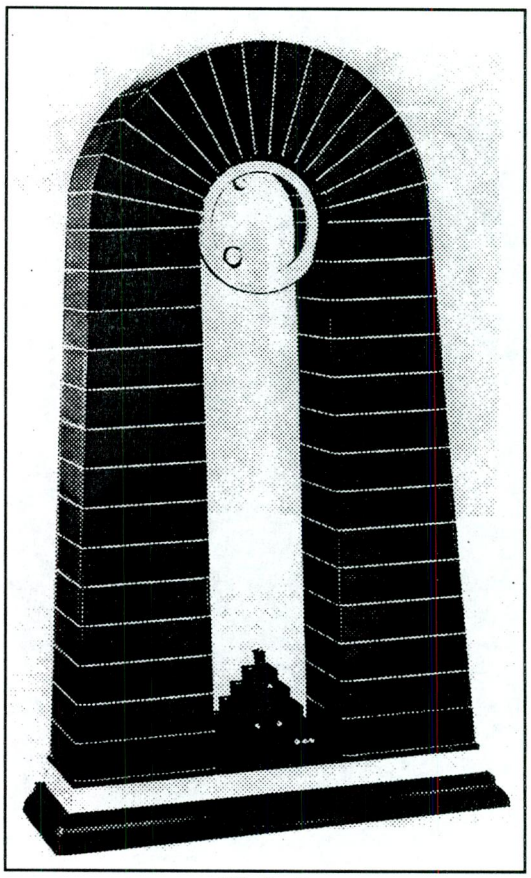

**Plate 9**
**Arch Clock, 1985**
Brazilian rosewood, curly maple, gold plated brass.
91.5" x 56.5" x 19"

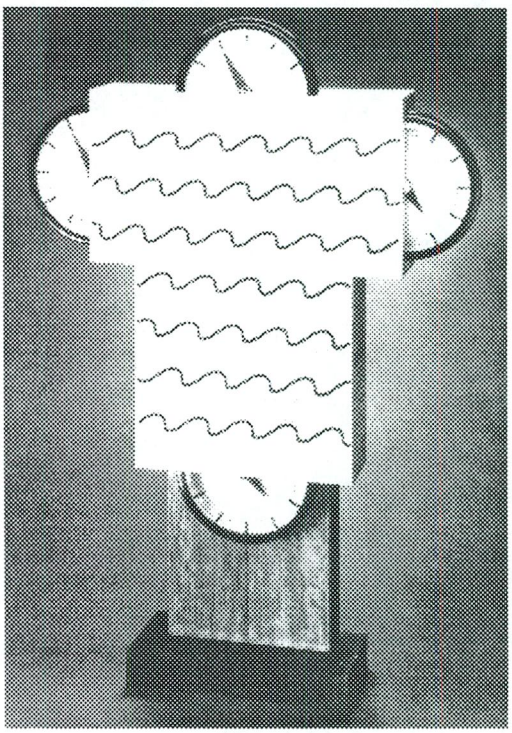

**Plate 11**
**Four Years Before Lunch, 1984**
Satinwood, gaboon ebony, Swiss pear, brass
71.5" x 50" x 12"

**Plate 10**
**Jester, 1985**
Poplar, flakeboard; fiddleback mahogany veneer, imbuya veneer; plastic, gold leaf, leather detailing, ivory detailing.
195.5 x 30.5 x 30.5 cm

Four Years Before Lunch seems to suggest a young child squirming in an agony of impatience for the multiple hours to pass, with impatient squiggles scrawled across its front. This timepiece has four clocks, but each of them only tells half the time as on each one, only half the face is visible. This clock is made from satin-wood, gaboon ebony, Swiss pear and brass.

Reverting to previous interests Desk Clock, (1985), refers back to his insistence on fine cabinet making and attention to detail. This clock also refers to the decorative arts as it is very traditional in its treatment of detailing. Inside the clock there is a fitted writing interior which is revealed by dropping the front down. This clock is eight feet high and five feet wide. It is more a statement about functioning furniture rather than an exploration of the clock theme.

Vaguely resembling an Olympic torch, Trophy, (1984), consists of clustered columns supporting a patera, the numbers in the clock move while the arrows indicate time standing still. The figures on this clock move around the rim past a fixed pointer.

Dr. Caligari (plate 12), made in 1984 was inspired by a German expressionist film made in 1919 just after World War I, The Cabinet of Dr. Caligari. The film consisted of painted sets, made with a budget of a few hundred dollars, an inexpensive film that is still considered to be an iconic film of the first half of the century. It is set against a background of shadowed streets, angular steps, skewed windows and tilted walls - a distorted world created by black paint on canvas. The influence of this film is evident in the way Castle treats the painting of the wood inside the clock, and this effect is also enhanced by the nondirectional pattern of the grain in the veneer. The clock was made from curly cherry veneer, ebony and gold plated brass, it is 92½ inches high. Even though the influence of this film is clear, it is only in the interior of the clock case that the bold black and white paint strokes capture the mood of the film. The clock contains a special West German weight-driven movement that strikes every quarter hour, half

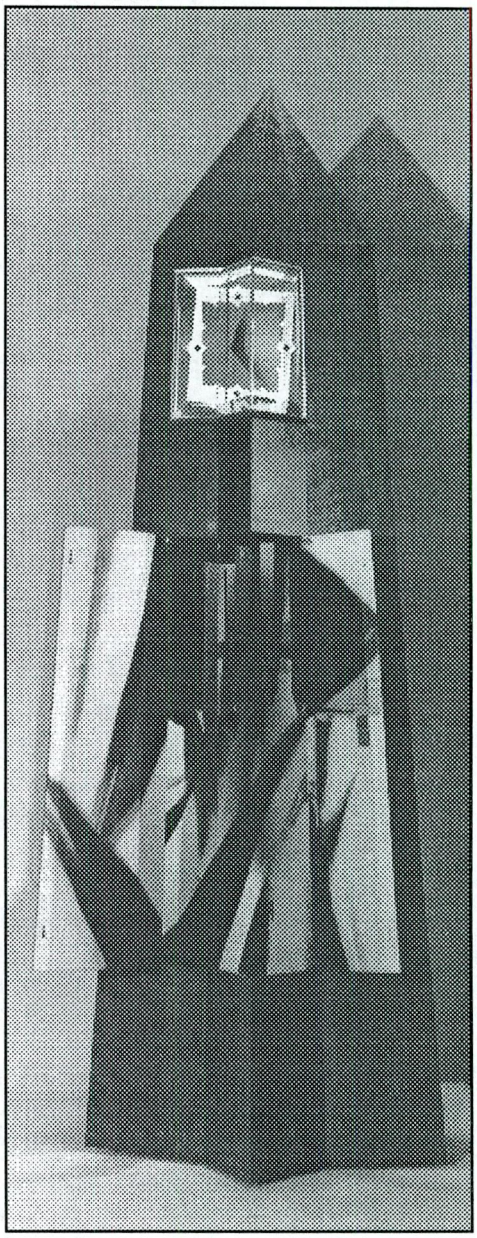

**Plate 12**
**Dr. Caligari, 1984**
Curly cherry veneer, evony, gold-plated brass, weight-driven movement.
92.5" x 31.5" x 26.5"

hour and hour on a coil gong. Three small holes in the back near the top permit winding and setting.

This range of clocks was originally intended to consist of twelve clocks (in reference to the measurement of time) but Castle added a thirteenth. Twelve of the thirteen clocks work, in that they tell the time, but the last one, deliberately, does not. This latter clock entitled Ghost (plate 13) 1985, thus makes a direct reference to his *Trompe l'oeil* work. As the only non-functioning clock, visually this clock looks like a traditional grandfather clock which has been covered with a muslin dust cloth with only the base of the clock showing. This piece, including the dust cloth, is made of bleached mahogany. It could, perhaps, be considered the most sculptural piece in the range as it has no function what so ever.

Ten years after he completed his first range of clocks Castle created a second range. He approached this range in a totally different way to the previous one. These clocks were more organic in form, and the clocks within the range had more similarities and thematic unity. These clocks, entitled *pods,* consist of ten wooden sculptures based on the grandfather clock theme. They are sleek and colourful, with biomorphic shapes balanced on elegant pedestals. The works of the clocks can be reached through small doors at the back. The clocks in the *Pods* range tell the time through hands in the centre of the starfish shape, unlike the previous range's individual way of telling the time in each clock. The clocks are part of Castle's exploration of the starfish shape. He has also used this shape for other forms of recent furniture. The star shaped series, including *pods,* consists of a forty-five foot long mural, called Metamorphosis, (plate 14) commissioned by Bausch and Lomb, and some curvilinear wood tables (star tables), a range of lamps which are almost similar in shape to the *pods* clocks, are in like form, the star shape emerging from the pod. The star shape in this piece is framed by a neon strip similar to the light fitting in Benny, of which I have spoken previously. Castle uses the starfish motif as a metaphor for the dancer or butterfly. The pod shape from which the arms of the starfish emerge is used as a metaphor for life, renewal and

**Plate 13**
**Ghost, 1985**
Mahogany, bleached mahogany
222.3 x 62.2 x 38.1 cm

change, and paired with the clock theme it takes on the ideas of time and change. This second range of clocks is less complicated than his previous range. With one overall concept, the variation in the pieces lies in the different interpretations of the starfish shape. Even though these shapes have been used throughout Castle's recent *star series*, they take on a unique meaning when they are paired with the clock suggesting ideas concerning time and change. The hands of the clock continuously go round, counting the hours as Castle visualises life to be continuous, with no beginning or end, repeating the cycle of birth, decay and renewal. Most of these clocks are made from poly-chromed wood, bronze and goldleaf.

Time to go (plate 15) 1996, similar to all the clocks in this particular range this clock takes on their overall concept of life, renewal and change. Taking this concept into consideration, this piece is very sad; from the way the piece is standing, it almost appears to be sighing, as if it knows itself that it is time to go. Made of poly-chromed wood, bronze and goldleaf, it is almost as if it has taken on a human quality. It looks like it is on its last legs and has almost given up.

Like all the clocks in this range, in On Time the clock's hands are in the centre of the star form which is balanced on the pod shaped base. I think the technical aspect of this piece in particular is well thought out, through the careful balancing of the piece. The starfish shape of the clock face is only connected to its pod shaped base through a very small section. It seems to be leaning to one side, and looks like it could fall over, but being so carefully balanced it stands tall and erect. It would take a lot of consideration and skill to calculate and create a base which would balance this awkwardly-shaped clock face.

A third clock in this series called Time is Money (plate 16) was also made in 1996. Most aspects of this clock are similar to the previous clocks in this range, the one difference lies in the painted effect in the starfish shaped section of the clock. The clock

**Plate 14**
**Metamorphosis, 1995**
Installed in Bausch & Lomb's worldwide headquarters in Rochester, New York.

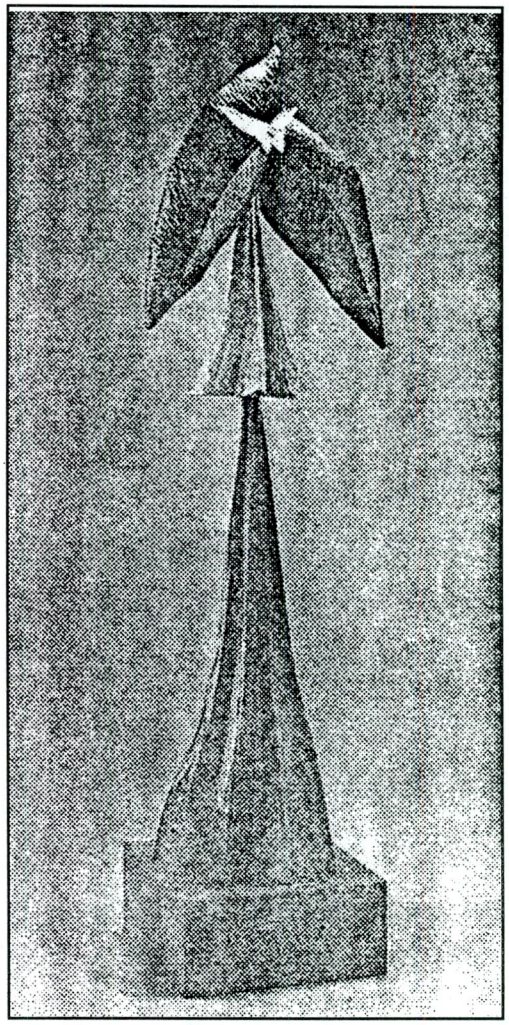

**Plate 15**
**Time to Go, 1996**
Poly-chromed wood, bronze, goldleaf, clock movement.
93" x 29" x 21"

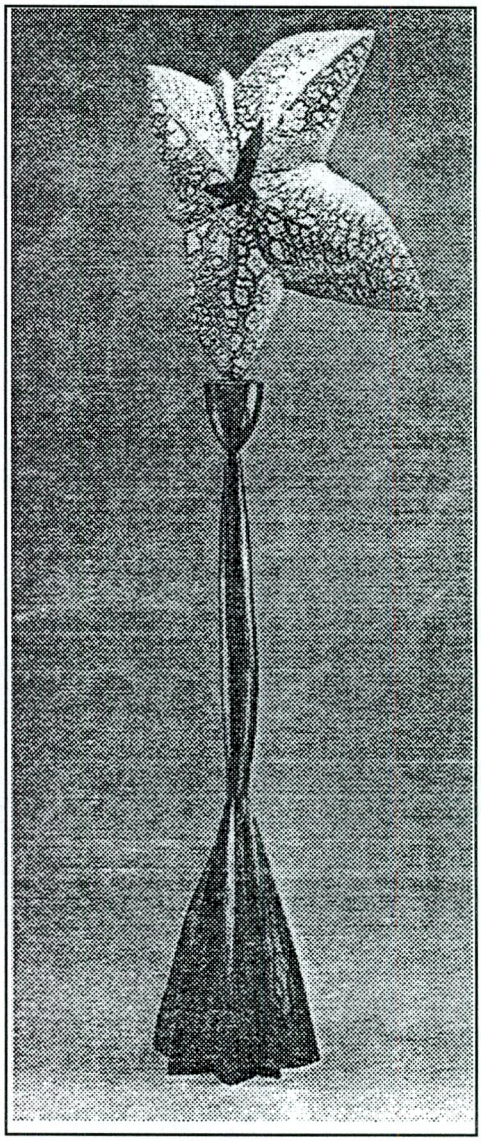

**Plate 16**
**Time is Money, 1996**
Poly-chromed wood, bronze,
goldleaf, clock movement.
98" x 31" x 18"

face is painted like cracked wood which reveals another colour underneath. All the clocks in this range take on a very direct sculptural quality, and in my opinion this range is the most impressive of the two ranges. *Pods* have a stronger visual presence than the previous range.

# CHAPTER 3

This chapter will explore the concept of time in relation to Castle's clocks and will compare and contrast his exposition of time in both ranges respectively. Castle's clocks not only tell the time, they are also about time itself. He refers back to history for most of his ideas for his clocks in his first range, while in the second series he refers to the continuity of time creates and the constant process of change and renewal that happen within this.

For man to comprehend the concept of time, how it works, and how it relates to his life, he firstly has to measure it. The term 'clock' thus refers to many different ways of telling time: the natural clock - the sun and earth (through sundials); the internal cycles of the human body, plants and animals; and artificial time keeping, including water clocks, sand glasses, mechanical, electric and electronic clocks...

One of the earliest measurements of time was the calculation of thirty days between full moons. Ancient man was not able to calculate anything smaller because he did not have the knowledge to divide months into weeks, weeks into days and days into hours. There was the obvious division between day and night but that gave no indication as how to divide seasons, for example. Noting that after making twelve notches on a stick marking full moons, the seasons were back to the point they were at when he had started to make his records, he divided the year into twelve moons or months of thirty days each, which added up to three hundred and sixty days in the year. The Babylonians, for instance, calculated a year of three hundred and sixty days. There is, however, a big mental leap between dividing a year into three hundred and sixty days, and dividing a circle into three hundred and sixty degrees, or dividing a day into hours and minutes. To divide a day into hours or a circle into degrees an artificial scale would have had to be made, because there is no natural division between hours or degrees.

An ancient astrologer used a stick and measured the point in the sky where the sun rose through measuring the stick's shadow and noted that the sun moved northwards to a limit, and then southwards to another limit, and back again. The full cycle took three hundred and sixty days.

It subsequently became evident many thousands of years ago that the figure of three hundred and sixty days was not accurate and did not fit in with the moons of thirty days, as of course now we know that there are three hundred and sixty five and a quarter days in a year.

As people began to measure the sun's movement and record it, religions, for example, set up markers to indicate important events so they could be noted and celebrated annually. One example of this is the megalithic burial tomb at Newgrange in Co. Meath. Built in the late Stone Age, about 3100 BC, it consists of a long tunnel leading to a burial chamber. It was constructed so carefully that a beam of light from the sun at sunrise on the shortest day of the year shines along it. In England, Stonehenge, built between 1900 - 1600 BC, consists of massive rings of arches and is also concerned with sunlight on the longest day of the year. Looking through the centre arch, from the 'altar' stone one can see the sun rising over the tip of the distant heel stone on this longest day (Midsummer Day).

It was increasingly realised that the sun was a valid and very important source of reference for the recording of the passage of time, and it came to be used more and more to time daily events.

The first manmade instrument for measuring time was the sundial. The first sundials were very large obelisks which had markings on the ground around the base of it to show the time through its shadow hitting these markings. The sundial has a history ten times longer than the mechanical clock and reached such a high degree of perfection

that it took at least four centuries for the mechanical clock to displace it as a primary timekeeper. Sundials had a tendency to gradually drift until they were faster and then slower than a clock during the cycle of a year, until 1892 when a special sundial was patented by Major-General Oliver. This was called a helio-chrono-meter which corrected the sundial so that it would keep equal hours.This correction was known as the equation of time.

The water clock was in use by the Egyptians since 1400 BC. and introduced into Greece from Egypt by Plato about the year 400 BC. These consisted of bowls with inscriptions on the outside and a hole near the bottom. They may have been filled with water at dusk and would have been used to show the night hours by the falling water level. Its sides sloped outwards at an angle calculated to give the same rate of emptying whatever the level of water. The outflow hole was made in precious metal or was drilled gemstone cemented into the alabaster bowl to reduce wear. The function of the drilled gem could be compared to that of the jewelled bearing in a wrist-watch today. Although such devices sound simple they were in fact conceptually very sophisticated. In ancient times in Ireland, a bowl with a hole in the bottom was also used for time-telling, but unlike the Egyptian bowl, it floated on water until it sank and it measured intervals of time instead of indicating the time of day. There was one found in a bog in County Antrim in Northern Ireland, which was made of bronze and took one hour to sink. It is thought that the sinking bowl was introduced by the Druids, who used it in Britain, Ireland and France.

The first weight driven mechanical clock was introduced in the thirteenth-century but it is not precisely known when and by whom it was first invented. It struck a bell at regular intervals, but had no dial or hands.

Another group of people acquiring the ability for accurate timekeeping was astrologers. Astrology had been divided into two sections, natural astrology which is

concerned with the motion of the heavenly bodies, and judicial astrology which interpreted these motions in relation to terrestrial life and events. Sir Isaac Newton in the late seventeenth-century disproved the old superstitions, and natural astrology was separated in the West to become astronomy. In the West judicial astrology exists mainly for entertainment, but in some countries it is still held in high regard. Priests and astrologers built towers from which to study the stars, noting their positions and making maps.

The belief that the future can be foretold by the alignment of certain planets with the earth and sun has persisted for nearly 5000 years, since the Babylonians developed astrology. Ptolemy of Alexandria, a natural astrologer in the second century A.D., made star maps with the Earth as the centre. His sky maps were so accurate he was the first person to divide the degree into minutes and seconds.

In the third century B.C. Archimedes devised a planetarium, a machine that showed the motions of the planets. Archimedes' planetarium was so famous in antiquity that it may have been the inspiration for a series of water-driven celestial clocks.

The Greeks knew how to project a star map on a flat surface as well as on a sphere. Ptolemy used this method so that his flat maps were accurate. This technique resulted in the invention of the so-called anaphoric clock. A Greek astronomer had a disc engraved with an image of the sun which was made to revolve by water-power behind a fixed grid. Horizontal lines of the grid showed the altitude of the sun and vertical ones its angular distance along the horizon. Dr. Derek Price of Christ's College, Cambridge, has pointed out that this astronomer's model was truly the first clock dial and set the standard for hands turning clockwise. In the northern hemisphere, looking south, the sun moves clockwise. A rotating dial and fixed pointer were common on the earliest clocks before the moving pointer and the fixed dial became commonplace.

Galileo Galilei (1564-1642) was an astronomer who was interested in accurate time keeping, as this was vital for accurate observations. In 1582 he discovered that the length of time to which a pendulum swings depends on its length, not its amplitude (how widely it swings) or on the weight of its bob (the weight on the bottom). Astronomers found that Galileo's freely suspended pendulum, merely a weight on a thread, was a more accurate timekeeper than any clock. The trouble was that someone had to count the swings and to push the bob from time to time. An astronomer, Johannes Hevelius who was impressed by the pendulum, read a book by Galileo in 1640 describing the cord pendulum. It occurred to him then that a pendulum could be applied to a clock, but could not persuade any craftsman that this "ridiculous" idea would work.

The same idea had struck the great Dutch astronomer Christiaan Huygens, who was a remarkable mathematician and thinker. Huygens developed Galileo's mathematical theory of the pendulum and invented the practical pendulum clock. He was granted a patent for the clock in 1657, and the first version was a small wall clock constructed by Saloman Coster, a clock maker in the Hague in 1657.

When the longcase clock became common, clock-owners had to set their clocks by the sundial. Those with more accurate clocks soon began to notice that the clocks' time varied from sundials' time, even with the most accurate sundials with its gnomon (the triangular part of the sundial that casts the shadow) at the correct latitude.

In the late sixteenth and the seventeenth centuries it was common to supply a sundial with high quality clocks, even watches showed automatically what correction should be applied to the current date. Also provided was a table, known as an equation of time table, showing the differences between solar and mean time on different days of the year. This craving for knowledge and quest to create more accurate time pieces grew and grew throughout the centuries. The most accurate timekeeper to date is the atomic clock.

In the latter half of the twentieth century a universal time standard was set up. This accurate time signal is transmitted world wide. The only correction that has to be made to this is to deduct the transmission time of the radio waves at the speed of light, which in most cases is about a millionth of a second. Space travel is dependant on accurate timekeeping. When scientists are sending signals that guide unmanned space probes to moving targets many millions of miles away through gravitation fields that change their courses, the time lag (length of time it takes) has to be calculated with great accuracy.

Throughout history man has tried to find different ways to measure time. He has also tried to understand the concept of time, through its measurement, and to comprehend its immensity. Castle has also tried to grasp and convey this immensity through creating both ranges of clocks. The first series is more overt in its references than the second series where the concepts are more subtly suggested. The first series directly references history which then links to the concept of time. In the second range of clocks, the metaphoric concept is applied through the shapes, giving the pieces a stronger visual presence.

Design development is important when making a 3D object, or any artistic piece, the design of compositional element is as important as the conceptual element. If one is dealing with something visual, the visual element is obviously important. If it is not, then one might just as well write down one's conceptual idea? Why bother creating something visual, if it only works conceptually? It seems that the first range of clocks are more conceptually orientated, and therefore, are not as successful as the second range._Although both shapes used in the second range of clocks, the starfish and pod, have been carried throughout all the pieces, it seems that there is more expression in these individual pieces than in the previous range of clocks; the balance between concept and composition is more resolved.

# CONCLUSION

Being accepted in the fine art world has been the main challenge for Castle throughout his career. He has strived to achieve this through making sculptural furniture, his clocks have been a major contribution to this challenge. Although both ranges of clocks contained sculptural qualities, his second range of clocks have more successfully achieved this through their individual expression.

Throughout this thesis I have given an account of Wendell Castle's clocks. His clocks were important in his career as these were the most demanding project for him, through their combination of the concept of time with function which needed to be carefully balanced to be successful. Not only did he combine these but he also kept a high regard for technique. Throughout time man has tried to comprehend the concept of time. Castle has also tried this, through devising different ways to measure time and different ways of expressing time through his timepieces. I have compared and contrasted both ranges of clocks and I have come to the conclusion that these clocks have achieved his goal, which was to create a piece of functional furniture that is also a piece of sculpture. As Castle has established, clocks are very versatile and they need not be inhibited by their function. Although both ranges are impressive sculpturally, I feel that the second range of clocks has achieved this goal better as they are less complicated and are more expressive.

Even though Castle has now been accepted as a sculptor he will still create sculptural furniture that challenges the fine line between function and sculpture. It would seem that he will still continue to dedicate his career to this cause.

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