

Representations of Scale and Time:
Reinterpreting Cinematic Conventions in Digital Animation
to Create a Purposeful Visual Language

THESIS

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Thomas Edward Heban

Graduate Program in Design

The Ohio State University

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Master's Examination Committee:

Maria Palazzi, Advisor

Alan Price

Janet Parrott

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Abstract

Since the earliest days of cinema filmmakers have experimented with the temporal nature of the art form during capture, manipulation, and exhibition. This thesis paper serves as a reflective documentation of the development process for the depiction of spatial and temporal scales in the animated short film *Here Be Giants*. Drawing from cinematic conventions and shaped by the malleable nature of the medium of digital animation a visual language was developed to convey qualities of scale and time essential to the narrative. A foundation for decision making during the development process was informed by project-based exploration including photographic, animation, and live action video as well as influences from cinema, video games, painting, and sculpture. The result of this reflexive research is a tripartite of categories of visual cues that include environmental and atmospheric elements (clouds, the sun, star trails, etc.), reminiscent subject matter (tree growth in seconds rather than years), and cinematographic considerations (depth of field and motion blur). These categories were used to develop representations of scales of time along the spectrum of human real-time to geologic time. The result is an animated short film with a purposeful visual language steeped in cinematic convention and reinterpreted through digital animation to actualize parallel narrative strands of a human interpersonal narrative and landscape mythology.

Dedication

For my Family, Friends, and all those who put up with me for the past four years
especially Mom & Dad, Kate, Pat & Baby Wes,
and Sarah, Watson, & Scooter.

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I wish to thank my committee members for their expert and diverse knowledge and guidance throughout my research and production at ACCAD. I am grateful for my advisor Maria Palazzi for allowing me to explore concepts that intrigue me and for allowing me to start, stop, and fail along the way. For Alan Price whose vast cinematic knowledge and keen critical eye provided invaluable feedback. And to Janet Parrot whose unwavering enthusiasm and support taught me to believe in my own work. For Vita Berezina-Blackburn whose guidance and support got me into and through this program.

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Vita

2007.....B.B.A. Marketing, Ohio University, Athens

2010.....M.L.A. Knowlton School of Architecture,
The Ohio State University

2011 to 2014Graduate Research Associate, Advanced
Computing Center for the Arts and Design
(ACCAD), The Ohio State University

Fields of Study

Graduate Program in Design

Major Field: Digital Animation and Interactive Media

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Introduction

From cinema's inception filmmakers have experimented with capture and playback speed pushing the boundaries of real-time. Filmic pioneers such as Georges Méliès, George Albert Smith, Cecil Hepworth and Robert W. Paul manipulated exposure, the rate at which actions were captured, and camera movement. Their experimentation often incorporated interventions on a frame-by-frame basis. With these practices they were defining how their films would appear when exhibited to an audience and influencing the emotional impact of the art form and the message it delivers.

As a trained landscape architect the interconnectedness of humans and the landscape has been a focal point for much of my work. The narrative for *Here Be Giants* is made up of two intertwining yet distinct strands of a larger story arc: a human interpersonal relationship and a landscape creation myth. The depiction of scales of time is integral to the structure and communication of the narrative that at its heart explores implications of the passage of time for humans and landscape. This written thesis details the adaptation of cinematic conventions for the depiction of scales of space and time using the unique qualities of digital animation cinematography in the making of the animated short film *Here Be Giants*.

In live action cinema images captured on celluloid share an indexical relationship with the original subject matter (Atkin). For example, unmanipulated footage of a sprinter running the 100m dash in ten seconds would take 240 frames to capture at 24 frames per second (FPS) and would take ten seconds to play back (again at 24FPS); the result would appear to be a real-time event to an audience. At the stages of capture, manipulation, and

exhibition there are opportunities to modify the image, which in turn directly effects how the audience perceives the content. Much of this manipulation is made possible through advances in technology such as image acquisition (replacing film stock altogether), digital intermediates, nonlinear editing software, color correction, and visual effects (Salt). Today advancements in technology provide the ability for a filmmaker to control the entire film one frame at a time.

Animation, sometimes referred to as *single frame cinematography*, inherently enables the filmmaker's ability to control every aspect about every frame of a film. (Small and Levinson). This definition is based on the assumption that cinematography is the language of cinema; meaning it is the process by which cinematic images are produced and assembled. With a few exceptions animation does not incorporate real-time in the live action sense because there are no physical actors or sets placed in front of the camera. The animation medium allows the artist to proactively design both the speed of an action while simultaneously controlling the way in which it appears in a frame and to an audience. In essence the animation director designs the subjective qualities of real-time to an audience. Controlling the depiction of time in animation is critical to the design questions considered while developing my thesis film *Here Be Giants*. Throughout this paper I expand on the research questions:

How can the established language of cinema inform process in digital animation?

How can the malleable nature of digital animation allow for representation of landscape mythology through the portrayal of spatial and temporal scales?

Temporal scales in live action cinema refer to the rate at which an action or event is captured, manipulated, and exhibited and how it is therefore perceived by a viewer. In

animation the malleability of the medium allows the imagery to be taken a step further by reinterpreting live action temporal scales in a way that moves past the restrictions of the laws of physics. Animation allows the opportunity to depict events that occur on a scale ordinarily outside of human perception. Spatial scales in live action cinema refer to relationships between elements within a frame that provide cues for an audience. Depicting a human character immediately allows an observer to recognize the scale of the scene. In addition to subject matter cinematic elements of composition, lighting and depth of focus can be used to define the size of a scene.

The focus of this thesis is to describe the process of deliberate manipulation of visual elements (cinematography) to represent narratives occurring at different spatial and temporal scales (i.e. human time and geologic time). In order to depict scales of time to the audience, a filmmaker must consider the audience's perception of real-time. Once this real-time perception is understood it may be explored as a means to convey to the audience events that are presented at varying time scales, faster or slower than real-time.

In her book *The Emergence of Cinematic Time* author Mary Ann Doane defines real-time in cinema as events that are isomorphic with profilmic time. Her use of the term **isomorphic** means equal in form and relation; **profilmic** means everything placed in front of the camera that is then captured on film and so constitutes the film image (Doane 172). Deviations from this type of image creation can therefore be described as **anisomorphic**, meaning unequal in form to cinematic real-time. The digital revolution challenges the concept of real-time in live-action cinema. In his 1995 article "What Is Digital Cinema?" Lev Manovich says, "Once live action footage is digitized (or directly recorded in digital format), it loses its privileged indexical relationship to pro-filmic reality... Live action footage is reduced to be just another graphic, no different than the images which were

created manually” (Manovich). Yet, even as digital cinema becomes the new norm, there are one hundred years of indexical films as well as thousands of years of shared human experience from which an audience forms expectations for the visual qualities of real-time. Thus, in the absence of indexicality cinematic real-time exists in a subjective capacity.

The movement toward digital cinema is rapidly changing the notion that animation and live action are separate disciplines. If we are to assume that we are now in Manovich’s post filmic era we then assume that all cinematic images, regardless of whether they appear to be live action or animation, exist outside of real-time. So from the outset there is no indexical relationship in digital animation, and thus no captured reference to create Doane’s cinematic real-time. These real-time images devoid of indexicality can be considered subjective real-times or **cinematic timescales**. When these events are exhibited they are assumed by audiences to unfold at a rate equivalent to cinematic real-time, the presumed pace of human life. Most narrative animation is anisomorphic, but animated films are designed to be perceived as real-time by an audience. In these cases the director defines real-time in his or her animation, requiring some level of audience acceptance at exhibition.

Temporal control is critical to depicting cinematic timescales in *Here Be Giants*. Animation is the perfect medium to construct this story. Not bound by real-world restrictions, the infinite possibilities allowed for the opportunity to define the visual qualities of each timescale. The true power of animation in *Here Be Giants* is the ability to define for the audience the qualities of a given timescale through visual cues created in the medium of animation. I developed an approach to *Here Be Giants* that emphasized the intentional use of visual elements to convey scale which in turn informed narrative structure.

This thesis paper specifically explores the path taken to build an understanding of cinematographic conventions, develop a narrative dealing with human and geologic scales of time, and then use digital animation to reinterpret the conventions in order to support the story. I begin by providing an explanation of influences for *Here Be Giants* from select outside sources including cinema, video games, and sculpture. These influences are followed by examples of precursory projects leading up to the making of *Here Be Giants*, in which I develop my understanding and practice of cinematic conventions in live action and animation and photography.

In the Process section five major project iterations (waves) are detailed to describe how developing two narrative strands (human and geologic) effects the overall story structure and methods for representations of scale. In my practice-based approach, the creative process for *Here Be Giants* is refocused by examining the final wave of narrative development in terms of temporality in addition to spatial scale.

To explain my concept for *Here Be Giants*, I synthesize my experiences from the waves of development into a discussion of three categories of visual cues that can be used to convey temporal scale to an audience: 1) environmental and atmospheric phenomena, 2) reminiscent subject matter, and 3) cinematographic techniques. I then deconstruct three major sequences in the film that specifically make use of categories of visual cues to depict spatial and temporal scales.

As a form of summary, I reflect on the final animation *Here Be Giants* from as objective a stance as possible for a filmmaker reviewing my own work. I also evaluate the importance of the animation medium as a tool allowing for reinterpretation of cinematographic conventions in order to create imagery to tell a story.

Chapter 1: Background

During my graduate training for landscape architecture much emphasis was placed on distilling high-level site-design concepts into illuminating imagery. Still images rendered usually proposed the use or functionality of a space and served as punctuations (story beats) for the greater overall narrative of the site design. Often projects involved sites that required a great deal of remediation efforts before they could be reprogrammed for human-friendly use. Through these experiences I developed a design thought process that incorporates a temporal element with my decision-making, planning for future conditions. Much of the imagery created for a project involved depicting future states of a current landscape, requiring an informed, directed, and imaginative approach to sell the concept. This element of my prior training informs my long running fascination with the symbiosis of humans and their natural (and built) environment. It is here that the underpinnings of the narratives of *Here Be Giants* took shape. The following sections detail the influences of inspirational works and my prior training as they pertain to the development of *Here Be Giants*.

1.1 Influences

The external influences that shaped *Here Be Giants* are varied and for the purpose of this thesis have been streamlined and condensed. Inspiration came from mediums such as cinema, video games, and sculpture. Reflecting back on these inspirations I can see clear visual and thematic consistencies. Central to these inspirational works are depictions of humans in the landscape, particularly how these depictions convey scalar disparities.

My creative process is visually driven throughout. This is a revelation found through my reflective research in this thesis. While seeking inspiration, through the development of thematic concepts, and even when creating a narrative I am driven by imagery. In the case of *Here Be Giants* I found an affinity for imagery that showed both aesthetically awe inspiring landscape at a massive scale and a human element. When I found imagery that fit these criteria I sought to understand how the imagery was created and why it evoked emotions from me. This process consists of holding an image in my mind, attempting to recapture the essence of that imagery (either through words/descriptions or images), evaluating the creation, and then repeating the process. I attempt to capture moments from which narrative themes can be extracted. I can track *Here Be Giants* all the way back to its inception through imagery. At the earliest stages I was influenced by a love of Western cinema. Particularly the representation of the scalar disparities between humans and landscape which are present in most films of the genre.

In his landmark 1939 film *Stagecoach* John Ford employ imagery portraying humans in a massive natural environment. Ford creates a composition with humans as a foreground elements in front of a backdrop of a massive vista of the Western United States (Fig. 1). Ford makes use of the distant horizon line to convey spatial scale using the audience's ability to understand the scale of this cinematic frame through a shared reference point of the humans in the foreground. This spatial juxtaposition is an essential element present in most Westerns. Sergio Leone's Western masterpiece *Once Upon a Time in the West* (1968) reinforces the impact of the horizon line as a means for conveying the scale of an image (Fig. 2). The foreground element of a man gazing out over the landscape beyond combined with rail road tracks converging on a perspective point in the dead center of the image draws the viewer's attention into the frame.



Fig. 1 – Monument Valley in *Stagecoach* (Ford)



Fig. 2 – Humans, horizon, and landscape (Leone)

The most influential works to *Here Be Giants* are the films of Terrence Malick. Specifically, how Malick creates interdependence between nature and humans in both

thematic and visual portrayals in his work. Malick's first film *Badlands* (1973) uses conventions of Westerns when portraying characters in the landscape. Malick's composition makes use of a defined horizon line and a relatively small human foreground element to convey the scene scale to the audience (Fig. 3). This still image alone frames a protagonist whose body language is a visual representation of his desire to make a name for himself and to set himself apart from everyone else as he becomes an outlaw on the run.

A more recent cinematic example using representations of scale in service of narrative is Malick's 2011 film *The Tree of Life*. The story is comprised of two narrative strands; the story of the universe and the story of a family in West Texas. Naturally the story of the universe spans eons while the familial story takes place over a human scale of time. Malick employs strikingly beautiful imagery of nature to represent reflective moments for his characters. These moments are often accompanied by introspective dialogue and, when coupled with the visuals, convey a sense of wonder to the audience. This technique allows the audience to have some insight into the inner workings of the characters on screen. He seamlessly moves between human and universal scales creating evocative imagery using landscape photography, practical effects, and computer generated imagery to employ familiar techniques of human figures, landscape, and horizons (Fig. 4).

Similar to the image from *Badlands* (Fig. 3) this image is a representation of themes running through all of Malick's work. What Fig. 4 is not fully able to capture is Malick's moving camera. As my understanding of and appreciation for cinema evolved I became acutely aware of Malick's distinct use of the language of cinema while watching *The Tree of Life*. His cinematographic and editorial approach for conveying these natural elements is emotionally impactful for the audience balancing a sense of awe with the familiar. He operates in an area outside of mainstream Hollywood but not quite

experimental. As I am exposed to more and more filmmakers and their work I am able to recognize techniques that resonate with me; I then incorporate these techniques into practice to help discover and develop my own cinematic voice. For *Here Be Giants* I began to imagine how the medium of animation can be used to create adaptations of these conventions to create imagery that pushes beyond physical necessities of live action cinema.



Fig. 3 – Humans and horizons in *Badlands* (Malick)



Fig. 4 – Still image from *The Tree of Life* (Malick)

Malick creates allegorical and visual connections between the parallel strands of time through implementation of the principles of montage established by Lev Kuleshov and the *pure cinematics* of Alfred Hitchcock (Springer, Prince). Both Kuleshov and Hitchcock speak of the language of cinema as creating meaning through assembling images. Kuleshov's famous experiment involved showing an audience one of three separate sequences in which the same image of a person's face was intercut with a different image (Springer). In each case the person's face was interpreted based on the associated image (Fig. 5).

Alfred Hitchcock in a television interview with Fletcher Markle describes pure cinematics as “complementary pieces of film put together, like notes of music [to] make a melody. There are two primary uses of cutting or montage in a film: montage to create ideas – and montage to create violence and emotions.” (Hitchcock). Hitchcock's

perspective allows connections between sequential images to be implied by the filmmaker creating meaning for the viewer that would not otherwise exist. In the final *Here Be Giants* animation two narrative strands are represented: a human interpersonal relationship and a landscape creation myth. Each story takes place at its own temporal scale. Using aforementioned principles of pure cinematics (the juxtaposition of imagery to create meaning). I chose to assemble human and geologic imagery to draw connections between these two parallel narratives.



Fig. 5 – Kuleshov's experiment (Minca)

Just as Malick's films exist between the conventional and avant-garde, so too do director Fumito Ueda's games *Ico* (2001, Fig. 6) and *Shadow of the Colossus* (2005, Fig. 7). Both games "have acquired what passes for canonical status among video games, the twenty-first century's popular art form. Guillermo del Toro, the director of *Pan's Labyrinth* and a devoted gamer, told the British magazine *Edge* in 2008, 'There are only two games I

consider masterpieces: *Ico* and *Shadow of the Colossus*” (Suellentrop). Ueda’s games offer sprawling environments with very little explicit way finding to distract from the immersive narrative. These two games powerfully depict humans as tiny figures in a massive landscape in a way that both thematically and compositionally informs *Here Be Giants*. In works like *The Western Landscape* and *Cracks* these vast environments draw solitary figures into their landscape toward the horizon. For both *Ico* and *Shadow of the Colossus* the player is cast into a living world with its own unique and rich history. The scale of the world and the amount of downtime between scripted events allows the environment to be a character in and of itself because the player spends so much time exploring.



Fig. 6 – Screen capture from *Ico* (Ueda)



Fig. 7 – Screen capture from *Shadow of the Colossus* (Ueda)

Ueda cites surrealist painter Giorgio de Chirico as inspiration both visually and thematically specifically de Chirico's painting "The Nostalgia of the Infinite" (Fig. 8 - LEFT). Ueda went so far as to create his conceptual art in de Chirico's style (Fig. 8 - RIGHT). Both men's paintings convey a sense of grand scale enveloping the human characters. The style of the painting represents the condensed, pure emotion that Ueda later conveys to his audience in the video game. There is a simplicity of environmental detail in both the conceptual artwork and the final video game that is accentuated by the strong compositional and lighting choices where shadows play a key role in highlighting the characters in their environment. In these examples the juxtaposition of the human characters to their environment immediately has a viewer wanting to understand how they interact, their history, and their genesis. This aspect of composition is what I wanted to capture in my animation; how simple compositional elements and differences in scale can inform a narrative. Similarly, while creating my concept art I took all of the feelings temporality, scale, and landscape and condensed them into singular images.



Fig. 8 – LEFT: “The Nostalgia of the Infinite” (de Chirico) RIGHT: *ICO Art* (Ueda)

In addition to cinema and video games, the work of sculptor Antony Gormley, who explores the effects of materiality and degrees of abstraction in the depiction of the human form, helped to inform creative decisions for *Here Be Giants*. Many of his sculptures are displayed in nature providing context for an additional layer of interpretation beyond the physical form. Putting the sculpture in the landscape (Fig. 9 – LEFT) as opposed to in a museum or gallery forces the viewer to compare the figure to the grandness of its surroundings, and because of this Gormley’s sculptures elicit emotions about the scale of humans in the landscape that resonate with me.

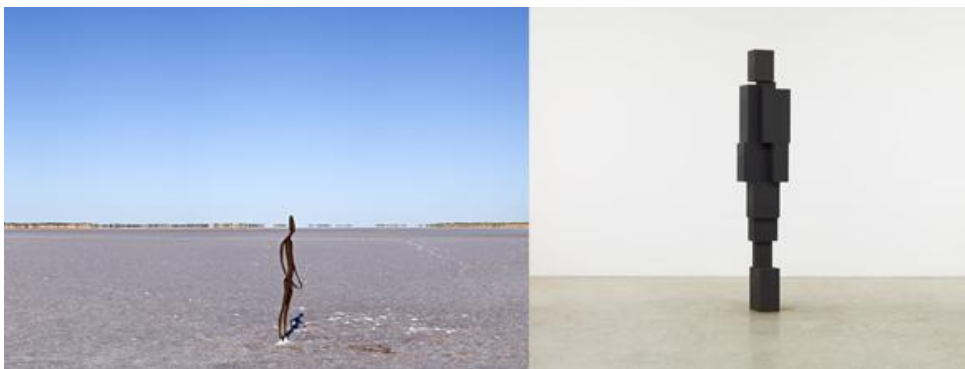


Fig. 9 – LEFT: “Insiders” (Photo by Andrijich) RIGHT: “Ward” (Photo by White)



Fig. 10 – “Horizon Field” (Photo by Tretter)

There is often a loneliness that his sculptures portray (Fig. 10) as they stand solo in at times barren or untouched landscapes. These depictions of man and nature provide an example of how even a static figure can carry significant emotional weight. The figures themselves are often created with varying degrees of abstraction or minimalism (Fig. 9 – RIGHT) especially in some of his later work through figures that are only minimally detailed made of conglomerates of geometric shapes. Yet his decisions when creating his sculpture’s posing gives the illusion of life and human emotion. Gormley's ability to evoke emotion simply through posing and contextualization helped my decisions when composing shots as I sought to do the same with minimal character animation and dialogue.

Another influential source in the development of *Here Be Giants* is my personal observations of landscape and culture while traveling across the United States, Brazil, and Ireland. During these travels my awareness of culture, myth, and legend surrounding

physical features of the landscape were expanded. Most significantly the anthropomorphic island known as the “Sleeping Giant” off the coast of the Dingle Peninsula in County Kerry, Ireland provides thematic and visual inspirations for *Here Be Giants* (Fig. 11). Folklore holds that the giant, here laid to rest, built the Giant’s Causeway of Northern Ireland, a natural landscape formation that has marveled humans worldwide (Jones). These natural elements that resemble humans are given the name *mimetoliths* by Dr. R.V. Dietrich professor Emeritus of geology at Central Michigan University (Dietrich). This landscape mythology is evident in *Here Be Giants* as Vast transforms his landscape with every step and literally holds the human’s world in the palm of his hand.



Fig. 11 – The Sleeping Giant mimetolith (Walsh)

Through a combination of my own experimental works and outside influences I developed an approach to *Here Be Giants* that emphasized the thoughtful use of visual elements to convey scale and inform narrative structure. These outside influences serve to support an exploration into cinematic representations of humans and their relationship with

the landscape. These still images drove me to understand how to create similar imagery that captures these interests. The deep emotional impact of Malick's impressionistic narratives conveyed deftly with majestic imagery were all elements I strove to master in my own work. Ueda and Gormley highlight the ability of simply positioned figures in landscape to provoke deep meaning to the audience about the human position in the world. While these three influential artists' work have much in common it is also the uniqueness of their voices in their respective disciplines that inspires my approach to my work. The malleable nature of animation allowed me to develop my own visual techniques to convey the grandiose themes of humans-landscape relationships.

1.2 Previous Projects

The works leading up to *Here Be Giants* have been a series of visual explorations focused on developing techniques to convey scale and time through visual cues. These works consist of animation, live action video, and photographic explorations. These projects (*Object*, *Cracks*, *The Western Landscape*, *Dad's Side*, and *Mom's Side*) have provided inspiration and subsequently were instrumental in the conceptual and technical development of *Here Be Giants*.

The short film *Object* (2012) explores methods for conveying scale and identity to an audience within a cinematic frame. The piece uses an obscured subject and background with visual cues of scale removed allowing spatial information to be given to the audience in a very controlled manner (Fig. 12). The identity of the object is purposefully abstract to conceal the true subject of the piece thereby eliminating preconceived audience prejudices. This forces the audience's attention onto the meaning generated from the assembly of images. The work is not a traditional narrative, but there is a structure incorporating anticipation and a reveal that gives the piece an emotional arc.

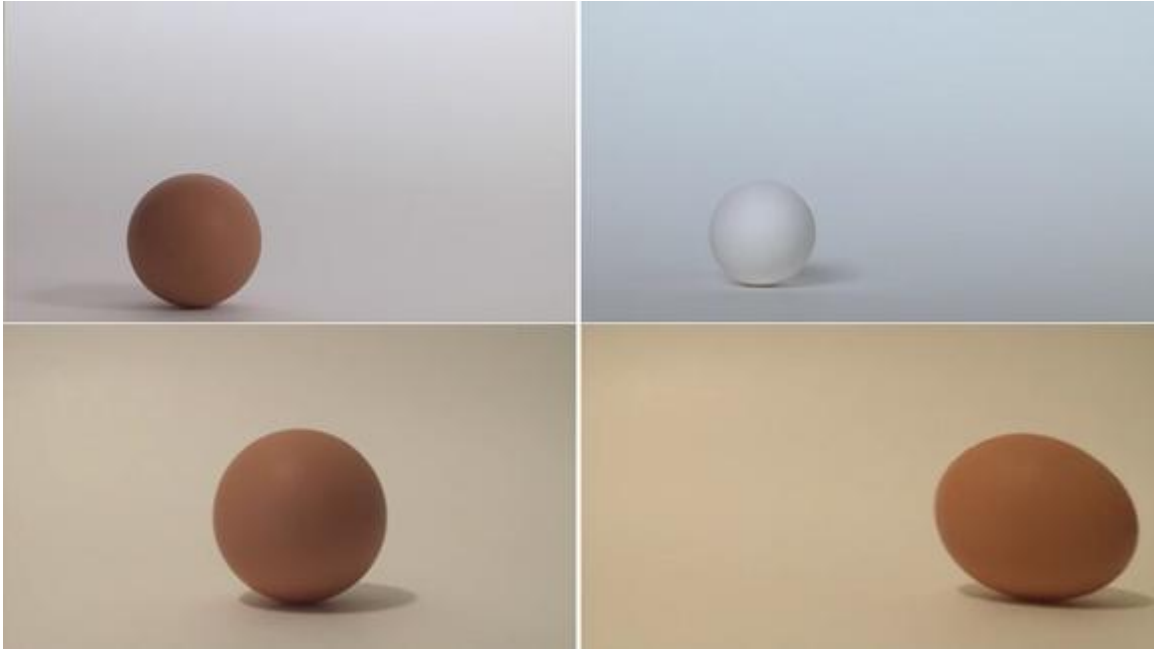


Fig. 12 – Still frames from *Object*

The ambiguity of the environment obscures the fact that the shape is in fact an egg (Fig. 12). The project was an exercise in deciding when and where to reveal the true nature of the object. When this is elucidated the audience is given visual cues to the size of the object (the egg) and subsequently the size of the environment. From certain points of view the egg appears either perfectly circular or spherical. With this simple setup of egg and poster board (subject and canvas respectively) framing was explored with the ambiguous spherical side of the egg filling various amounts of the frame. The more of the frame the sphere occupied the larger the object appeared and vice versa (Fig. 13). Scalar ambiguity is resolved when the wooden table-top at the end of *Object* provides an immediate point of reference to scale (Fig. 14).



Fig. 13 – Still frame from *Object*

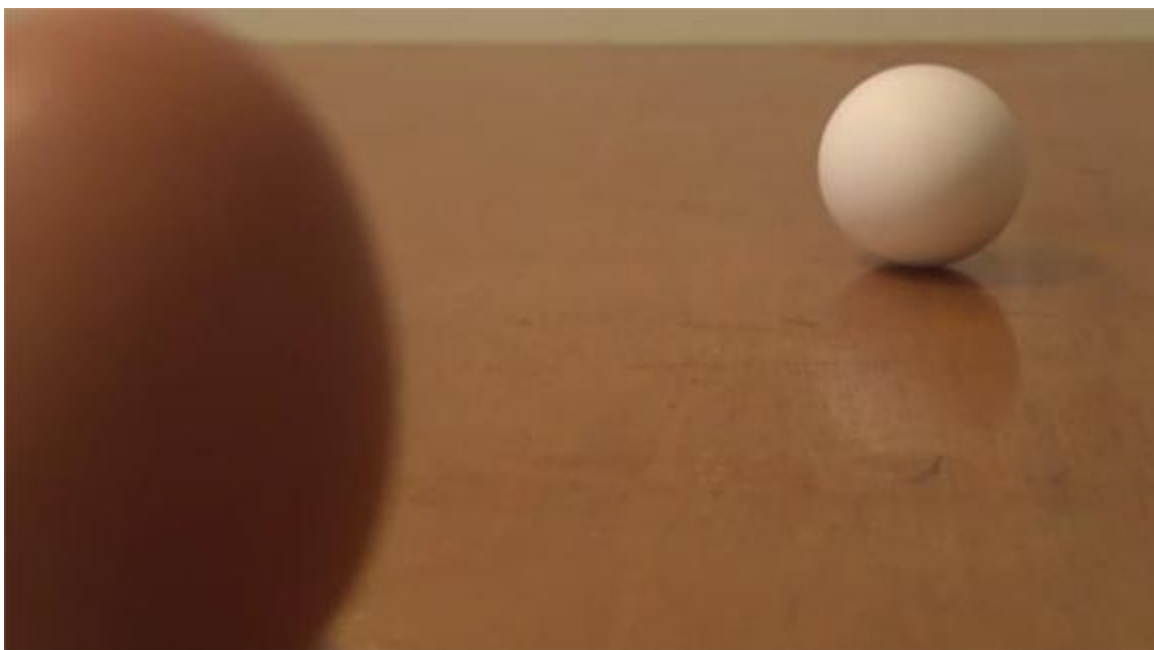


Fig. 14 – Still frame from *Object*

In addition to the texture of the table, cues to scale are given through cinematographic techniques: particularly depth of field. The sharp areas of the image (versus the softer out of focus areas) tend to be a product of an object's proximity to the camera (or human eye); thus, the human brain recognizes shallow depth of field as miniaturizing an object and images with deep focus as larger in scale (Held). Fig. 14 shows a moment later in *Object* where depth of field is used to hint at a narrative thread, a conversation. The intent for this

sequence is to use cinematographic conventions to relate a story without narration or performance. A few techniques used to help convey a conversation are: two-shots (compositions with two subjects in the frame), pulling focus between two eggs, and the sequence of images. This project helped me to develop methods of creating spatial (through the lens) and sequential (through editing) compositions that were assimilated and applied to subsequent 3d digital animation projects including *Here Be Giants*.

Explorations of scalar representation are the root of the photographic study *Cracks*. In this project I explicitly consider my work from the perspective of my audience. Through digitally composited photographs I explore how to influence an audience's perception of scale, by manipulating depth of field, defining horizon height, and compositional choices I made tiny plants and piles of rock resemble trees and mountain ranges respectively. Creative decisions were made to add or remove elements and imagery to control visual cues to scale. Thus this highlighted the importance of using environmental elements to control the way an audience might interpret of scale.

The canvas in the representative image in Fig. 15 is asphalt and is relatively scale ambiguous. The tiny plants and chunks of asphalt have the potential to be equivocal (just as the egg in *Object*). The photographs were shot from a ground-level point of view and the texture was framed to take on qualities of a mountain or forest on a grand landscape. This perspective abstracts certain visual cues and allows for scalar exploration. The original background for each shot contains visual cues to the scale (cars, trees, fences, etc.).



Fig. 15 – Final composited image from *Cracks*

By replacing the original backgrounds these visual cues to scale are removed. Background plates were made by taking photographs at each of the cardinal directions to match light quality and shadows (Fig. 18). These elements were then composited together digitally in Adobe Photoshop, and it became necessary to choose where the new horizon line for each image would be. This was an opportunity to give the scene a scalar reference point. The result of the design decisions is a series of images that appear to be both large and miniscule in scale depending on the audience's perspective (Fig. 19). The tiny cracks become canyons and small pieces of asphalt form mountain ranges. Some of the images are more effective than others, and those that are less effective tend to be the ones where the scale is obvious just like the wood grain texture in *Object* (Fig. 14). The framing of open vistas like those in Western genre cinema informed my compositional decisions for

Cracks. The knowledge gained from defining methods to portray scale and the role of the environment helped build a framework for decision making that would prove invaluable for the development of *Here Be Giants*.

An example of a method of controlling scale through photography can be found through the use of tilt-shift lenses. Used largely for architectural photography images made with tilt-shift lenses have perspective lines that run parallel that would otherwise converge resulting in a miniaturization effect. This was used to convey a sense of otherworldliness during this interstitial timescale. In David Fincher's 2010 film *The Social Network*; he used a tilt-shift effect for practical reasons to allow footage from two separate locations to edit together seamlessly. It also gives the sequence a miniaturized, frenetic pace (Fig. 16).



Fig. 16 – Tilt-shift effect in *The Social Network* (Fincher)

I learned more about photographic techniques while working on *Cracks* including how longer or shorter exposures can be used to control the final image. In the case of *Cracks*, I over exposed the images by a stop. This gave me the feeling of a landscape the way it might be portrayed in a classic Western film by emphasizing the intensity of the sunlight.

Photographer Hiroshi Sugimoto has created a great deal of work dealing with extremely long exposures. Especially his series of photographs entitled *Theatres*, which use long exposure to capture the light from an entire film. This results in a pure white exposure of the movie screen and eerie light illuminating the empty theater. Understanding exposure in photography was an essential tool used later when I moved into 3D computer animation.



Fig. 17 – Radio City Music Hall (Sugimoto)



Fig. 18 – (Left) Background plate (Right) Original photograph



Fig. 19 – Set of final composited images from *Cracks*

More than any other film genre the setting of Westerns requires a juxtaposition of scales between humans and the natural world. The two are often in such conflict that it drives the story. Whether through themes of control (building a railroad in *Once Upon A Time in The West*) or greed and progress (drilling for oil in *There Will Be Blood*) there is often a strong correlation between theme, the natural environment, and humans' place within that environment. The next project in the sequence leading up to *Here Be Giants* is entitled *The Western Landscape*. This project explores compositions that display the grand scale of a landscape as well as the relatively miniscule size of human elements. It builds upon what I discovered through creating the images for *Cracks* by providing a similar arena for exploration. While *Cracks* involved creating compositions in a reactive manner with an established environment and subject matter, using 3D computer animation for *The*

Western Landscape gave me full control over every aspect of the objects and the environment.

The Western Landscape explores techniques to convey the feeling of vastness in a digital environment. Operating in an infinitely customizable digital canvas required limiting variables; so the characters used are simplified (both characters were the same "IK Joe" rig available for free¹) and the camera is limited to static shots. Two generic character models were placed in the scene: the Cowboy and the Giant. Using real world units within Autodesk Maya, the Cowboy is scaled to reflect a six-foot tall human; the Giant is 4,000 times the size of the Cowboy.

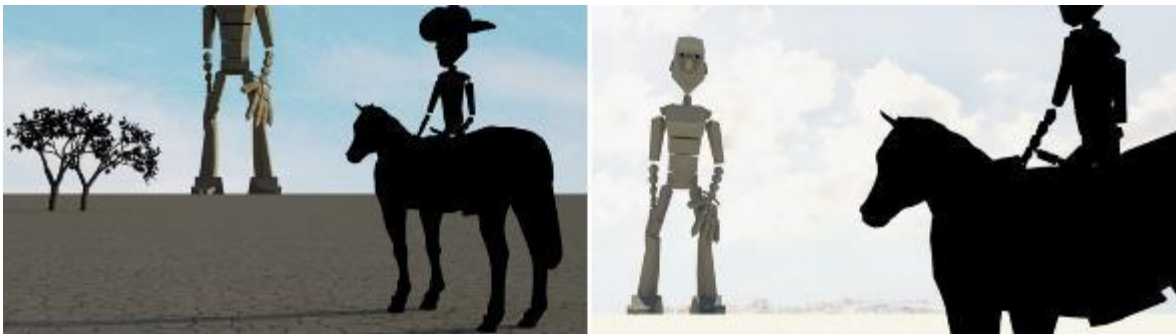


Fig. 20 – *The Western Landscape* still frame

I explored how these two characters of differing scales might interact in a narrative facilitated by cinematography. Using the distinct language of the Western genre I explored “visually cheating” compositions. This concept of cheating is universally used in live action cinema in lighting, actor blocking, compositions, and camera position. It refers to controlling the elements in the frame in such a way as to maximize the narrative effectiveness of the scene regardless of whether or not the scene is kept to a physically

¹ The free rig can be found here: <http://www.rigging101.com/freestuff.htm>

accurate space (Malkiewicz and Mullen). Compositions in this scene were cheated through forced perspective to have the two characters in the same frame (Fig. 20). With this technique a distant, massive object can appear to be relatively the same size as a human sized character that is much closer to the camera assuming that there are no depth of field cues. This is employed to great effect in many photographs and films. (Fig. 21)



Fig. 21 – Photographic forced perspective (Left - Almotar/ RIGHT - Travers)

Adding trees provided a reference point to the viewer (Fig. 22); the scene's scale is grounded and immediately the Giant registers as much larger than the Cowboy. Other techniques explored for their ability to define scale were light and shadow, texture, and camera angles. For instance in Fig. 23 the image on the left makes use of a low camera angle to frame both the Cowboy and the Giant; the right image's aerial perspective allows the shadows to act as a cue to the scene scale.



Fig. 22 – Forced perspective with scalar reference



Fig. 23 – LEFT: Camera angle for scale RIGHT: Texture and shadow exploration

I began to imagine potential narratives during this exploration reacting to the images I was creating. I asked myself: What material would this giant character be made out of? Why is he the lone giant on this barren landscape? What effect does his size and movement have on the surrounding landscape? In *Here Be Giants* the Mountain Giant character is intended to be an extension of the landscape, a sentient glacier. It raises questions about how an ambulatory mountain capable of shaping the earth would impact a human scale character. Thematically this reinforces my interest in human-landscape relationships which is visible in much of the imagery from influential artists like Malick, Ueda, and Gormley. The narrative reasons for the interaction between these two characters,

especially how to depict said interaction, was something I explored throughout the entire process of creating *Here Be Giants*.

With these questions in mind I explored the 3D scene. After I posed the Giant character in such a way that one of his arms was dragging behind him I searched for interesting compositions in much the same way as I did for *Object* and *Cracks*. Using what I learned from *Cracks* about horizons and scale, I angled the camera perspective to emphasize the massiveness of the Giant's fist. A frame was rendered out of Maya (Fig. 24), and this was used as a reference for conceptual artwork. This rendered frame formed the base on top of which I layered imagery. The shadow in particular was paramount when I added in the human scale character because the human on horseback's shadow gives him a presence in the scene that is larger than his physical size. The main subject of the concept art is the oasis inside of the hand, and it felt appropriate that the surrounding landscape would be barren to provide contrast. The result is the "The Giant's Palm" (Fig. 25); a piece of concept art that was the spark that grew to be *Here Be Giants* and is still visible in finished frames of the animation (Fig. 26).

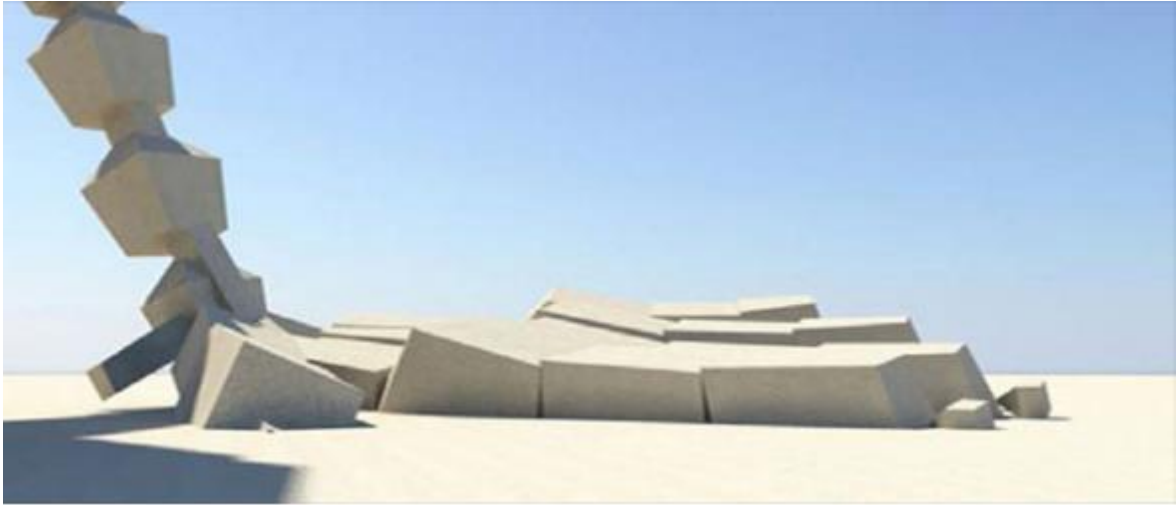


Fig. 24 – "The Giant's Palm" inspirational image from *The Western Landscape*

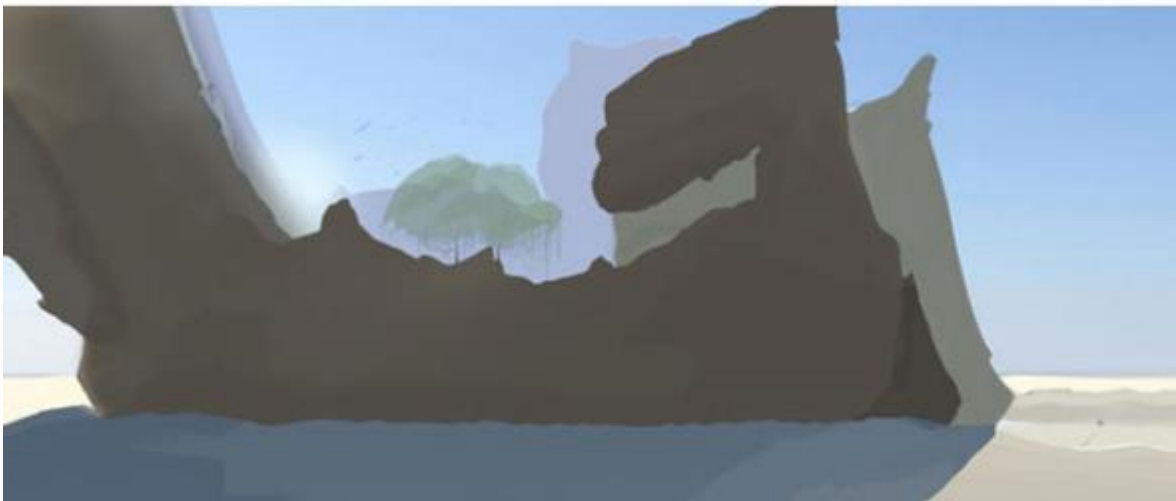


Fig. 25 – "The Giant's Palm" concept art



Fig. 26 – "The Giant's Palm" still frame from *Here Be Giants*

These images successfully created a mood for my narrative. The contrasting aspects of spatial scale and nurturing environment versus desert started the narrative dialogue of a character exploring the unknown, the mysterious, and the familiar. A second piece of concept art was created using the same techniques. I chose a different perspective in the scene, an aerial view of the Giant's palm oasis (Fig. 27). On top of this image I added details of the oasis (Fig. 28), and the final image in *Here Be Giants* still conveys the elements from this early exploration (Fig. 29).

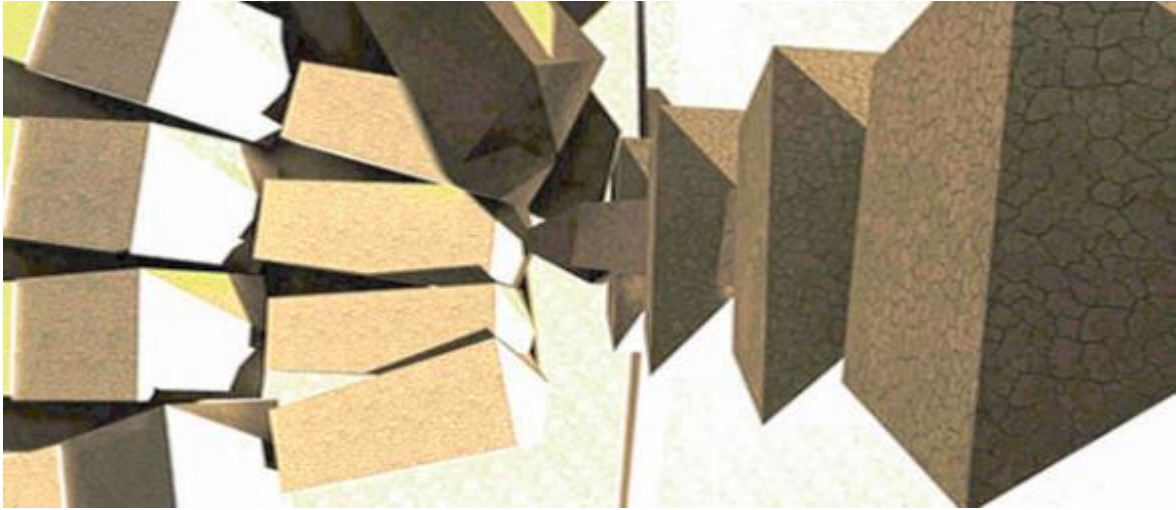


Fig. 27 – "The Giant's Palm" oasis inspirational image



Fig. 28 – "The Giant's Palm" oasis concept art



Fig. 29 – "The Giant's Palm" oasis still from *Here Be Giants*

The final two projects that directly influenced *Here Be Giants* are a pair of short, personal documentaries: *Dad's Side* and *Mom's Side*. These projects contributed an understanding of the importance of building an emotional connection with an audience. In these works I applied my understanding of cinematic storytelling to a subject which I was familiar, my parent's stories. This inside perspective allowed me to trust my intuition when deciding what emotional beats best convey the story of their points of view to the audience and how to assemble these beats for those not familiar with these two people but familiar with the universal themes of parenting. This immediate emotional connection to the material for me as the director is a luxury. Most future projects (*Here Be Giants* included) are not directly a depiction of my life and relationships. When deciding what narrative strand would be the focus/entry point for the audience for *Here Be Giants*, it was helpful to draw upon the lessons learned from these two short documentaries about the need to build emotional connections with an audience through shared experience. *Here Be Giants* was intended from the outset to be relatable to anyone of any cultural background. Both of

these short films incorporate narration and a personal emotional perspective to build rapport with the audience; two concepts which anchored the development *Here Be Giants*' story and allowed me to apply similar decision making processes as those employed in *Dad's Side* and *Mom's Side*.

Through these projects I worked with traditional cinematic conventions to learn how cinematography is employed to tell a story in a time based medium. The specific use of the cinematic language in Western genre films acted as a visual thread through each of these projects. Through this reflective research I realize that the process of working through these previous projects was to educate myself on cinematic conventions in order that I might later be able to reinterpret these conventions in the medium of animation to tell the story of *Here Be Giants*.

Chapter 2: Concept Development of Representations of Scale

The nonlinear development for *Here Be Giants* was an organic process of learning through failure and success. It is through this reflection that I am able to now identify reasons for decisions that at the time were largely intuitive. This style of learning by doing ultimately shaped the final concept of *Here Be Giants* transforming my approach from spatial scales to include temporal scales. It was not until approximately halfway through the entire process that temporal scale became the crux of the project. A series of six waves of storyboards, previsualization (previs) sequences, animations, and numerous drafts of the screenplay were employed in the development of *Here Be Giants* (Fig. 20). These precursory experimentations informed my decisions for how to best depict cinematic timescales and shaped the narrative of *Here Be Giants*. This discussion of the waves represents a pointed retroactive perspective, and each project is highlighted to emphasize their contributions to the narrative and depiction of spatial and temporal scales in *Here Be Giants*. Section 2.1 highlights pivotal decision making points in concept development that deal with developing cinematic representations of disparate spatial scales (waves 1-5). Section 2.2 picks up with the development after the shift from a focus on spatial relationships to temporal (wave 6).



Fig. 30 – Waves of development diagram

2.1 Developing the Representation of Spatial Scales

In this section I outline the various iterations that preceded my final animation in order to provide insights into my creative process. Each of the five projects detailed here helped hone my understanding of the cinematic language as applied to animation. Intuitive decisions pushed each iteration, shifting my perspective and increasing my appreciation of the art form while challenging me to push my narrative further. Drawing initially from the cinematic language of the Western genre, the projects discussed in this section represent an evolution in the understanding of conveying narrative through imagery. My previous works *Cracks*, *Object*, and concept artwork entitled “The Giant’s Palm” led to the first wave of development.

Wave 1: *The Giant’s Palm*

As detailed earlier in Section 1.2 a major driving force behind the visual style throughout the iterations of *Here Be Giants*’ was the concept art called “The Giant’s Palm.” The image depicts a massive incomplete forearm and hand clutching an oasis. The compelling nature of the discordant physical sizes of the tiny character on horseback (the Nameless Hero, bottom right of image) and the massive rock hand (the Mountain Giant) incited the narrative and visual development of *Here Be Giants*. It is the earliest visual representation of my interest in parallel narrative strands for this project. “The Giant’s

Palm” (Fig. 31) captures an intersection of two worlds hinting at a larger narrative that extends beyond this single moment in time. It generated speculative questions that were explored in search of potential narratives: When did these two characters meet? What is their history with one another? Are they aware of one another? Where did this fist come from? Where is the rest of this giant?



Fig. 31 – "The Giants Palm" with environmental context

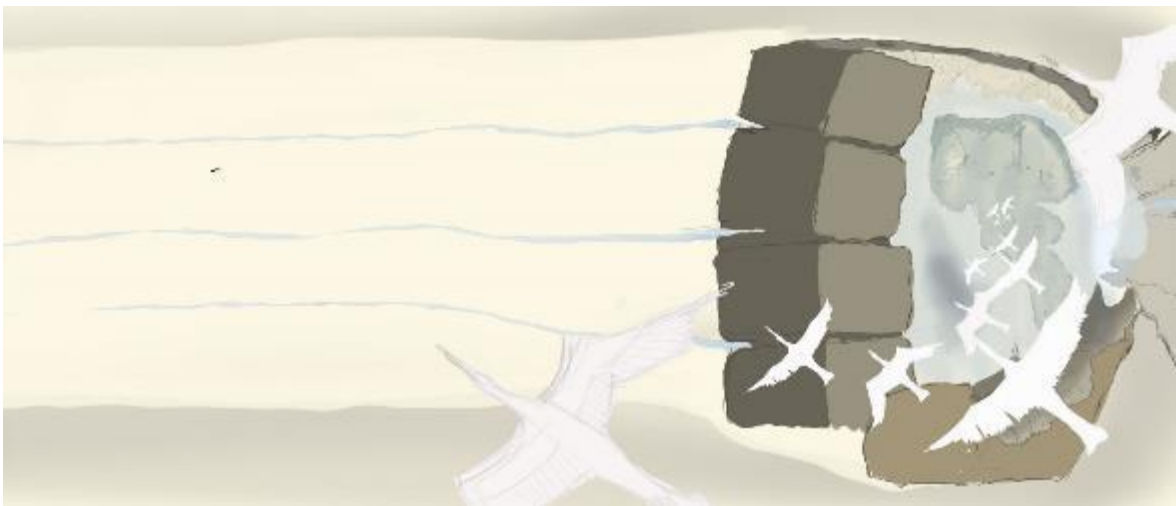


Fig. 32 – Oasis concept A



Fig. 33 – Oasis concept B

These initial questions fueled the creation of additional concept art (Fig. 32 and Fig. 33), which were then expanded into a series of storyboards with simple animation known as a boardomatic. This boardomatic shows the Nameless Hero approaching the Giant's palm on horseback. Compositions of the lone human figure in a massive landscape are juxtaposed with close ups of the character's face. Cinematographically the work builds to a final reveal of the Giant's palm. The decision to deliberately assemble imagery of such disparate spatial scale built a narrative arc that consisted of three phases. First the protagonist is introduced in the context of his expansive environment as he travels toward an unknown goal (Fig. 34). The next phase reveals to the audience the protagonist's goal: the desert oasis inside of a giant rock formation (Fig. 35). The final portion of the narrative is imagery from the inside of the oasis. It is ambiguous whether or not the hero physically makes it into the oasis or if it is simply his imagination (Fig. 36).

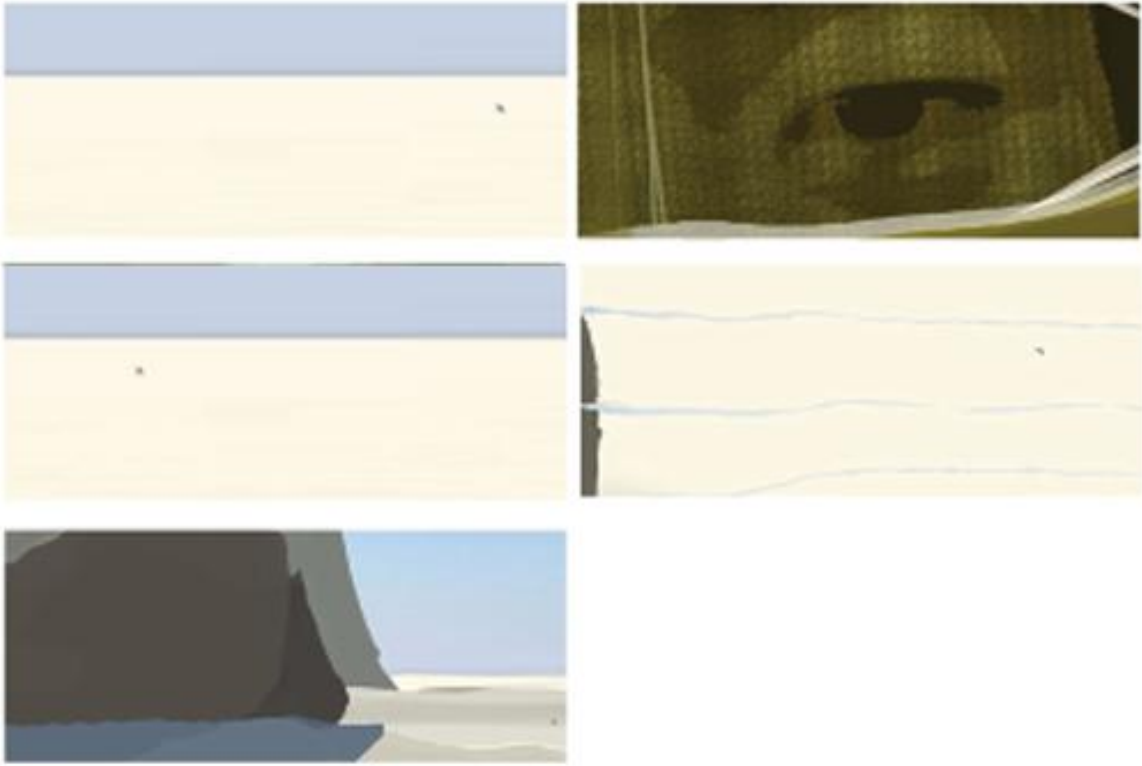


Fig. 34 – Phase 1: The Hero and the environment

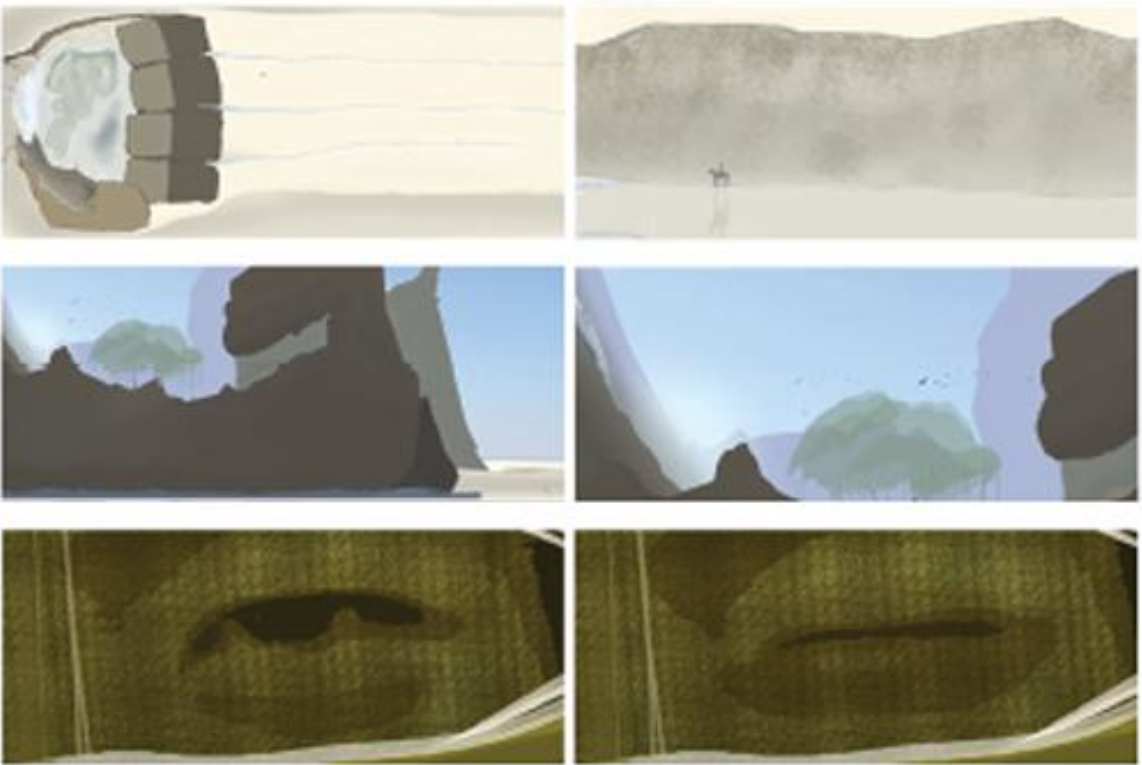


Fig. 35 – Phase 2: The Hero's goal



Fig. 36 – Phase 3: The oasis

I received feedback on this boardomatic on October 10, 2012 when I met with visiting director and OSU alumnus Steve Martino of Blue Sky Studios. During this interaction Steve encouraged me to continue my exploration of scale. He said the strongest aspect of this boardomatic was how scale is conveyed through the use of environmental details like trees, birds, and waterfalls. He illustrated these types of explorations of spatial scales by referencing the relationships between characters and environment in *Ice Age 4*. Fig. 37 shows concept art for *Ice Age 4* where the characters are riding a giant ice block. They are barely visible in the frame as a tiny speck in the middle of a stormy sky. Martino mentioned that pushing the relationship between the spatial scales to the extreme is a luxury that is feasible in a student project. Once at the level of larger studio animation there is pressure to adhere to conventional approaches, leaving less room for experimentation. Artistic validation and encouragement from an established filmmaker with a shared interest

in juxtaposition of scales catalyzed the transition into the second wave of *Here Be Giants*' development process: *Displaced Hero*.



Fig. 37 – Scale of characters and environment in *Ice Age 4*

Wave 2: Displaced Hero

The goal for the overall project was to develop the individual narratives for both the Mountain Giant and the Nameless Hero while continuing to expand on Martino's suggestion of pushing the depictions of scale to the limits of the cinematic frame. "The Giant's Palm" artwork continued to inspire these works as my interest in dual narratives is based on the two characters in that piece. The intent was to edit the two individual narratives together to create one complete story. I set out to develop each story individually and in this wave I focused on the human story.

The journey in this animation is a character study following similar story beats to *The Giant's Palm* boardomatic. It begins with the Nameless Hero already lost in the desert, crawling towards a setting sun with what appears to be a mountain range on the horizon.

The arduous environment depicted in this work is intended to give the viewer an emotional connection to the character (an element lacking in wave 1). The desert scenario portrays a character struggle with which an audience can immediately empathize. Exploration focused on how best to show the passage of time to emphasize the ordeal of the main character.

As the protagonist crawls through the desert in real-time (seconds) the sun sets in the background. Narratively this shot needed to convey a lack of forward progress or an unattainable goal. The use of unmanipulated motion captured animation, which is one of the few aspects of animation to incorporate real-time elements, temporally grounds the animation in human real-time. This is the temporal equivalent to visually grounding scale through the use of trees in *The Western Landscape* or the wood-grain tabletop texture in *Object*. The sun setting is my first exploration depicting the passage of time at a scale outside of real-time. The setting sun effect was created in postproduction (in Adobe AfterEffects) and it laid the foundation for future decisions when depicting scales of time. Through compositing layers the sun leaves a trail (afterimage) in the sky a technique further explored in the *Dayu's Meditation* sequence in the final *Here Be Giants* animation. Just as *Cracks* explored multiple spatial scales in a single image, this shot from *Displaced Hero* (Fig. 38) represents an exploration using animation to depict differing timescales within a single frame. This sequence in particular affirmed my intent to further develop the depiction of scales of time because I am asking the audience to accept the human scale movement occurring simultaneously with an event outside of human perception (a day portrayed in seconds).



Fig. 38 – Depicting two scales of time in *Displaced Hero*

Feedback from my professor and classmates helped me assess the effectiveness of the techniques used to portray time and narrative. The most successful imagery of *Displaced Hero* is the scene that juxtaposes temporal scales (Fig. 38) by showing the Hero crawling toward the oasis. The feedback pointed out that what little story could be inferred was muddy and ineffective. The depictions of scale and time did not appear connected to the narrative in any intentional or meaningful way in this wave. I interpreted this feedback

to mean that the narrative did not read well because it was only half of the larger story. In later projects I aimed to address this by expanding the story in my screenplay to help frame decisions about what aspects of his narrative needed to be displayed visually to the audience. In the next wave I shifted my focus to the second narrative, the landscape mythology of the Mountain Giant, in a project entitled *Here Is Vast*; I sought to remedy this lack of connection between depictions of scale and narrative development.

Wave 3: *Here Is Vast*

Here Is Vast focused on the development of the narrative for Mountain Giant named Vast. I set about imagining a world and a storyline for Vast beginning with some lingering questions. Are the Mountain Giants self-aware? What is their purpose? Are they protectors or are they destroyers? Do they purposefully sculpt the land? These questions, my interest in landscape mythology, and travels to Ireland as mentioned previously helped guide my creative decisions in response to these questions. Design considerations were rooted in the concept that the Mountain Giants were essentially the landscape personified. I drew rough sketches exploring the idea that the giant was once a mountain (Fig. 39).

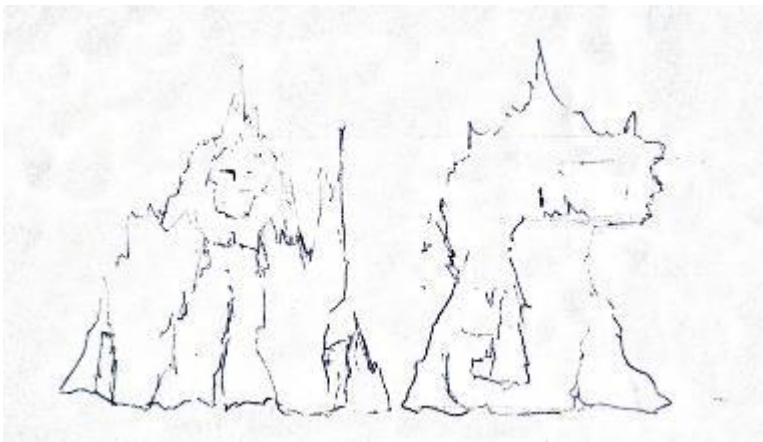


Fig. 39 – Early Sketch of Vast

To further expand I shared my sketches and the Giant's Palm artwork (Fig. 39) with ACCAD colleague Nicole Lemon to collaborate on visualizing my intent for Vast's design. Visual cues in the conceptual artwork like a tree line, icy mountain peaks, and waterfalls help to convey his physical scale and his origin from the landscape (Fig. 40). Vast's character design evolved as an exercise in conveying spatial scale through controlling these visual cues just like my previous exploration during *Object* and *Cracks*.



Fig. 40 – Vast concept by Nicole Lemon

The same need to convey massive scale was considered when creating Vast's movement. Motion-capture actors lent their performance to help develop Vast's gait; various props and pantomime helped provide physicality. The movement of the giant, especially the effect that gravity would have on an object of his mass, is essential to convey his scale. Raymond Fielding's book *The Technique of Special Effects Cinematography*

offers an applicable perspective on the time-scale relationship when shooting miniatures for live action. He writes, “If a ‘gravity drop’ miniature is to appear realistic on screen, the speed of its moving components must be slowed down an amount which is proportionate to their reduction in scale” (Fielding 328). What this means for live action is that there is a mathematical formula to apply when using miniature sets and props to make them appear as realistic as possible when they are shown on screen. This concept relates in theory to the use of motion capture (mocap) to animate the rock giant, but there is no mathematical formula for the movement of Mountain Giants. So rather than using a known mathematical approach I made use of countless iterations of the mocap data for Vast’s walk cycle. Searching for a combination of actor performance and speed that best conveyed Vast’s magnitude.



Fig. 41 – Vast’s harsh environment

Vast’s narrative took shape alongside the character design and movement. His major task in the story was to sculpt the landscape. This idea informed the character design, resulting in his massive hand that carves up the earth in his wake. Vast’s

environment also provided an opportunity to give visual cues to his scale. The animation sought to show spatial strata, demarcating two distinct environments, thus giving the impression of height and scale. The qualities of the higher altitude atmosphere (darker colors, harsher environments) were chosen to contrast the known human environment (bright lights and desert strata). I used wind, weather, and lighting changes to convey this change in altitude. The harsher elements in the higher altitudes provided an obstacle for his character journey (Fig. 41).

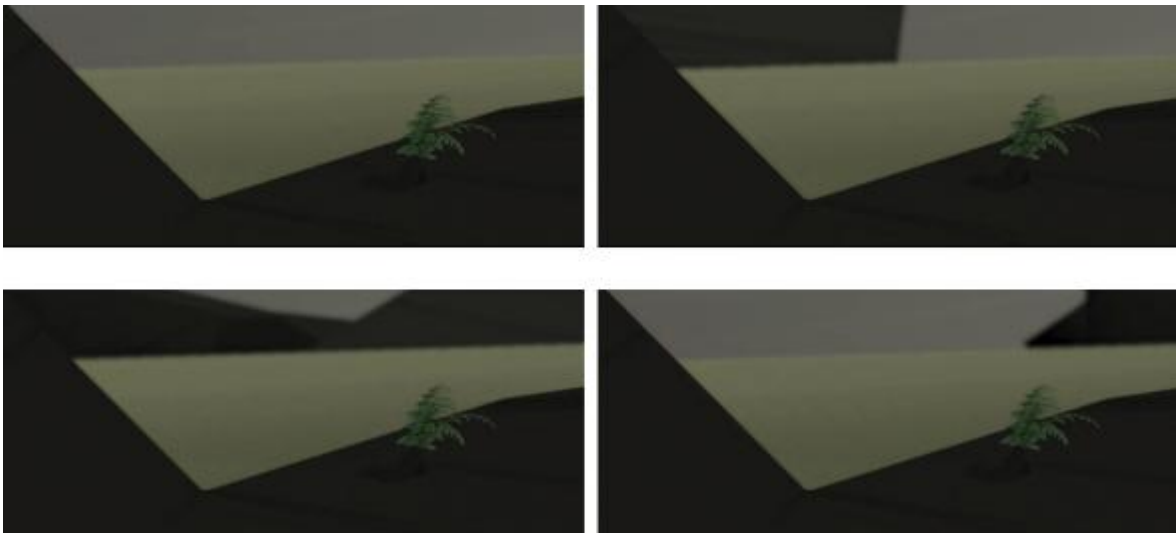


Fig. 42 – Depiction of spatial disparity

While not as explicitly temporal as the Nameless Hero's setting sun exploration, *Here Is Vast* has a sequence explicitly calling attention to disparate scales in the same composition. The opening shot for *Here Is Vast* orients the audience at an intimate scale by framing a small plant on a rock (Fig. 42). The plant immediately gives spatial cues, drawing upon the audience's shared experiences with plants in everyday life. In the soft focus background a rock wall moves past; this uses the established scene scale to inform

the audience as to the scale of Vast. This shot represents a spatial shift in perspective and was my sole approach to connect the two stories for most of the development process (waves 1-5). It was not until later that I found the character really required a temporal shift in perspective.

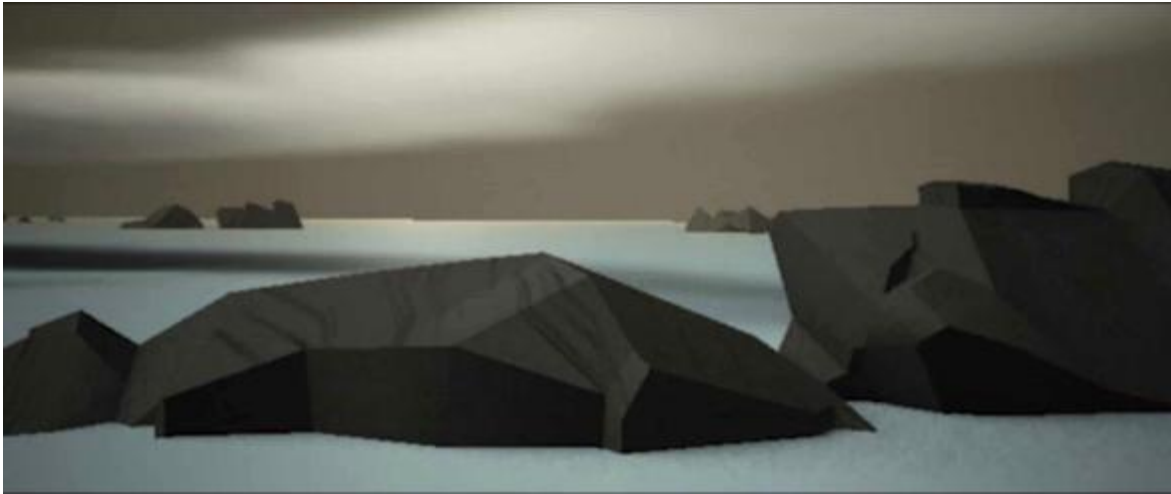


Fig. 43 – Final frame of *Here Is Vast*

Feedback for *Here Is Vast* was positive as far as visual development. In particular people were drawn to the color palette and simplified visual detail. This feedback about visual style was encouraging given my interest in a non-photorealistic rendering style. Especially effective was the final image of the animation, which was a slow reveal of Vast in an ocean filled with other rock giants (Fig. 43). It showed that he was not alone in his great quest that there were other Mountain Giants that came before. This is a direct reference to the influential “Sleeping Giant” island of Ireland’s Dingle Peninsula (Fig. 11). Sensing that the narratives were independently developed enough, the next step was to explore how they could be assembled into a larger story. From the beginning the intent was for the human and rock giant narratives to be combined and shaped in editorial.

Wave 4: *Of Capes and Rocks*

The fourth wave of development was an editorial exploration assembling the two narrative strands of *Displaced Hero* and *Here Is Vast* to imply connections between the two stories. For instance there was a moment in *Here Is Vast* where rocks break off of Vast's back (Fig. 44) and smash to the ground. As Vast walks away his hand is dragged out of frame and the camera lingers on the rock pile (Fig. 45). When editing I placed the opening sequence of *Displaced Hero* (with the sun setting experimentation) at this moment and then jumped back to Vast's storyline. I imagined Vast sloughing off some rocks as a relatively minor occurrence for the mountain giant, but when experienced from the perspective of the human character it would be a cataclysmic life-altering event that rips apart the landscape. These two different interpretations highlight the importance of narrative perspective. There are a few other instances throughout the narrative where I tried to find connections between the two stories. I arrived at an iteration that incorporated the footage from both *Displaced Hero* and *Here Is Vast*.



Fig. 44 – Vast sloughing off rocks

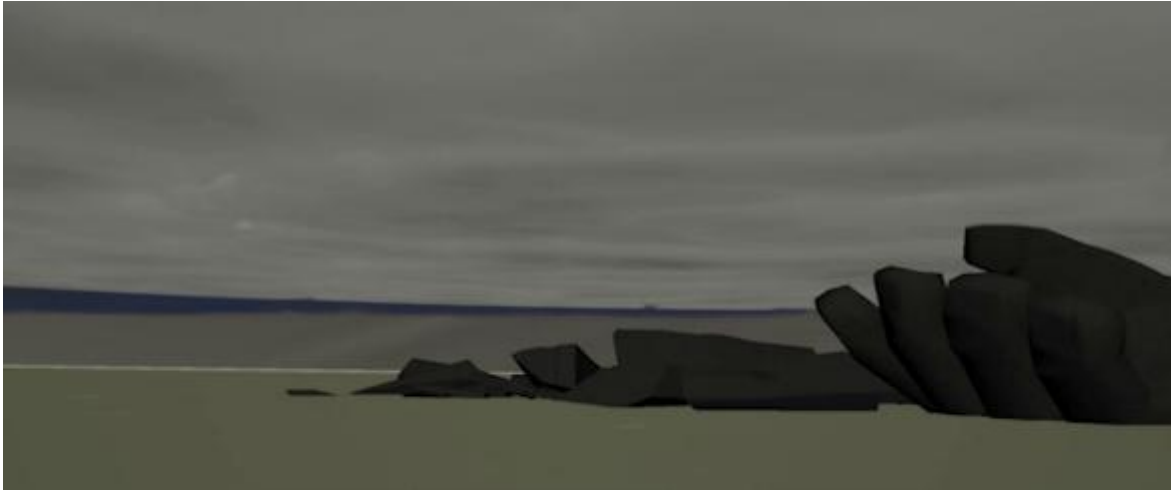


Fig. 45 – Moment to switch between narratives

The resulting narrative that I called *Of Capes and Rocks* lacked an emotional center and was disjointed. It felt obvious that it was pieced together from two disparate strands. Montage was just not enough to dovetail the two stories and overcome their individual and collective narrative deficiencies. It was a failed attempt (learning experience) to connect the two stories visually without any thematic connection as a foundation. In search of shared thematic inspiration to facilitate developing this emotional arc to connect both stories I looked to landscape mythology.

Landscape creation myths exist in nearly every culture around the world. Often used to describe otherwise unexplainable events they persist as cultural perspectives on the role of humans in the landscape. Paul Bunyan represents an American version of the landscape myth; his footsteps are said to have formed the 10,000 lakes in Minnesota. There is a fascinating juxtaposition of temporal scales in this Bunyan myth. The mythical giant Bunyan makes human scale interventions (footsteps) on the landscape that result in landscape features that in reality took eons to form. At this point in the development of

Here Be Giants I explored the possibility that mimetoliths are not merely coincidental landforms, but they were actually sentient beings from an earlier age.

To connect Vast's origins with the humans' story I decided to create a mythology where the eyesight of young children gives life to the Mountain Giants at the moment when infants are first able to focus their vision on distant objects. This concept created contention between a child's purity of vision and an enormous creature capable of physically sculpting the landscape itself; the appeal coming from contrasting representations of power and innocence. Fueled by these plot points, inspirational concept art, and 3d model created by Jeremy Baker (Fig. 46 and Fig. 47) I sought an overarching narrative to bolster the relationship between the two stories. This led to a need to imagine what the world of a walking mountain would look like.



Fig. 46 – Vast concept art by J. Baker



Fig. 47 – Vast concept 3D models by J. Baker

I asked myself a series of questions. What is the heart of the story? Which perspective is the most impactful for telling this narrative? What do these giants actually represent to humans? I realized the need to ensure that the explorations of scale did not overshadow characters that the audience cares about. I decided that an audience would more readily relate to the human character for the same reasons people felt connected with *Mom's Side* and *Dad's Side*: shared human experience. This reestablished the human story perspective as the emotional entry point and focused the next wave of development on what it would be like to live inside of the oasis in the Giant's palm at a human scale.

Wave 5: Little

I began this wave by revisiting the human scale story keeping in mind Vast's reworked narrative as a landscape myth. For the purpose of this wave the Unnamed Hero was named Little. I imagined that he lived on a Mountain Giant, and, like the rock sloughing in wave 4, the movements of the Giant would register to Little as natural phenomena. The Mountain Giant walking and swinging his arm might appear to Little as an island floating through the clouds. This wave resulted in *Little*, an animation intended to

be a slice-of-life character exploration. During this project I also forced myself to consider the physical scales of Vast and Little in real world units. I created a character scale reference image (Fig. 49 and Appendix B) which showed Vast and Little compared to various real life landforms and cinematic giant creatures.

The animation represented an evolution in my understanding of cinematography especially lensing and composition. For *Little* I referenced technical manuals for cinema lenses and also researched what lens kits were used on certain films with both grand landscapes and intimate human moments. I found a quote from cinematographer David Mullen, ASC who said, “Many action directors follow James Cameron's advice to shoot lateral movement with long lenses to increase the sense of speed and to shoot forward & backward movement with wide-angle lenses for the same reason” (Mullen). This is directly applicable to depicting scales of time because it is controlling how fast an action appears in the frame which in turn can affect how shots will work when assembled. This exploration helped inform decisions for *Here Be Giants* when deciding what lenses would best facilitate action for the human story versus Vast’s story.



Fig. 48 – Still frame from *Little*

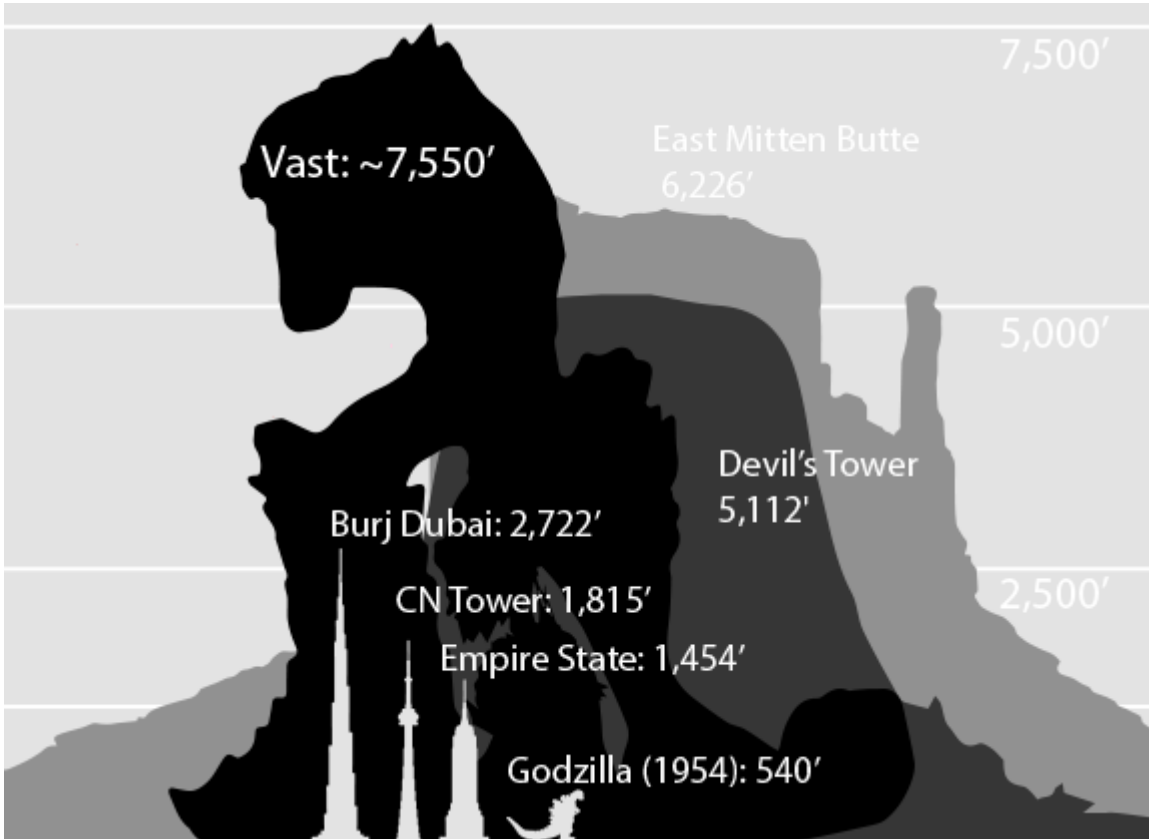


Fig. 49 – Real world scales for Vast

Little was presented to an audience for feedback. The animation was viewed as having beautiful imagery (Fig. 48) but again the story was not clear. The audience did not relate to the character because there was a paucity of background information given about him. There were no emotional stakes; he was faced with no discernible obstacles. Without a clear narrative context *Little* did not convey the larger themes I sought to explore of human-landscape relationships. It was suggested that I consider shifting my approach from one of spatial relationships to a temporal one. Perhaps the two narrative scales I had been developing were in the same physical space but were operating temporally on completely different scales. This concept was the turning point for the development of *Here Be Giants*. The decision to have characters occupy a shared space but not necessarily a shared time

allowed freedom to explore the journey of each character independently. The stories could allude to one another but the characters need not interact directly. It was with this new perspective that I wrote a screenplay letting the story unfold with descriptions of visual elements that I had no idea how to create.

The fifth wave was an important transition into the development of cinematic timescales as a concept. It is the moment where timescales were explicitly pursued as both visual and narrative components. As mentioned earlier cinematic montage is the way connections are made between the images of the creation of the universe and human time in Terrence Malick's *The Tree of Life*. The passage of time is so different by many orders of magnitude the events could never be shown sequentially or at the same temporal scale. I relied heavily on this inspiration when imagining the screenplay structure for *Here Be Giants*. The disparity in temporal scales between human versus geologic narrative formed the base for the final waves of development that resulted in the final *Here Be Giants* animation. Up to this point none of these precursory projects made use of dialogue or narration; instead I concentrated on creating a narrative through imagery alone. I decided to embrace the opportunity to introduce to narrative dialogue and narration. I took a step back to write my narrative and nail down a story arc for each character that incorporated the detail and richness I had been imagining.

Each project detailed in these five waves shaped my outlook approaching the final iteration of *Here Be Giants*. I relied heavily on landscape mythology, human-scale interpersonal narratives, and non-linear story structure from previous influences to develop the physical and temporal scale concepts explored here. Critical feedback of each work was integral to this developmental process. *The Giant's Palm* (wave 1) gave me initial inspiration and cemented my desire to explore parallel narratives. These were considered in

Displaced Hero (wave 2), which served as my first exploration in depicting multiple scales of time in a single shot, incorporating visual cues to do so. *Here Is Vast* (wave 3) expanded on the use of visual environmental cues to convey physical scale. *Of Capes and Rocks* (wave 4) represented an opportunity to work with concepts of pure cinematics and montage to connect narrative strands of two parallel stories. This wave also inspired me to create a landscape mythology for my narrative as a way of connecting the human and Mountain Giant stories. The animation *Little* (wave 5) helped me develop a better understanding of cinematographic techniques (composition and lensing). More importantly the feedback from *Little* represented a paradigm shift for the project by introducing the concept of cinematic timescales. This fundamentally changed my perspective on *Here Be Giants* from spatial to temporal relationships. An approach which is further elaborated upon in the next chapter.

2.2 Temporal Scales Development

Depicting temporal scales in *Here Be Giants* directly affects the structure of the narrative for the whole animation; I explore two intertwining yet distinct strands of a larger story arc: a human interpersonal relationship and a landscape creation myth. These narratives emerged from the original desire to explore landscape and physical scale in animation as detailed earlier in my works *Cracks*, *Object*, and concept artwork entitled “The Giant’s Palm.” After timescales became an integral part to *Here Be Giants* (end of wave 5) it permeated all aspects of the development process. Time became a focus of the script, which in turn affected the visual development of the characters. Through several

drafts of the screenplay² the human and geologic stories took shape. I prefaced each draft with the following note:

TIMESCALES (T.S.) refer to the measurements of time as spatial planes. They are separated into human and geologic time. As such the landscape itself experiences time in a way humans are unable to perceive. *VAST* weaves in and out of these scales, just as one can imagine moving between the minute and massive physical scales.

The human time story evolved throughout the process of *Here Be Giants*. Unlike the process of making my personal documentaries *Mom's Side* and *Dad's Side*, where my emotional attachment was immediate because of the subject matter, *Here Be Giants* took longer for me to find the emotional core. The relationship between Dayu (Fig. 45) and his grandfather Ta'mkhulu (Fig. 49) resonated with me because of my close relationship with and admiration for my parents and grandparents. It felt natural to give the two human characters a more meaningful relationship. It helped to ground the story in an emotional space that could be relatable for an audience.



Fig. 50 – Dayu concept art by T. Wheeler

² The third, fourth, and fifth drafts are included in Appendix C.

As the characters were brought into focus in their respective scales of time I began thinking of the story temporally through the lenses of human and geologic time. In the script I described an event in which Vast is walking (at geologic time) and for an instant a forest appears in his palm; the next moment it vanishes. This note in the script described my intentions:

**The following story of the character DAYU takes place entirely within the instant that the forest exists within the GIANT'S PALM. Unless otherwise noted these events take place at Human Timescale.

To Vast's character (at geologic time) a human lifetime is an instant and normal human activity (in seconds, minutes, hours, or days) would be imperceptible. From outside feedback the idea came to me that the rock giant might actually be able to see the human character despite their temporal disparities. I imagined that a human standing or sitting in the same position for an entire lifetime would be stationary long enough that Vast might glimpse him or her for an instant. Portraying an entire lifespan in seconds in the animation was an ideal way to explore the temporal disparity between the two narratives. 3D computer animation lends itself to this visual description of time by allowing complete control over the appearance of a character as well as the ability to animate this appearance. Depicting Dayu aging required designs for different stages in his life (Fig. 51).



Fig. 51 – Dayu ages concept by T. Wheeler

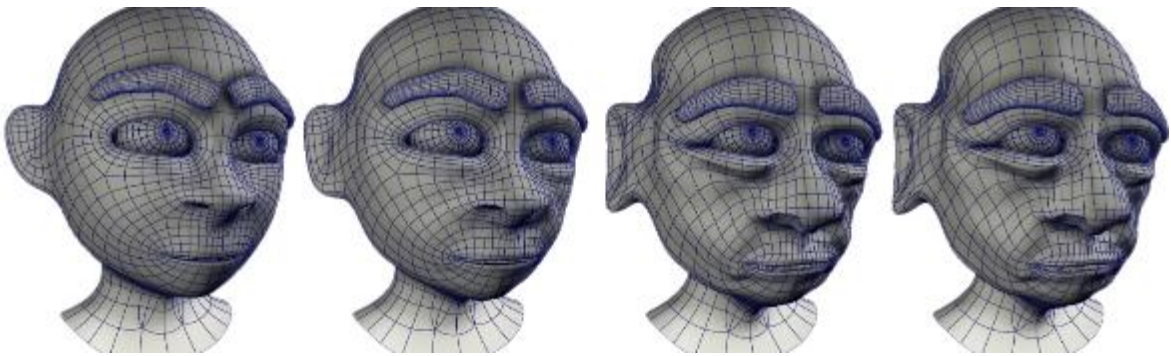


Fig. 52 – Dayu “Old Man Mode” blendshape (modeled by J. Baker)

Dayu’s geometry was modeled with a blendshape (called “Old Man Mode”) that controlled the appearance of the age of the character (Fig. 52). The base geometry was Dayu’s young face; as the Old Man Mode effect is slowly increased his face morphs into that of an old man. A second set of blendshapes controlled how thin (skeletal) the character’s body appeared in several key areas (cheeks, neck, torso, hands, and feet). When used in combination with the Old Man Mode slider these two controls allow the character’s age to

be animated to reflect the effects of a lifetime in meditation. This blendshape also allowed me to generate the geometry for Dayu's grandfather.



Fig. 53 – Grandfather and Dayu early development by T. Wheeler



Fig. 54 – Grandfather low-poly stylized model



Fig. 55 – Grandfather concept art by T. Wheeler, 3D model by J. Baker

As described in the screenplay Dayu’s grandfather always had a long beard, but his proportions changed through project iterations. Wisdom was essential to the relationship between Dayu and his grandfather because Dayu admires Ta’mkhulu's knowledge and perspective. The final character model (Fig. 56) was developed from blendshapes for Dayu’s Old Man Mode (Fig. 52). Technically and for the sake of efficiency it was ideal to repurpose Dayu’s character model. This avoided a need to create an entirely new character and set of blendshapes. Using the Dayu model as a base also provided a familial resemblance to the character. Dayu aging to become a near mirror image of his grandfather supported the cyclical themes of life death and rebirth in the animation.



Fig. 56 – Final Ta'mkhulu character model

Throughout the waves of development leading up to the final *Here Be Giants* animation my perspective evolved from a spatially oriented character relationship to a temporally driven one. The separation between the two timescales (human and geologic) is based on the same temporal vocabulary used at the beginning of the screenplay where I noted:

Timescales will incorporate the following as measurements and descriptors:
HUMAN: Second - Minute - Hour - Day - Week - Fortnight - Month - Year - Olympiad - Decade - Century - Millennium (1000 years) –

GEOLOGIC: Epoch (millions of years) - Period (a number of epochs)
- Eras (a number of periods) - Eon (a number of eras)

Events in *Here Be Giants* take place at scales of time covering a range of the aforementioned vocabulary. For instance, an event depicting a tree growing may depict time passing at a rate between weeks and decades while event at Vast's timescale might occur in terms of eons or epochs.

Chapter 3: Representing Scale Through Visual Cues in *Here Be Giants*

This chapter continues as a documentation of the visual and narrative development through the final wave of *Here Be Giants*. Section 3.1 summarizes the development of timescales articulating three categories of visual cues that were the result of the developmental waves. These cues convey scales of time to an audience. Rather than representing a scientifically accurate depiction of the passage of time, timescales in *Here Be Giants* rely on qualitative depictions that inform an audience as to the scale of time in a given sequence. As a method for presenting examples of application of the categories of visual cues Section 3.2 deconstructs three specific sequences in *Here Be Giants* which depict scales of time: *Dayu's Meditation* (human), *Vast's Timescale* (geologic), and *The Giant's Palm* (a scale of time somewhere in the middle of human and geologic) as an applied demonstration of their function.

3.1 Identifying Visual Cues to Scale

The true power of animation in *Here Be Giants* is the ability to re-interpret cinematic conventions through the medium. Through my reflection on the intuitive decision making process I identified categories of visual cues that allowed me to define for the reader the visual qualities of a given scale of time. The medium of animation allows the filmmaker to draw and expand upon an established visual language to convey spatial and temporal concepts and events that are either imaginary or otherwise imperceptible. Technically speaking the challenge of depicting differing timescales was to create a distinct quality to images that takes advantage of the nature of animation to create representations

of human vs. geologic time scale. Not only must the visual qualities for each timescale be effective independently they must also work together in service of the larger narrative.

The interesting challenges arise in the moments where the two narratives (and timescales) intersect and there is no clear indication as to the temporal scale. To address these two aims visual cues were used to control the depiction of temporal scale. These cues define a visual vocabulary used to depict various scales of time and ensure visual cohesiveness. I took cinematic conventions, beginning with Westerns, and adapted them to define my own visual voice. By re-interpreting cinematographic principles through animation I am able to push the imagery beyond what live action can provide through capture alone. Taking advantage of the control that animation gives over every aspect of an image I am able to create new images expressing my narrative intentions.

Drawing upon the precursory waves of development as well as reference footage of time-lapse video I determined three types of visual cues to temporal scale that were applied to *Here Be Giants*. Employing these cues in my animation helped convey whether a shot or sequence was at human real-time, geologic time, or somewhere in between. The three areas from which cues to temporal scale originate in *Here Be Giants* are: environmental and atmospheric phenomena, reminiscent subject matter, and cinematographic techniques. These categories of cues could essentially all be classified under the title “cinematographic cues” because they were all used to make decisions as far as how to represent events visually to tell the story of *Here Be Giants*. As a result there was some overlap between these visual cues when they were used, and they provided the framework for depicting scales of time. These cues as they apply to *Here Be Giants* are discussed in greater detail in Section 3.2.

Visual Cue 1: Environmental and Atmospheric Phenomena

Essentially these environmental cues are representations of known physical phenomenon re-interpreted in a cinematic way. These cues consist of phenomena such as the sunrise, sunset, cloud movement, seasons passing, weather, etc. Due to the variety of natural environmental cues possible in real life I eliminated those cues that were not easily applicable to *Here Be Giants* to streamline this process. Particular examples of phenomena that were ignored include: snow, rain, and changing seasons. Environmental factors that are readily employed in the depiction of timescales in *Here Be Giants* include: qualities of light and shadow, clouds, sun movement, and star lines. Due to the nature of animation as a time-based storytelling medium it is necessary that animation is an integral part of the depiction of these phenomena. So this visual cue is inseparable from the other two categories.

Visual Cue 2: Reminiscent Subject Matter

Just as for the environmental and atmospheric cues reference footage of time-lapse photography was used to categorize the visual cues I call ‘reminiscent subject matter.’ Time lapse photography traditionally deals with capturing a slowly unfolding event and playing it back at a high rate of speed so it can be perceived by humans. This fundamentally takes an event that takes longer than one second to unfold and squeezes its duration down to seconds. If a runner runs a 100m dash in 10 seconds, and it is captured at 12 FPS, when it is exhibited at the standard 24 FPS the runner will move twice as fast but the movement will appear unnatural. The characteristic shuddering of action in time-lapse is one of the biggest visual cues to the passage of time. This compression is actually what causes the jitteriness of the movement. In time-lapse footage plants grow and flowers unfold in an unnatural stop motion-esque manner because of the method of capture and the

subsequent gap between frames. Because animation is a frame by frame medium this quality is reproducible in many ways. For *Here Be Giants* a randomization of specific key frames was used as well as a non-linear interpolation between these randomized keys. Linear interpolation and tangents can be used to make animation move in smooth arcs, think of a cannon ball flying through the air. To achieve an effective jitteriness the change in the object must be abrupt.

In addition to the quality of the movement the subject matter itself (i.e. the very depiction of the growth of a plant) is an important tool for conveying temporal scale. Relying on a human understanding of the natural world it is safe to assume that actually watching a plant grow (in seconds) registers as an event outside of the ordinary human experience. We do not walk around perceiving the growth of the trees or people aging, but in *Here Be Giants* Dayu ages eighty years in seconds. The audience implicitly understands that viewing an entire human lifespan in seconds is an event outside the normal human temporal range. This concept is discussed in depth in Section 3.2.1.

Visual Cue 3: Cinematographic Techniques

The final category of visual cues deals with the cinematographic techniques to depict temporal scale: specifically camera movement and post production effects (including depth of field). Camera movements are an obvious potential cue to scales. A handheld shot is intended to make the audience assume a person is holding the camera, automatically defining the temporal scale as human. Thus, if it is necessary to depict scales outside of human time, as in *Here Be Giants*, more controlled cinematic camera movements are preferable. An example of incorporating scales of time with camera movement effectively is shown in “Project Yosemite,” a series of Vimeo videos created by Colin Delehanty and Sheldon Neill. These videos capture time-lapse events while making

use of computer controlled camera movements. The combination of a time-lapse event and a human scale camera move represents two scales of time depicted in a single shot. This is similar to my exploration in the sequence in *Displaced Hero* with the sun setting that showed two different scales of time in a single shot. In the case of *Displaced Hero* the scales of time were the real-time movement of the character (in seconds) and the sped up animation of the sun setting (hours passing).

In addition to camera movement depth of field was used as a cue to both spatial and temporal scale. Recalling the photographic exploration *Cracks*, images with a shallower depth of field provide an immediate visual cue to scene scale registering an image as tiny. Deep focus can provide a visual cue for scenes where objects must appear immense. This allows depth of field to be used in *Here Be Giants* to draw distinctions between timescales. Depth of field in *Here Be Giants* was achieved solely through post production processes. Other effects were added during post production to help convey the passage of time including motion blur and image distortion. Motion blur was used as a tool to draw an audience's focus to objects that registered the passage of time. Image distortion was employed for the geologic scale to add a sense of liquidity to the imagery. These concepts are discussed further in Section 3.2.

These three categories of visual cues were used when making decisions for depicting scales of time in *Here Be Giants*. Not every shot makes use of all three categories of cues, but it was essential to have them available to draw upon when making decisions to translate written words to imagery. The cues create a visual language that allows the audience to follow along as events and imagery are depicted that do not otherwise exist in the real world. The following section describes specific sequences in *Here Be Giants* that employ these visual cues.

3.2 Application of Visual Cues To Scale in *Here Be Giants*

Three specific sequences from the final animation are discussed because of their unique representation of scales of time using the three categories of visual cues (Fig. 57). The first sequence, *Dayu's Meditation*, takes place at a human scale depicting time passing at a rate ranging from seconds to decades. The second sequence, *Vast's Time Scale*, presents a geologic scale depicting events unfolding at a rate of millennia to epochs. The final sequence, *The Giant's Palm*, depicts time passing at a scale ranging from years to centuries representing a shared middle ground between human and geologic time. Visual cues help when depicting events at disparate scales of time by presenting a shared language that allows sequence to be assembled together in service of the narrative regardless of the temporal scale in each shot.



Fig. 57 – Timescales along a continuum

3.2.1 Visual Qualities of Human Time in *Dayu's Meditation*



Fig. 58 – *Dayu's Meditation* sequence

For most of *Here Be Giants* Dayu's timescale is the same as the familiar human scale of real-time. There are multitudes of precedents from which to draw on the cinematic language. *Dayu's Meditation* (Fig. 58) is an important sequence thematically because of its depictions of scales of time. It makes use of all three categories of visual cues: environmental and atmospheric, reminiscent subject matter, and cinematographic techniques. *Dayu's Meditation* depicts an acceleration of human scale time. The narrative context of this sequence is that Dayu is meditating for his entire life in hopes that he may glimpse Vast's movement. Therefore I am condensing Dayu's lifetime (years) into mere seconds of animation. This event unfolds for the audience from a perspective of time that is somewhere between human and geologic time. It is not from Vast's temporal perspective because to him Dayu's lifetime would be an instant.



Fig. 59 – Light pulsing as a visual cue to temporal scale

The atmospheric cues to scale include lighting (sunlight), clouds, and dust. At various points in the sequence we see the sun travel across the sky leaving an after image; it represents many days and eventually years passing. The sun registers on Dayu's face as a pulsing light. (Fig. 59) The effect is subtle at first; as time passes more quickly it ramps up and is more distinct. Dust particles and clouds are seen and heard as they whip by indicating the effects of time passing on the surrounding atmosphere. This was an area where the subjective quality of the imagery was used.

Subject matter of this sequence is conveyed through two sources: 1) Dayu's aging a lifetime in seconds and 2) the growth of the willow tree in seconds rather than years. In this sequence Dayu's aging is made visible to the audience (Fig. 60). For Dayu's aging process the blendshapes (discussed in Section 3.2.1) are animated over the duration of the

sequence. It is an event that when observed by an audience is understood to exist beyond the realm of human real-time. Animation allows for complete control over how long the aging takes, what specific parts of Dayu appear to age, and how to best capture the action. Dayu's animation was generated using a base of mocap data, on top of which keyframe animation was added.



Fig. 60 – Visual cue of Dayu aging



Fig. 61 – Visual cues of the sky and time-lapse of willow tree growth

The willow tree is a cue to scale used throughout *Here Be Giants* because it offers a reference point for the audience. Depending on the movement of the tree the audience can infer to some extent what scale of time is depicted. The willow geometry was keyframe animated to make it grow and a turbulence parameter provided the jitteriness to the motion (Fig. 61) to create the time-lapse jitteriness the audience would expect from a time-lapse shot of a tree growing. In this way I am playing off of audience expectations to convey the qualities of the passage of time in an admittedly physically inaccurate way. The jitter of the tree branches becomes a visual cue as the passage of time increases.

The cinematographic visual cue used to achieve the time-lapse quality to the action on screen is motion-blur. Visual artifacts are integrated into the frame where faster moving objects are distorted and slower moving objects remain sharper. This allowed me to direct the audience's attention, just as I might through composition, focus, or lighting, but it also serves as a cue to the destructive nature of the passage of time. In this shot Dayu appears in control while the world around him looks like a raging storm (Fig. 62). Showing Dayu's relationship to the passage of time is of narrative significance because it is a pivotal moment in the character's journey. It also foreshadows how geologic time will be depicted implying an increased malleability of physical objects as time passes.



Fig. 62 – Atmospheric cues to passage of time

3.2.2 Visual Qualities of Geologic Time in *Vast's Timescale*

The visual theme for the depiction of geologic timescales was liquidity through an overall quality of malleability in both the landscape and Vast. This is a visual representation of the erosive effects of wind, weather, etc. over immense periods of time. I find it difficult to imagine plate tectonics, geologic erosion, and glacial movement without picturing the landscape as much more malleable than the way we humans experience it. For *Here Be Giants* the landscape at a geologic scale is depicted as an ocean of rock, not molten but liquid. This directly reverences the following text from the screenplay:

EXT. GIANT'S PALM – (TIMESCALE - GEOLOGIC)
The leading edge of the GIANT'S PALM. Moving like a colossal icebreaker ship.
Cutting through the salt flat, in its wake glacial grooves.
Rocks that pile up in front erode by the wind so quickly they appear to melt. A
shifting malleable canvas.

Depicting a geologic timescale is a different challenge than human because we are unfamiliar with this scale in compressed time. Geologic scale does not have any reference footage available because: 1) Humans and cameras and other means of recording have not

been in existence long enough to have previously captured a geologic event of this duration, and 2) The subject matter is fantastical and as such does not have a real life counterpart.

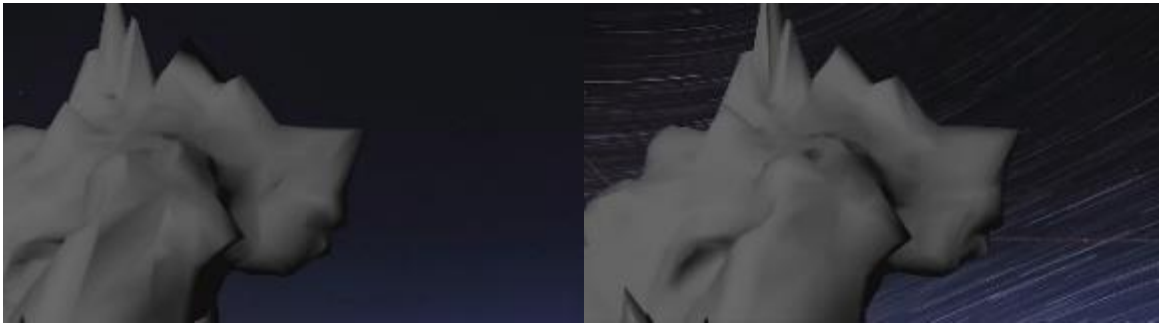


Fig. 63 – Star trails at Vast’s timescale

On a conceptual level Vast is effectively part of the landscape so both his geometry and the ground need to appear malleable at geologic time. On a narrative level the concept behind this movement is to portray the passage of time as a harsh world in which Vast and his environment are constantly eroding. This was a challenge when developing *Here Be Giants*. The closest analog is the idea that sand dunes in the desert form an ever shifting landscape; humans cannot perceive the dunes themselves moving as a large mass, but through cues like how the wind is registered visually in the shape and arrangement of the dunes the environmental impact is clear. In a certain scale of time even the rockiest landscape would erode at such a rate that it would move like these sand dunes. In previs I experimented with this visual malleability to discover surface qualities of Vast’s geometry that could serve as a visual cue to the scale of time. The effect is achieved by a procedural fractal noise applied to the vertex positions on the geometry, causing the geometry to shimmer or vibrate. It works as a high level solution to make the geometry less static, but it

does not really affect the overall shape of the geometry as far as the height of mountains or the depths of valleys. To simulate the effects of erosion over the entire surface of the geometry a blend shape was added to smooth it.



Fig. 64 – Malleable terrain at geologic timescale

The first cue to temporal scale in this sequence is the movement of the sky in such a way that the stars leave trails behind them (Fig. 63). This was influenced by live action night sky time-lapse video reference. This resulted in a finer understanding of the visual cues that can be manipulated to convey scales of time. In Fig. 63 the star trails and the undulation of the ground represent conditions that are easily extrapolated from how they would appear at human time. The everyday human perspective of the night sky is a black canvas dotted with points of light. If images of the sky over the course of the night are captured and sped up (through techniques of image exposure or post production effects) the stars leave trails of their paths as the Earth rotates. These trails can then be understood to represent the known event of the night sky's changing appearance over time.



Fig. 65 – Storyboard of *Vast's Timescale* sequence

The final sequence of Vast's timescale is only four shots, but the visual cues incorporate much of the previous development. In the script this sequence reads:

We are with Vast now. And in his timestream (timescale) he moves as he is aware, at this 1 to 1 speed. As an audience we experience what must be glacial time. He moves ever so slowly. Around him the wind gusts, clouds broil, and the sun rises and sets over and over and over.

In a story where rock giants are born from collisions of mountains it was acceptable to take some liberties when portraying this geologic scale of time. Two of the categories of visual cues to scale are present in this sequence: the undulating landscape (reminiscent subject matter) and the star trails and clouds (environmental and atmospheric effects). The clouds pop in and out as if storms implying storms coming and going. I spent a long time imagining what the sky would look like if a camera was capturing hundreds of years of light in an instant.

Fig. 66 shows the leading edge concept as Vast's feet move forward against the current of the undulating terrain. Early attempts simply had the ground plane intersect with Vast's geometry, but it did not have the desired effect of grounding Vast in the terrain. After much experimentation with fluid simulation, particles, blendshapes, randomized key

frames, and motion blur I landed on using a combination of texture deformers in Maya 2015 and a 3rd party plug-in. The texture deformers allow for complex geometric displacement and also facilitate animation of this displacement. Here I took care to emphasize how the waves of the ground plane crash against Vast’s legs as he walks. I was inspired by icebreaker ships and my own imagination of how a sentient glacier might move over land. This is a refinement over the procedural noise in the earlier previs exploration.



Fig. 66 – Vast’s leg interacting with the landscape

I used a third party plug-in deformer for Maya called “prAttract” created by Parzival Roethlein³. This plug-in allowed me to make Vast’s geometry and the terrain collide at a vertex level. This prAttractNode worked alongside a series of texture-based displacement deformers that created the undulation. This grounded Vast in the terrain convincingly.

Vast’s movement is the result of many motion capture sessions with multiple actors as we tried to develop movement that gives him weight. The intent is that Vast’s movement

³ Script can be found here <http://www.creativecrash.com/maya/plugin/prattractnode>

will appear humanoid but does not read simply as retargeted human motion. Vast's movement, while only taking up a few seconds of screentime, represents more than five motion capture sessions over the course of the production of *Here Be Giants*. The final walk cycle was performed by OSU MFA actor Patrick Wiabel. His performance, which involved dragging around a dust mop piled up with sandbags pretending to have any combination of lost limbs, helped to define Vast's character. Inspired by Gormley's sculptures Vast's face is abstracted to the point where the animated blendshapes are almost indiscernible, and his lack of eyes further limits the emotional pathways. As a result all of Vast's characterization comes from nonverbal communication.



Fig. 67 – Undulating landscape with glacier

Other reminiscent subject matter in this sequence is in the form of choreographed background events. To show passage of time the sequence moves out of an ice age into a warmer time period. The choreography of the glacial recession is also meant to coincide with the river rising in the canyon behind Vast (Fig. 67). The next event to occur is the

rising ocean in front of Vast. This event is a payoff for Ta'mkhulu's setup during his retelling of the legend of the *gigantes*. This shot is also meant to show the scale of intervention that Vast is having on the landscape.

3.2.3 Visual Qualities: Depicting *The Giant's Palm*



Fig. 68 – Tilt-shift effect applied to *The Giant's Palm*

The Giant's Palm (Fig. 68) is a single shot that depicts a scale of time that exists somewhere in the area between human and geologic timescales. It is the visual zenith of the entire development process of *Here Be Giants*. Compositionally it directly references the initial “Giant's Palm” concept art, and it is also the only shot in the animation where the oasis is the intended subject. While the majority of the animation hints at the presence of *gigantes* this scene allows the audience to observe from an omniscient perspective. It provided the audience a moment of reflection, removing the need to empathize with Dayu or Vast. All three categories of visual cues to scale are present in this sequence in the forms of: lighting and clouds (environmental and atmospheric); the gondola, water level, and tree growth (subject matter and animation quality); and the tilt-shift miniaturization (cinematographic).

Environmental and atmospheric cues are employed in a similar manner as in the previous two examples (*Dayu's Meditation* and *Vast's Timescale*) using visual cues to provide a consistent language. Sunlight registers as gentle pulsing shadows on the landscape. This hints at the motion of the sun travelling through the sky. It is a lighting condition that is just different enough from human time to provide a hint at the visual quality of this scale of time, but at the same time it does not call attention to itself like previous sequences.

The cues to scale of subject matter and animation quality (jitteriness) work hand in hand at this timescale. The human timescale is shown by the speed of the gondola moving up and down as countless trips up to the High Cliffs are made in a matter of seconds. This subject matter draws upon the audience's knowledge of the narrative of *Here Be Giants*. The first half to three quarters of the *Here Be Giants* is spent in human real-time with Dayu and Ta'mkhulu in the gondola. So the gondola imagery in this shot can be used as a visual cue the audience will associate with a certain scale of time. Also included in the subject matter category is the rising and falling of the water level of the oasis and the growth of trees on the island. Both of these phenomena are usually imperceptible to the human eye without the aid of time-lapse.

Just as in the time-lapse of the willow tree in *Dayu's Meditation* (Fig. 61) the camera movement in this shot minimal so as to avoid attracting attention to itself. For every shot in *Here Be Giants* depth of field decisions were made in post-production relying on imagination to know the focus for a given shot. Using a depth map and compositing software gives precise control over the depth of field and is even used to cheat images to achieve results that would be physically impossible with real world cameras. This technique using depth maps was also used to create the tilt-shift effect of this shot.

The sequence of events of *Here Be Giants* do not unfold chronologically in the traditional sense, rather there are two parallel narratives that intersect. Dayu and Ta'mkhulu's relationship between grandfather and grandson connects to the *gigantes* landscape creation myth through editorial montage to allow for impressionistic narrative connections. The only way this story is possible to tell is through the use of visually cohesive imagery that depicts various temporal scales. This cohesiveness is achieved by using a series of visual cues based on real life phenomena and reinterpreted to create imagery to convey scales of time to an audience.

Chapter 4: Synopses

Short Synopsis

A young boy decides to follow in his grandfather's footsteps, embarking on a journey to find his place in the world. Dayu has travelled up to the high cliffs many times with his Grandfather, but this will be his first time going alone. No longer must he wait in the gondola to hear stories of what wonders lie ahead. Along the journey Dayu reflects on words of wisdom from his grandfather carrying with him the last remaining physical connection between him and his Grandfather: a stone, a *gigante's* heart. Uncertain of his future, but convinced that answers will come as he walks the footsteps of his ancestors, he prepares for the unknown.

A story about growing up, self-reflection, and learning from those who came before while finding your own way in the world, *Here Be Giants* blends aspects of landscape mythology, familial relationships, and temporality.

Long Synopsis

Here Be Giants is my thesis film for my MFA in Digital Animation and Interactive Media from The Ohio State University. The animation blends aspects of landscape mythology, familial relationships, and temporality. Guided by an intersection of my interests in the mythic qualities of landscape, personal documentary, and temporal scale, *Here Be Giants* is a story about growing up, self-reflection, and learning from those who came before while finding your own way in the world. As we age our perspective on the world invariably changes. Things that were said to us as children take on new meaning, and we gain an appreciation for the accomplishments and sacrifices of those that came before us. In a

similar way, as we age we also gain a greater understanding and appreciation for the world around us. The influence of my parents and grandparents and their desire to pass along their knowledge helped me to shape the characters in this story.

The title *Here Be Giants* is inspired by the phrase "HC SVNT DRACONES" (i.e. *hic sunt dracones*, here be dragons). I can recall this phrase from a globe I used to have as a child. It turns out on further inspection my globe did not actually contain this phrase although it was dotted with drawings of fantastical creatures (Fig. 69). My research has shown that there are apparently between one and three instances of the phrase "*hic sunt dracones*" in recorded history. Two are on globes and the third is potentially on a piece of artwork (Meyer, McKay). Culturally this phrase is almost universally related to maps and is traditionally understood to show an unexplored region. It is a powerful phrase and set the tone for my animation.

The structure and tone of *Here Be Giants* is that of a personal documentary the subject of which is two-fold: the human character Dayu and the character of the landscape around him. Human beings are accustomed to experiencing the passage of time on a human scale. The measureable units of seconds, days, weeks, years, and lifetimes best define human's shared perception of temporal scale. The limit of time can be extended further in a cultural capacity as stories are passed down from generation to generation. This can expand the human temporal footprint to include multiple lifetimes, reaching its limit at the end of recorded history. Storytelling in this sense is a means of time travel passing along important concepts and knowledge along generations. The oral tradition has given way to more multimedia forms of storytelling but the sentiment remains. Landscape mythology related narratives are common in recorded history. These landscape myths exist as means

for explaining events or phenomena that are beyond either the knowledge or physical capabilities of human beings.



Fig. 69 – Globe inspiration for *Here Be Giants*

The human scale story of *Here Be Giants* follows a young boy who decides to follow in his grandfather's footsteps, embarking on a journey to find his place in the world. Dayu has travelled up to the high cliffs many times with Ta'mkhulu, his Grandfather, but this will be his first time going alone. No longer must he wait in the gondola to hear stories of what wonders lie ahead. Along the journey Dayu reflects on words of wisdom from his grandfather, carrying with him the last remaining physical connection between him and his Grandfather: a stone, a *gigante's* heart. Uncertain of his future, but convinced that answers will come as he walks the footsteps of his ancestors, he prepares for the unknown. In Dayu's culture elders spend time in meditation at a place referred to as "The High Cliffs."

This place is up in the mountains and far from the area in which Dayu and Ta'mkhulu call home. Meditation at this holy place is reserved for the elders and this includes Ta'mkhulu. These meditations are a means for Dayu's people to gain knowledge about their existence. It is said that some individuals are able to reach a higher plane of consciousness gaining the ability to communicate with the landscape around them. No one in recent memory has achieved this state.

While developing the characters I created a nearly twenty minute previs animatic that followed my screenplay shot by shot. This was an extremely useful process as I began to realize the importance of essentially editing the film while writing. It also helped me understand how my written words translate to the screen as far as pacing and emotional impact. Dayu's narration is provided by MFA actor Sifiso Mazibuko, who brings the character to life in a way I would never have been able to on the page.

Governing intuitive decisions of a project based development process was a foundational understanding of cinematography as the language of cinema. A major creative challenge was designing ways to depict various scales of time along the spectrum of human real-time to geologic time. The final design decisions draw from landscape time-lapse photography as well as live action cinematography (particularly from nature/landscape documentaries and films of the Western genre) combined with my own artistic interpretations. Three categories of visual cues were developed to ensure a cohesiveness of the imagery across all scales of time depicted. These categories included environmental and atmospheric elements (clouds, the sun, star trails, etc.), reminiscent subject matter (tree growth in seconds rather than years), and cinematographic considerations (depth of field and motion blur). The narration and imagery is bolstered by powerful music from Composer Larry Groupé. Structurally the narrative echoes the temporal visual themes

following a nonlinear path. Particular attention was paid to lensing, speed of camera movement, and editorial pacing to convey scale and to provide the visual language for the animation.

Technical Considerations

The visual imagery used to convey the passage of time was created in Autodesk Maya using paint effects, texture deformers, properties of the physical sun & sky, and fluid containers. Both performance capture and keyframe animation were used the latter was often randomized to provide visual cues to temporal scale. A flexible pipeline was established to allow previsualization sequences to be dropped into Adobe Premiere timeline along with music from composer Larry Groupé and Narration from actor Sifiso Mazibuko. This allowed me to focus on the audio and music as well as the images when iterating. Motion blur, particles, depth of field, atmospherics, and volumetric decisions were made in post with Adobe AfterEffects and a series of plug-ins from Frischluft and ReVision Effects. Final color grade and film grain was added with FilmConvert to give the images texture and a rich color palette to help soften the sharp renders.

Software Used: Autodesk Maya & MotionBuilder, Adobe Creative Cloud (Premiere, After Effects, Audition, Photoshop, Illustrator), Rubber Monkey Software FilmConvert Pro, Frischluft Lenscare & Flair, Knoll Light Factory, Trapcode Particular

Chapter 5: Reflection

This chapter serves as a reflection of both the research questions explored and the final *Here Be Giants* animation. Section 5.1 reviews the research insights investigated through reflexive analysis of the development process of *Here Be Giants*. The benefit of hindsight allows for the identification of areas of the process which were pivotal to the development and worthy of further analysis. Section 5.2 discusses the overall outcomes of the animation across a series of categories including: reflections on story structure, watching with an audience, listening to outside voices, collaboration and imagery choices. This thesis concludes in Section 5.3 with a summary of the points made in this reflection and the general outcomes of my thesis project as a whole.

5.1 Reflections on Research Questions

The nature of cinematic conventions as an informative source for process in digital animation was revealed over the course of creating and reflecting on *Here Be Giants*. The research objective for this thesis project was based on a retroactive evaluation of the development process. As such, the primary question investigated was, "*How can the established language of cinema inform process in digital animation?*" The majority of the imagery in the animation was produced during the final eight months of a three year process. All of the previous projects and outside influences (detailed in previous chapters) helped to develop an intuitive platform for decision making. Only upon further, directed reflection are some of the underlying reasons for decisions made clear. My process felt like a constant struggle: generating imagery, editing together a workable draft, receiving feedback, and beginning again. I spent two and a half years getting over the technical

hurdles as well as developing the world, characters, and emotional perspective for *Here Be Giants*.

So much of today's 3D computer animation is informed by live action cinema that it is essential to understand the latter to take full advantage of the former. It would be difficult to appreciate the nature of animation in terms of temporal and spatial control without first understanding how it fundamentally differs from live action cinema. As stated earlier, decisions while making the animation were often intuitive and it has been the purpose of this thesis to illuminate the underlying factors that led to these decisions. Through this reflexive practice I have identified 3D computer animation as a tool for pushing past the physical limitations of live action cinema. Because of this it was necessary to understand the aspects of 3D computer animation equivalents of live action element (cameras, lenses, lighting etc.) in order to create imagery in a similar manner as one would in live action.

My process for *Here Be Giants* began with my affinity for the Western genre. This is an effective entry point into understanding the language of cinema because the Western has such a distinct visual language. More than mere *mise en scène*, the composition and assembly of images in a Western is distinct, including where the horizon would be placed, depth of field considerations, image compositions, framing, etc. These aspects of live action Westerns were a great starting point for a fundamental understanding of the cinematic language. What is incredibly exciting about applying cinematic conventions to animation is the freedom that comes along with operating in a digital world.

The idea of creating a landscape mythology was intriguing on two fronts. First, it allowed me to incorporate my prior training and personal views of humans and their relationship to the natural environment. Secondly, it allowed me to develop a parallel story

structure. Having two story strands placed an even greater emphasis on effective use of montage. This in turn highlighted the importance of a consistent visual language across both narratives. Landscape mythology requires an approach to image making that deals with the concept of *representation* versus *depiction*. This distinction directly effects what goes into image making in live action versus animation.

This is an observation of animation and live action and the process of image making in each. While both share a great deal of similarities as far as visual language and techniques, there is a fundamental difference between the two when creating imagery. For live action (films and photography alike) my process is much more reactive. This is not to say that there is no intent behind the creation of each image, instead it is more that there is a physical scene in front of the camera which becomes a given, and then images are composed around it. On the other hand, animation is more proactive in that the scene itself is not a given, and it requires more than intentional placement of objects, it requires the creation of said object before they can actually be placed.

Animation allows for a greater deal of control in image making. For example, once the three categories of visual cues were defined in *Here Be Giants* they formed a baseline for image making. Each shot required applying these cues to varying degrees in order to represent a certain scale of time. For a live action time lapse video, what the image maker is exploring is how to best capture the depiction of this event. Whereas for *Here Be Giants* the event is represented in such a way as to convey a concept to the audience through imagery. This is where the three visual cues come into play. In reality breaking the cues into three categories is useful for the purpose of greater descriptiveness and detail in this thesis, but they are all part of the same process. All are part of digital cinematography by

that I mean the process of creating imagery in 3D computer animation to represent a narrative.

If I was to continue exploring the representations of scale and time I would push the limits of representations of geologic time to an even greater magnitude. In *Here Be Giants* the imagery represents the lower end of geologic time. It would be interesting to develop imagery even further to see how a less familiar point of reference (an absence of human time) might an audience's response to the imagery. I would also consider thinking of timescales as existing along a spectrum. As the project exists now the narrative is logically split to reflect the temporal disparity between human and geologic time. What if human time was in the middle of the spectrum, with geologic time at one extreme, and a third timescale at the opposite end as a counterpoint to geologic time? This third temporal scale would be the antithesis of geologic time; perhaps a being in existence at this timescale would live a lifetime in a fraction of a second. This addition would push the project into more unknown temporal realms requiring further application of visual cues. These cues would be similar to those used for geologic time because there would not be any reference footage available. This would potentially change the story structure from two parallel strands to something even more organic.

The connections between spatial scale and temporal scale would also be an interesting avenue for continued exploration for *Here Be Giants*. It seemed logical that a character's relative size is proportional to his or her temporal scale. Dayu's human timescale is shorter than Vast's geologic, and this is represented through their physical sizes as well. But what if it was reversed? How would it appear visually if Vast's lifespan was on that opposite end of the spectrum, effectively lasting the blink of a human eye? Pushing the idea of timescales further might result in the need for a dominant story strand

the others to fall by the wayside. Or maybe I would have made *Here Be Giants* more impressionistic by foregoing discernible narrative all together. Despite potential future directions for the concept it was an extremely valuable process to me as an artist and filmmaker. Exploring the relationships between time, scale, and narrative and addressing the challenge of creating imagery to do so. Developing categories of visual cues, effectively formed the vocabulary for the visual language of *Here Be Giants*. This to me is the most intriguing outcome, where the director of animation can use the diversity of the medium to potentially incorporate cinematic conventions where necessary and also expand up them when necessary. Incorporating the established conventions of cinema allows a director of animation to start from a place where audiences expect or accept certain phenomena and then explore imagery beyond.

5.2 Analysis of *Here Be Giants*

While the overall focus of this thesis is the representation of temporal and spatial scales in *Here Be Giants* other key aspects of the development process warrant mentioning. The primary goal when creating *Here Be Giants* was to create visuals to convey two narrative strands each unfolding at a unique scale of time. As discussed above this required defining and applying categories of visual cues that allowed scenes from the script to be represented in a visually consistent manner regardless of scale of time. Section 5.2 provides a reflection on *Here Be Giants* as a finished work including its effectiveness creating a visual language.

5.2.1 Reflections on Story Structure

An aspect of *Here Be Giants* not discussed previously in this thesis was the influence of a traditionally Eastern narrative structure driven by something other than conflict. It comes from a technique in Japanese poetry known as *Kishōtenketsu*, a way of

adding in a surprise element which results in a synthesis for the entire story rather than a series of conflicts or obstacles (McKenzie). The artist collective “Still Eating Oranges” posted images on a blog that illustrate the differences between these two types of narrative structure (Fig. 70 and Fig. 71). It was the ‘surprise’ element of Kishōtenketsu that informed my decisions when dealing with how to depict Dayu’s death. As the narrative of *Here Be Giants* reached the extents of human time I wanted to show Dayu’s death as a natural consequence of a lifelong meditation in a way that was not gruesome or violent. Instead, it was a necessary (inevitable) result of a lifelong meditation: reaching the end of one’s life. There was never intent for Dayu to return to his people with a new knowledge a la Joseph Campbell’s *The Hero’s Journey*. The climax to *Here Be Giants* is the moment where the narrative shifts from the end of human time into Vast’s geologic time.

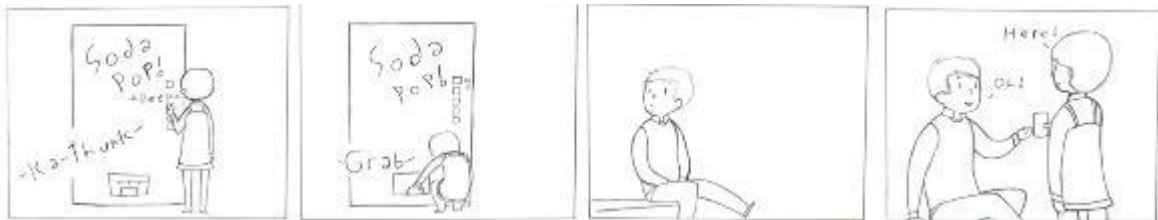


Fig. 70 – Kishōtenketsu technique of Eastern narratives (Still Eating Oranges)



Fig. 71 – Western story structure (Still Eating Oranges)

5.2.2 Reflections on Watching With an Audience

As a filmmaker I always intended to show my work to an audience and found that watching this animation with an audience was incredibly insightful. At the time this paper was completed I have been present in an audience for four public screenings of *Here Be Giants*. My perception of time and overall emotional reaction during the screenings the animation has felt different each time I watch it. The variables of my nervousness, venue seating arrangements, atmosphere and technical considerations of projector brightness and color, sound quality and loudness, and screen size are factors affecting my perception of the animation. The screenings for which I was most nervous were those where the audience knew I was the filmmaker. At these showings it felt like the animation was playing at 1.5x or 2x normal speed as if the narration itself was sped up. I assumed that the audience had no time to actually comprehend the words. On the other hand, a couple of the screenings where I was anonymous felt either appropriately paced or even a little slow.

The audio levels vary greatly depending on the audio setup of the theater and that is one area where it would be beneficial to know more about the venue so that a file could be prepared to make use of the technology. This is one area that has consistently worried me about each screening. Mostly due to my lack of understanding with sound design and mixing, it feels beyond my control as to whether the audio levels in the animation will be as I intended. There is also a nagging desire to make changes to the animation as I watch it. It is hard to not focus on the areas that could be improved, or where concessions had to be made in order to finish the piece. I am constantly reminding myself that it is a finished animation and I have reached diminishing returns as there is no added benefit to going back to fix things.

5.2.3 Listening to Outside Voices

My intent for the story was to offer a unique world with relatable universal themes of family relationships to tell a story that allows for audience interpretation. Naturally I drew on my own experiences for much of the story. It was not my intent to tell a story with a single message or purpose. I considered *Here Be Giants* a multilayered narrative both in its parallel strand structure as well as its potential for interpretation. I have received feedback on the film from a number of sources including industry professionals, peers, strangers, and family members.

Two animation industry professionals, each with more than seven years industry experience at major studios, were generous enough to give me honest feedback about the animation. It goes to show the subjectivity of an accessible medium like film. The first individual said that the strongest part of the animation were the depictions of Vast's timescale. Feedback from this individual also included: feeling that the music was too strong to the point of overshadowing the visuals, that the narration was redundant, and the entire animation could use with an editing pass to speed it up. Despite these critical points this person told me that they actually enjoyed the animation.

Interestingly enough a second animation professional gave me essentially the opposite feedback saying that the pacing and use of music and montage was effective. This individual's major critique was the lack of clarity in my cinematic voice. I interpret this to mean more that it is a point to develop as I continue to make work. For this individual my desire for uniqueness as an artist was at odds with a desire to emulate big budget films. Specifically this person told me that through the 20 years spent in the industry there are "good directors or storytellers [that] should have two good senses they can express: "tension" and "empathy". As an artist, expressing [your] own "uniqueness" is quite

important, but as film director or storyteller "tension" and "empathy" is often more important." This person challenged me as I move forward to consider further developing one of these two skill directions. I personally feel that there is a possibility to continue developing both of these avenues through collaboration and communication of my ideas. From observing the animation in a public setting and through audience feedback I would say that as a narrative work of visual storytelling *Here Be Giants* is successful.

5.2.4 Reflections on Collaboration

It is extremely difficult to produce a short animated film with the aspirations I had for this story without enlisting the help of others. My shortcomings as a character animator, modeler, conceptual artist, etc. are largely from comparison to major studio systems. In these institutions the budgets and time frames for films requires individuals to specialize in specific areas in order to move the production forward. This is an exciting proposition to be a part of making films that potentially have lasting significance for cinema. At the same time there is a desire to create my own work on my own terms, and I expect this to be a constant back and forth for the entirety of my career as an artist. *Here Be Giants* was a collaborative work. The final product is leaps and bounds ahead of anything I could have accomplished on my own. Major contributions were given in some of the areas in which I am weakest (incapable): music and character vocal performance.

I was lucky enough to enlist the services of Composer Larry Groupé whose music was pivotal in the development of *Here Be Giants*. I met Larry Groupé in October 2013 at Capital University where he was giving a guest lecture about what it means to be a working composer in the entertainment industry. After his informative presentation I approached him and mentioned I was a grad student at OSU in (desperate) need of music to help my animation. He was extremely generous with his work, allowing me to use his music free of

charge because I was a student. I sent him the screenplay, some concept art, and a link to my previs (which was 20 minutes at the time!). I also gave him a few key words describing what I would like the music for each timescale to feel like: Vast - epic, tormented, plodding, and inevitable; Dayu - curious, introspective, and reserved; Flecks: mysterious, playful, sharp, and light. The music he allowed me to use became the backbone of the animation and my strongest tool to evoke emotions from the audience.

A second pivotal collaboration was with OSU MFA actor Sifiso Mazibuko for Dayu's narration. Sifiso brought life through his voice that allowed me to connect to my characters in a way that I hadn't before. I realized that in order to depict the human scale narrative I needed to embrace the humanity of my actor's performance and let that drive home the ideas. Originally from South Africa, Sifiso used the Zulu word Ta'mkhulu which literally means grandfather. This has subsequently informed the dialogue as I have asked people to help me translate the dialogue for subtitles in Russian, Portuguese, Italian, Mandarin Chinese, and Spanish; in doing so they have substituted their language's word for 'grandfather' in their language for Ta'mkhulu. The story is universally applicable, and this may more intentionally help audiences relate to the characters.

5.2.5 Reflections on Imagery Choices

From the inception of the project I strove to create evocative imagery; imagery that conveys as much information as possible within the frame. Looking back one successful way I was able to add information into the frame was through creating an image system. The imagery of hands and protection is used throughout *Here Be Giants*. Some examples are The Giant's Palm concept art, Dayu holding the *gigante's* heart, the gondola's basket shape enveloping Dayu and Ta'mkhulu, the hand prints in the body paint, and Vast holding an oasis in his palm. This concept grew to become an image system of hands and

protection that runs throughout the animation. I used hand and fingerprints for the characters paint textures for the tactile impression that it gives the images. These fingerprints each have meaning; they represent a visual remnant of moments in the characters' past. For instance, the handprint on Dayu's chest was formed by his grandfather placing his hands over Dayu's heart as part of a rite of passage in their culture. There is a recurring image system of hands representing safety that has its origins in the Giant's Palm artwork. The gondola reinforces this system because it is designed to feel organic and protective, almost as if it is cradling the characters.

The final image of any film is the last opportunity to drive home the theme to give a potent reminder of the journey. I took careful consideration when deciding on the content, composition, and meaning of my final image (Fig. 72). I wanted to punctuate my story thematically as well as pay homage to some of the work that influenced *Here Be Giants*. Terrence Malick's final shot of *The Thin Red Line* (1998) seems to pay homage to Hayao Miyazaki's 1984 masterpiece *Nausicaä of the Valley of the Wind*. My final image in turn references the aforementioned compositions while incorporating elements that are most important to my story, namely the *gigante*'s heart and the willow tree as symbols of scales of time. I did not want this to be specifically the exact same *gigante*'s heart shown earlier in the animation. I would prefer that this shot is open for some level of interpretation. The heart rests in a pool of water implying potential for life. At the same time its proximity to the cliff face conveys a precarious balance of life and death, safety and danger. This relates to my image system that runs through the whole animation.

The image is meant to represent many things including rebirth and the cyclical nature of time. So much of the narrative of *Here Be Giants* is driven by my approach to temporality, fragility, and cycles of life and death that it seemed the most fitting way to

conclude. One individual told me after a screening that the final image ended the film on a sad note. At a different screening another individual told me that it ended on a hopeful upward note. This speaks to the fact that my animation resonated with these two individuals on a level that was informed by their own personal experiences. *Here Be Giants* will be something I look back on as an artist as an example of evocative imagery that I created and creating evocative images is the sole purpose of cinematic storytelling.

5.3 Thesis Summary

Understanding the conventions of the cinematic language can help a director exploit the nuances of animation. In the case of *Here Be Giants*, where the narrative required that time be represented at human and geologic scales, 3D computer animation offered the ability to create imagery that would otherwise be impossible to capture. I was able to set up rules (cues) for my own visual language, specific to *Here Be Giants*, and by applying these rules the imagery representing any scale of time maintained a visual cohesiveness that allowed montage to be employed to tell this particular story. The process of gaining a knowledge of cinematic history and technique as a foundation for approaching animation was an extremely rewarding exercise.

The primary research goal of this project was to determine the methods of image creation that went into making *Here Be Giants* in regards to utilizing cinematic conventions as a means of informing digital animation process. Decisions were made in an effort to balance audience expectations with a need to depict events outside the realm of human experiences. This required building a foundational understanding of cinematic conventions, which were then reinterpreted in such a way that they could be applied to specific narrative requirements of *Here Be Giants*.

After reflecting on the development process, I believe that what were once intuitive decisions can now become purposeful choices in future projects to realize narrative goals. I believe these visual cues from *Here Be Giants* were able to:

1. Allow for the representation of scales of time in both human and geologic realms.
2. Provide a means for producing visually cohesive imagery that can then be assembled for the purpose of telling a narrative.
3. Convey the representation of a concept, rather than the depiction of an event.

I generally considered the results of this thesis project to be successful, both in terms of the final *Here Be Giants* animation and the associated reflexive research investigations. While this project makes a relatively small contribution to the field of digital animation, it represents an example where cinematic conventions are incorporated and expanded upon in a way which is unique to digital animation. The insights gathered during the course of development may be helpful to other directors of animation because they were achieved through a long process of experimentation, trial and error. Where before I thought of live action cinema and animation as two disparate art forms, I now look at them as two sides of the same coin. Perhaps there is some truth to Lev Manovich's words, "Born from animation, cinema pushed animation to its boundary, only to become one particular case of animation in the end" (Manovich). More importantly, moving forward I see potential for my voice as a filmmaker to incorporate both cinematic conventions and animation reinterpretations to be used for the same purpose, to create evocative imagery for telling stories.



Fig. 72 – (TOP to BOTTOM) The Final imagery from *Nausicaä of the Valley of the Wind* (Miyazaki), *The Thin Red Line* (Malick), and *Here Be Giants*

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Appendix A: Additional Artwork



Fig.73 - Inspirational imagery *Cracks* and *Western Landscape*



Fig. 74 – *No Country for Old Men* (Rudin) and *Shadow of the Colossus* (Ueda)



Fig. 75 - Gondola concept art courtesy Jon Ishida



Fig. 76 – Measurements of human time

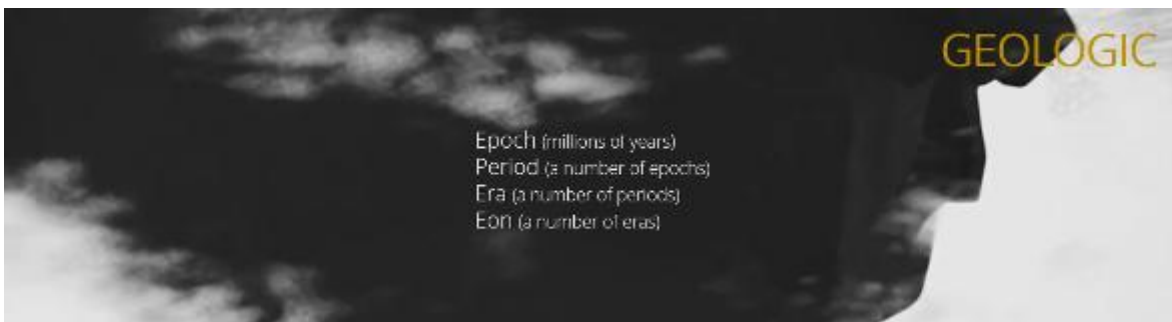


Fig. 77 – Measurements of geologic time

Appendix B: Character Scales Reference

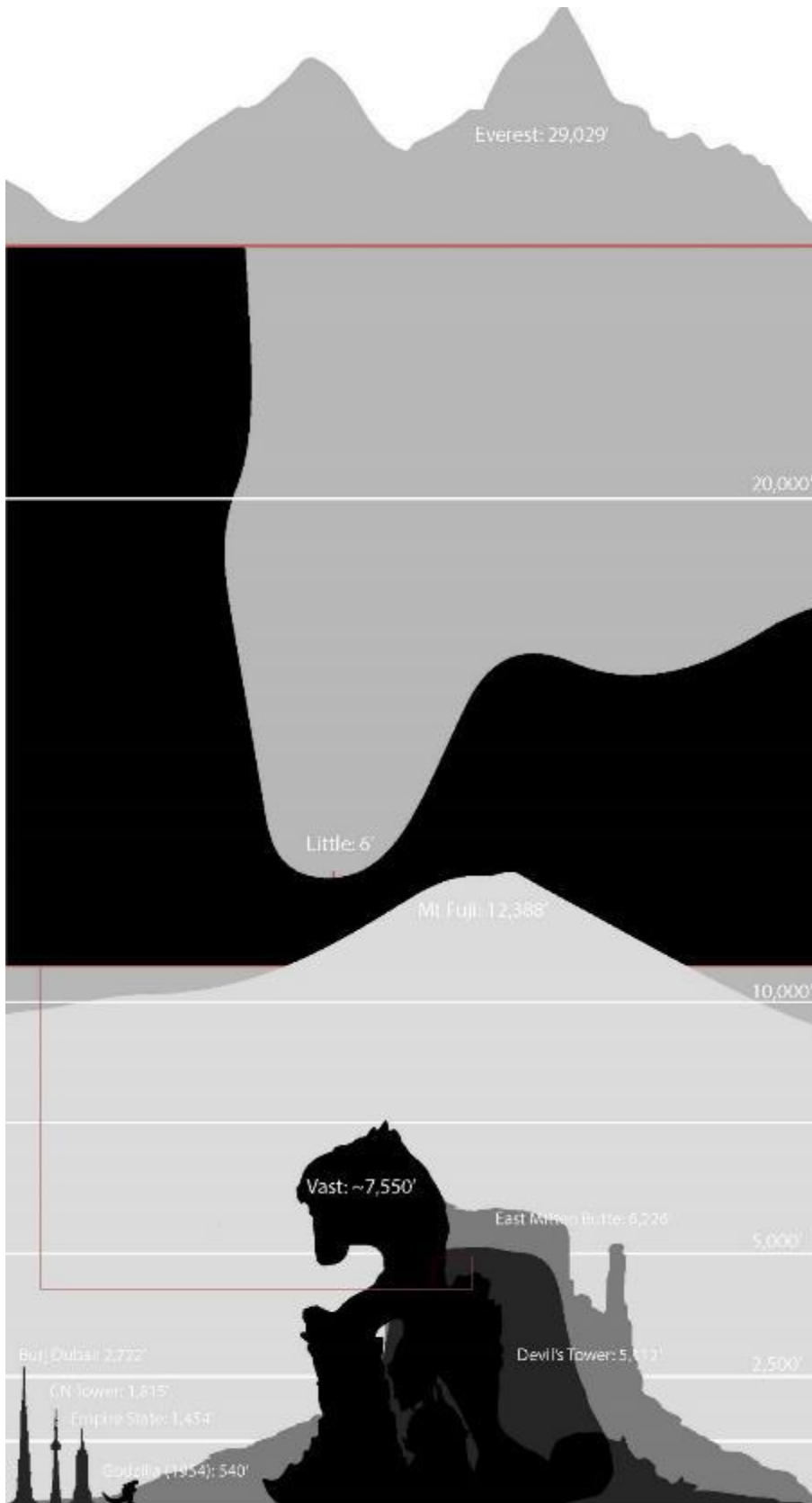


Fig. 78 – Character scales comparison

Appendix C: Screenplay Drafts

Screenplay 3rd Draft – July 30, 2013

vast
Draft - 2013.07.30

By
Thomas Heban

FADE IN

Super wide shot, cloudscape. The clouds flow by. A couple spines of mountain ranges poke through the clouds. A low, deep rumble. One of the largest mountains begins to rise, then plummets, disappearing.

The cloudscape remains, the rest of the mountains remain, unmoving.

TITLE CARD: Hic sunt gigantes.

EXT. BARREN LANDSCAPE

Series of shots.

Saltflats/desert/ Desolate

A great canyon splits the frame, extending as far as the eye can see. Winding.

Helicopter shot forward, along the left side of the canyon a series of massive stone structures. They look like a bushel of apples dumped out onto the landscape. Monuments. Eerie, out of place in this pancake flat world.

At the horizon the faintest outline of a mountain range.

The closest rock formation is shaped like a giant sailboat, if you squint.

EXT. SAILBOAT ROCK - DAY

On rocks every where. No sights or sounds of life.

Intricate rock formations, fractals, smaller versions of the sailboat dot here and there.

A circular dried lakebed with an intricate grooves sits. Small hills/humps fill the bottom of the dried lake. Fossilized.

EXT. DESERT - LATER

We continue flying forward, floating really. Out of body, getting more of a view than we would normally see. the canyon is more winding now. Still bone dry.

We approach another rock formation, tiny tufts of lichen and moss dot it's surface.

EXT. LICHEN ROCK

Sheet of rock. Enormous, stacked like irregular shingles. In the cracks the smallest mosses and lichens grow in perpetual shade.

The terraced landscape spills toward the canyon to. Sitting precariously over the canyon, sheets of rock slide forward every now and then. Seemingly regularly. These sheets disappear to oblivion as they careen over the lip of the canyon. We dont see them land but the faintest sounds of their crasign can be heard.

The wind tears at the rocks kicking up dust.

Barely visible on the horizon is another rock formation. Elongated, alternating patches of green and rock. It looks like the humps of some great seamonster swimming.

EXT. SEA MONSTER ROCK

This place has an atmosphere. The wind howls but in little pockets, like hundreds of tiny ice cream scoops, rolled up, microclimates, there is vegetation.

In one of these pockets the air is dense with what looks like dust, bright glittering pieces of dust as well as duller, orange brown flecks. these move almost as a swarm of bees or a flowign flock of birds.

Those that approach the edge of the ice cream scoops are pulled out into the harsh wind beyond.

In the sky the clouds cover half the frame.

EXT. CLOUDSCAPE.

The mountains are all there. The one that disappeared earlier is miles away. Darker stone. We can only tell it has moved by referencing the otehr mountains. Periodic breaks inthe clouds show the stark white salt flats below. The faintest hints of a canyon are also there.

A low rhythmic rumbling is audible.

EXT. DESERT - TIMELAPSE

We are with Vast now. And in his timestream he moves as he is aware, a this 1 to 1 speed. As an audience we experience what must be glacial time. He moves over so slowly. Around him the wind quiets, clouds broil and the sun rises and sets over and over and over.

The body of the little guy is buried under ages of dust and debris.

Vast's fist acts as an ice breaker ship, digging through the salt flat, a mound of rock piling up in front, in it's wake, glacial grooves. Immediately bone dry from the wind in this place.

A huge chunk of rock and ice liles off of vast, slamming in to the ground at his feet, filling some of the canyon, the wind catches the ice and frost and mist deteriorates. there is no water here.

We do not see into his palm yet.

He pauses as the clouds around him dissapate, looking out into an endless glassy ocean. Rock formations dot the ocean, just as any as teh husks he passed on his journey. He is hit with wind, a new level, deafening, violent, uneaaasing.

This pushes all the clouds away but it is drying him out. bits of rock flock off of him and fly backward, the sun continues to flythrough the sky, an awkward almost unending cycle. Almost a storbe light it is so fast. He lumbers forward.

He leans to the side, allowing sunlight to hit into his palm. We see he is holding a glacier, clutched in his fist.

The sun continues, and the winds of time pile sand and rock around his legs and fist.

With immense effort he lunges forward. His arm separates, pelting the ground with massive boulders, splitting down the middle. arm lee she he hamstrung, almost unable to move because of his massive weight. as the sun continues its cycling the water begins to recede, away from him. he is left in the desert, alone. A massive monolith.

Bons pass and he crumbles, into the dried lake bed. The sun continues. Water comes back. It fills his chest, making a lake, breaking thorough and pouring down into the massive canyon he carved.

it is human time now, we follow th ewater as it races down the canyon.

It eventually fills a pool, where there is a gap in a mountain range. A giant lake.

Along the way teh pieces of the giant are filled with water,

On our way back.

The little guy continues in his paradise. Unware of the levels of streams of time. Unknowing about his future Here his land slowly sways, glacial. We zoom out and the giant lumbers on.

EXT. DESERT - DAY

EXT. COUDSCAPE - DAY

The mountains we recognize ar almost out of frame. The camera continues it's relentless slow tracking forward. Here at the edge of the clouds they are less opaque. The canyon is much more visible, ending in giant rock formation, but far enough awa that it looks almost like a hairline crack on the giant salt flat.

Just a head a giant deep blue body of water shimmers. We are at a super long lense, like 50,000mm or somehting.

EXT. SALT FLAT BEACH

on the beacha great tsuna i rises, higher even than the height of the rock giant.

A long berm of land stretches as far as teh eye can see in both directions. This unbroken dune causes the wind to cream at the

EXT. MIST - DAY

A faint squeaking sound echoes through the fog.

A vine sways in the clouds, bisecting the blankess of the clouds.

A tiny gondola sways into view, the INVENTOR, a bipedal human proportioned character sits in a basket made of woven vines and vegetation. His skin is a chalky blue-green covered in complex layers of paint. He has makeshift pants from pieced together plant leaves, well worn.

Under the gondola there is nothing but clouds, there is no telling how high up he is.

He is unafraid.

He controls the gondola through a series of rock and wood and vines.

A system of pulleys with a small crank that the Inventor turns moves the gondola along the vine.

A coiled rope-vine is at his feet. The gondola is filled with an assortment of inventions for surveying/cartography and rock climbing.

The Inventor halts the gondola. It sways gently, seemingly miles above the earth's surface.

He sits with his eyes closed, silent. A low rumble like thunder rising in intensity.

The gondola bounces around as the noise becomes a deafening roar. A massive shadow sweeps by through the mist, dwarfing the Inventor and gondola. It passes and the sound fades and the Inventor continues moving the gondola along the vine, unphased.

EXT. ROCK WALL - DAY

The gondola creeps up to a giant rock wall. It's sheer face plummets until it is lost in the mist. No end in sight.

he Inventor anchors the gondola to the wall and grabs a satchel made from leaves. He ties the rope around his waist and disappears, scaling the rock wall with ease.

He uses gloves with carved rock hooks to help his climb and his shoes are also designed for climbing.

EXT. BOULDER FIELD - DAY

The Inventor pokes his head above the rock wall, his eyes dart back and forth taking in the surroundings.

He crawls over the edge and strides into a boulder field. Rocks ranging from house-sized to human size fill his field of view. A thick fog limits his sight distance.

He scrambles up a large boulder. He sets down his backpack and takes out a small carved wood container.

He flips open the lid, revealing a brightly colored paste.

He waits as the fog begins to lift and the sun breaks through the clouds.

He is in the middle of a massive boulder field.

A series of finger painted arrows are at his feet. In a wide range of colors.

At the rightmost edge of the bolder field is a grove of dead trees.

He dips his finger in the paint and draws a series of lines line of paint on the top of the boulder. He stares at the lines and slides down from the boulder.

He takes a deep breath and walks into the boulder field. Toward the trees.

Periodically he paints a bright yellow mark on the boulders, marking his path.

EXT. - BOULDER FIELD - DAY - LATER

After some time he stops and scrambles up another boulder. The trees are considerably closer, still to his right.

He continues his trek.

EXT. - DEAD TREE GROVE - DAY

He emerges from the boulder field in a grove of dead trees. Some smashed by rocks, all long dead., shells of their former selves.

He weaves through the felled trees and massive trunks.

He stops at a crack in the wall and stares. On the edge of the crack is the faintest hint of blue paint. Horizontal slashes a few inches wide, running up the side of the rock wall.

Close on his face.

He remembers.

EXT. - ALIVE TREE GROVE - DAY - FLASHBACK

The Little guy stands in front of a rock wall, a stern look across his face.

He dips his thumb in blue paint.

He smiles and marks the height of a CHILD in front of him.

He pats the kid's head and slides to the left. Another child is there. He dips his thumb and marks.

He slides left again, dips and marks.

He has seven children. He looks up.

A Woman is there, his partner. She gives a slight wave and a shrug. He nods and rounds up all the kids.

EXT. - ALIVE TREE GROVE - NIGHT - FLASHBACK

Music plays, tribal, serious. Firelight illuminates a circle of wide eyed, seated children. The Inventor stands in the middle of the circle.

He draws two lines in the dirt with his toe.

The children clap their hands and he bows.

He turns to the rock wall and paints a crude drawing of a mountain range, flat desert and some water. Three distinct parts.

He gestures to the ground, three distinct parts.

Each kid comes up and sets down a small figurine, bearing resemblance to each in turn. Painted with bright colors matching those on the children to an extent.

He then draws on the rock wall the same picture above, except one of the mountains is now depicted as a rock giant, a monster.

He indicates that the giant moves through the desert, drawing another picture. The desert has a few rock formations.

He then draws the giant lying on its back in the ocean, next to several other sleeping giants.

The children are still wide eyed, they begin murmuring, waiting for their favorite part.

The Little guy plays it up, entertaining the crowd. He acts modestly, then gives in and lays on his belly in the dirt. There are much fewer paint markings on his body.

He growls and stands, hunched. He drops rocks from his arms that land on the earth with a thud. Some of the figurians are smashed. Breathing heavily making guttural noises. He shuffles forward slowly, crossing the first line in the dirt. He slows even more. He begins to walk unsteadily. the kids shout and point, trying to guide him, show him the way to the second line.

He pretends to not understand, almost reaching the line and then veering off to the side.

He drops to his knees. Feigning exhaustion and disorientation.

The kids grow even more rambunctious jumping and pointing.

A small child, the smallest can't take it anymore and runs over to him, taking his hand and guiding him across the second line, where he collapses on his back and makes snoring noises.

The kids cheer.

He pretends to sleep a moment longer and then sits up, raising a hand.

The kids fall silent.

The man draws a final image on the wall. The giant stands with hundred of smaller figures at his feet. It raises a leg and smashes many of them.

EXT. LAKEHOUSE - NIGHT

A small rock and tree home sits out on stilts in the middle of a lake. here the man says goodnight to hall of his kids, each sleeping in a hammock. He embraces his wife and heads out the door.

She grabs his arm as he leaves.

He looks back at her and shakes his head.

She looks at him, her eyes pleading.

He lowers his head, turns and heads away from the house toward a hill and a small rock structure.

She stands in the doorway looking after him.

INT. WORKSHOP - NIGHT

The Inventor messes around with some compounds. Eventually he realizes that fire plus some of the compounds becomes dynamite. He experiments with this.

This causes the giant to stand up.

EXT. LAKEHOUSE - NIGHT

As the grounds lurches underfoot boulders rain from teh sky. The earth tilts nauseatingly. A boulder smahes into the mans home, sending it into the lake. The man sprints home just in time to see more boulders smash on top, burying the house.

EXT. - DEAD TREE GROVE - DAY - LATER

At his feet the man finds a few of the smashed figurines.

EXT. DBSERT - DAY

The giant approaches a great dam made from rocks and vegetation. On one side endless desert, on the other endless water. On either side great monoliths of long dead giants lie motionless. Those that made the trek and failed and those that succeeded.

Vast creeps ever closer to the dam, almost to his destination.

A low rumble and the giant veers to the left, away from the dam.

Smoke rises from the giant.

EXT. DESERT - DAY

As the Ground sinks below his feet, the inventor pulls a cord and wings snap out of his backpack.

A stiff breeze carries him upward as the giant crumbles below. His task is finally complete.

Staring down he sees the giants right hand, clutching an oasis with a small island at the center of a dried up lake.

On further inspection there is a tiny home on the island. Its the Inventors home. His eyes widen, his family may be alive.

He waits a moment and his eyes narrow.

He veers to the east and sails through the air. Toward a large body of water.

EXT. - DAM - DAY

The man is a speck in the sky, growing slowly. He is descending. Rapidly now. The man crash lands into a sand dune and scrambles up to an enormous dam made of sticks and rubble.

He frantically grabs the material, trying desperately to release the water.

His hands are torn and bleeding from the effort. His eyes are bloodshot. He collapses.

From hands and knees he continues to dig, but nothing seems to be happening.

He falls face first to the ground. Unmoving.

A tiny trickle appears on the dam.

The trickle grows.

A jet of water.

A larger jet, and a crack.

The crack expands up the surface of the dam, water flows freely now.

The water picks up the inventor and carries him downstream back toward Vast. The inventor's body is brought to rest just outside the giant's palm.

Screenplay 4th Draft - October 17, 2013

Vast
an animation by
Thomas Heban

thomas.heban@gmail.com
(614) 284-1271

2013.DAIM.ACCAD.OSU

TIMESCALES (T.S.) refer to the measurements of time as spatial planes. They are separated into human and geologic time. As such the landscape itself experiences time in a way humans are unable to perceive. *VAST* weaves in and out of these scales, just as one can imagine moving between the minute and massive physical scales. Timescales will incorporate the following as measurements and descriptors:

HUMAN: Second - Minute - Hour - Day - Week - Fortnight - Month - Year - Olympiad - Decade - Century - Millennium (1000 Years) -

GEOLOGIC: Epoch (millions of years) - Period (a number of epochs) - Era (a number of Periods) - Eon (a number of eras)

FADE IN

EXT. CLOUDSCAPE - DAY

The whole frame broils and churns with swirling clouds. Dark purple to light gray, wispy and jagged. Great spines of a mountain range jut through the vapor.

One of the largest peaks rises. It towers over the rest of the range, stretching higher and higher. Then...it plummets, vanishing.

Seconds later, a distant, deep rumble. The clouds fill in the void. The wound heals.

Equilibrium returns, the cloudscape billows and breathes. Now split, two mountain ranges stand stoically.

TITLE CARD (ITALICS): *HIC SUNT GIGANTES*

EXT. BARREN LANDSCAPE - DAY

SERIES OF SHOTS

--CRATER - A massive crater sits between the two mountain ranges. A gaping wound on the earth where two mountain ranges meet. Uprooted like some great redwood. Remnants of the lost peak.

--SALT FLATS - Evoking imagery of Utah's salt flats. The wind registers as sweeping waves in the white, hard packed soil.

--FOOTHILLS - The overlapping edges of mountains and salt flats form a BOULDER FIELD. Rocks both smooth and rough, of infinitely varied sizes, stretch the length of the range.

--DUNES - White soil darkens and adopts a reddish orange hue. The saltflat waves become dunes intermittently. Wind howls. Kicking up dust. Not a hint of green.

--CANYON - A great canyon splits the frame. A tear in the fabric of the landscape winding to infinity on the horizon. The camera floats along the winding canyon.

EXT. CANYON - "CAIRN" - DAY

Here the wind screams around a couple dozen boulders. The windward side of the rocks is polished to a mirror shine. Bons of sculpting.

From this rock pile more piles are visible. Irregularly spaced along the canyon, sometimes spilling in.

The landscape is home to dozens of these rock piles. Some clustered along the canyon's edge, others sprinkled across the expanse. Warts on the landscape. Berie, out of place.

EXT. CANYON - "SAILBOATS" - DAY

The next closest is a group of sail-like structures. These rocks appear to bend with the wind. Like a handful of sailboats in pursuit of an unknown finish line. Destined to run a never ending race.

One of the massive sails balances impossibly. Underneath it rests a circular dried lake bed with intricate grooves. Once teeming with life.

Intricate rock formations, smaller versions of the sailboat dot here and there in the lakebed.

EXT. CANYON - DAY - LATER

We continue flying onward, floating toward the horizon. The canyon meanders more visibly now. Still bone dry. We approach another rock formation.

EXT. CANYON - "SHINGLES" - DAY

Colossal stone sheets lie like irregular shingles. Almost worn smooth from the tormenting wind.

Half of the terraced structure hangs precariously over the canyon, sheets of rock slide forward every now and then. Almost regularly.

They disappear to oblivion as they careen over the lip of the canyon. We don't see them land. We hear the faint sounds of their impact.

The wind tears at the rocks, kicking up dust. Crevices house evidence of long dead mosses and lichens, in perpetual shade. Giving texture.

Another rock formation shimmers, barely visible on the horizon. Elongated, alternating patches of green and rock. It looks like the humps of some great sea serpent.

EXT. CANYON - "SERPENT" - DAY

The wind howls. The surface of these rocks are peppered by hundreds of divots, like scales. These rolled up rock formations create micro-climates. Shelter.

There is vegetation. Specks. Hints. Whispers. Green and vibrant, almost glowing with potential.

In one of these pockets the air is dense with what looks like dust, bright glittering flecks as well as duller, orange brown FLECKS.

They flit about like a swarm of bees at times, and flow like a great flock of birds at others.

Flecks that wander too close to the edge are pulled out into the harsh world beyond. In the sky, clouds dominate the frame.

EXT. CLOUDSCAPE - DAY

Thousands of years have passed since we were last here. The two mountain ranges appear closer, on a snail paced collision course.

A new mountain looms in the distance.

Black. In stark contrast to the clouds.

Breaks in the boiling cloudscape allow glimpses of the stark-white salt flats below. The faintest hints of the canyon are also there. A hairline crack from this vantage point.

We float over the cloudscape toward the dark, lone peak in the distance.

At this altitude there are glaciers, frozen chunks of ice. Freezing and thawing, growing and shrinking, ever changing.

A huge chunk of rock and ice tears off the mountainside. Disappearing through the clouds.

We drop through the broiling soup in pursuit.

EXT. BARREN LANDSCAPE - DAY

The rock slams into the foothills of the dark mountain. Below, the canyon stretches away pointing back to the mountain ranges. Monuments dot the landscape.

EXT. BARREN LANDSCAPE - SUNSET

The sun begins to set on the mountain ahead. Creating breathtaking, visually-viscous, gratuitously stunning imagery. ***hopefully***

We circle the peak in ever smaller concentric passes. Each sweeping arc reveals more detail of the mountain.

At the final pass we pause just long enough to glimpse a tormented visage in silhouette, carved into the mountainside.

Vast.

EXT. BARREN LANDSCAPE - NIGHT

A radiant canvas dotted with brilliant stars. The sky itself appears to spin as the planet rotates.

EXT. BARREN LANDSCAPE - DAY/NIGHT

We are with Vast now. At his timescale. Here there is no day and night. He moves at a literally glacial pace. Human day and night exist simultaneously here.

Visually this will take some experimenting. The way Vast would experience the passage of time would not have day and night. There would be a simultaneous presence of night and day. From this point forward the current timescale will be noted.

EXT. GIANT'S PALM - (TIMESCALE - GEOLOGIC)

The leading edge of the GIANT'S PALM. Moving like a colossal icebreaker ship. Cutting through the salt flat, in it's wake, glacial groves.

Rocks that pile up in front erode by the wind so quickly they appear to melt. A shifting malleable canvas.

EXT. BARREN LANDSCAPE - (TIMESCALE - GEOLOGIC)

He clutches the glacier in his fist. Now the rock and hard packed dirt undulates fluidly, the erosive wind unceasing, making ripples. Primed for life, yet unable to sustain it longer than the blink of an eye.

But Vast is forged of harder rock, more resistant to the effects of time. Able to withstand this environmental onslaught. The harshness of epochs. Eons.

The clouds obscure his full form. His spine disappears into the cloudscape.

He still erodes, but much slower than his surroundings. Time has taken its toll. One of his legs is completely eroded away. Behind him he drags a massive fist, that he uses almost as a crutch.

He lumbers toward a massive ocean. High and low tide here are eras of melting poles and spreading desert.

And at his timescale we experience what must be glacial time. He moves ever so slowly. Around him the wind gusts.

We begin to jump back and forth between timescales.

EXT. BARREN LANDSCAPE - DAY - (TIMESCALE - HUMAN)

He stops his march, as the clouds around him rise. The rock giant gazes across an endless glassy ocean. Rock formations dot the ocean, just as colossal as the husks he passed on his journey.

EXT. BARREN LANDSCAPE - (TIMESCALE - GEOLOGIC)

As the clouds rise and an even harsher wind screams. Deafening, violent, unceasing, drying him out.

Chunks of rock peel off of him and fly backward. He erodes faster now. He plods forward, dragging his arm behind him. He clutches the glacier in his fist.

At his feet a deep-blue body of water shimmers.

The winds of time pile sand and rock around his legs and fist.

With immense effort he lunges forward.

EXT. COAST - DAY - (TIMESCALE - HUMAN)

His forearm splits down the middle. Deafening, like an atom bomb.

His arm cracks again, this time at the wrist.

Massive boulders pelt the ground.

He topples forward, splashing into the ocean. The waters settle.

His fist remains behind.

EXT. COAST - (TIMESCALE - GEOLOGIC)

TIMELAPSE SERIES OF SHOTS:

--The water recedes. He remains in the desert, alone. A hulking monolith. Eons pass and he erodes on the dried ocean floor, his once sharp features smoothing before our eyes.

The ocean returns. Surrounding him. Vast is an island, now. An archipelago.

EXT. GIANT'S PALM - (TIMESCALE - GEOLOGIC)

In his detached fist the glacier begins to melt. Through millenia.

His palm fills with water, forming a lake surrounded by a steep rock wall.

EXT. GIANT'S PALM - DAWN - (TIMESCALE - HUMAN)

It's quiet here. Some mist settles in around the edge of the giant's palm. An island occupies the middle of the lake.

EXT. GIANT'S PALM - (TIMESCALE - GEOLOGIC)

Emerald groundcover sprouts on the island. It becomes a jungle.

In a flash the forest vanishes, just as fast as it appeared.

Chronologically the second story takes place in this moment. This second story takes place entirely at a Human timescale and will be intercut with Vast's story.

EXT. BARREN LANDSCAPE - DAY - (TIMESCALE - HUMAN)

The Giant's palm remains. Just another rock on the landscape.

Vast rests in an ocean.

Ocean water rushes down the canyon, passing all off the rock formations along the way. It's been so long that the rocks are eroded almost past recognition.

EXT. FOOTHILLS - DAY - (TIMESCALE - HUMAN)

Water fills the crater between the two mountain ranges. It's smaller than before. The mountains almost touching once again. The cycle can begin anew.

****The following story of the character DAYU takes place entirely within the instant that the forest exists within the GIANT'S PALM. Unless otherwise noted these events take place at Human Timescale.**

EXT. BLACKNESS - NIGHT

A sea of stars on a black field.

The stars are specks, floating in a gel. All flashes black for an instant.

It's a macro shot of an eye.

EXT. MIST - DAY

A vine sways in the clouds, bisecting the blankness. A tiny gondola sways into view.

A faint squeaking sound echoes through the fog. A carved wooden pulley rolls along a large woven rope vine.

DAYU sits in the gondola, complex layers of paint cover his chalky blue-green skin. He wears makeshift pants from pieced together plant leaves, well worn. He stares upward at the pulley system.

Dayu's eyes track the pulleys to the floor of the gondola.

A wrinkled, long nailed foot depresses a wooden pedal, propelling the gondola. More beard than man, with a beard more vines than hair, CHARON, sits opposite Dayu. It is impossible to tell where the gondola ends and the ancient boatman begins.

Under the gondola only swirling clouds, no way to tell how high up they are.

A coiled rope-vine sits at his feet. An assortment of inventions for surveying/cartography and rock climbing fill the gondola.

Charon stares out into the clouds, Dayu's eyes dart about.

EXT. MIST - DAY - LATER

Charon halts the gondola in front of a sheer rock face. The vines groan and creak.

Dayu sits with his eyes closed, silent. He inhales deeply.

A wrinkled old hand emerges from Charon's beard. He extends a finger toward the rock wall.

Dayu stares at the ancient man.

Charon jabs his finger upward.

Dayu stands and walks to the edge of the gondola.

Charon clears his throat, he extends a small wooden box.

Dayu takes the box and turns to the rock wall.

The clouds part for the briefest of moments. Hundred of feet below the gondola sits a massive lake and an island covered with thick vegetation.

Dayu climbs.

EXT. BOULDER FIELD - DAY

Dayu pokes his head above a glacial wall. His eyes dart back and forth taking in the surroundings.

He crawls over the edge and strides ahead. A thick fog hangs in the air.

The sun breaks through the clouds, and as the fog lifts. He stands in the middle of a massive boulder field.

A series of finger painted slashes are at his feet. In a wide range of colors. Some faded some more recent.

He takes out the small carved wood container.

He flips open the lid, tiny flecks fall to the ground.

He dips his finger in the colored powder, closing the box quickly. He and draws another tick mark on the top of the boulder.

He stares at the lines for a moment then descends into the field.

EXT. GROVE - DAY

Boulders give way to massive tree trunks. Dayu strides through a grove of dead trees. Some smashed by rocks, all long dead. Shells of their former selves.

Inches from the ground the faintest hint of dust particles swirl.

He weaves through the felled trees and massive trunks. toward a giant boulder.

He stops at a crack in the wall. Horizontal slashes a few inches wide, run up the side of the passage.

Close on his face.

He opens the wooden box and sets it on a stone.

He picks up a rock in both his hands and smashes the tiny box, sending up a cloud of dust. The FLECKS begin to glow with life, attracting more from the surrounding trees.

The cloud grows larger and larger, surrounding Dayu.

His eyes grow wide. His pupils dilate.

He hacks over and over again. Coughing up blood.

He collapses to his back. His eyes remain open.

A single FLECK floats across Dayu's face. To the fleck, Dayu is a landscape, his mouth a canyon, his nose a mountain.

The Fleck floats toward Dayu's eye, just millimeters from his cornea.

The Fleck then pushes into Dayu's eye, through the cornea into his lens. His eye clouds over with cataracts so dense it's almost rock.

He sees.

Here he is made aware of other timescales through this dust, part of a shared consciousness.

A third timescale is revealed, that of the glowing particles in the air, the FLECKS. The antithesis of GEOLOGIC time. A lifespan lasts mere moments. Dayu and the audience is able to perceive this timescale now, everything slows almost to a halt.

EXT - GROVE SERIES OF SHOTS - (TIMESCALE - FLECK)

Dayu travels in at As he travels the camera jumps from Fleck to Fleck. Depicted with fuzzy imagery and muffled sound. As the Fleck's life progresses images become vibrant and sound is crisp. As a Fleck dies images become desaturated, fuzzy and dull, and the P.O.V. jumps to another Fleck.

The camera sweeps through the jungle stopping periodically to observe the absolute abundance of life in this place. Everywhere are Flecks.

SERIES OF SHOTS

--Fungi in all colors.

--Thick canopied trees and fern-like ground cover.

--A waterfall overlooking an oasis. Birds soar by.

--Under the water the surface sparkles and the water boils.

--Aerial shots circle the island, Dayu's home. Tiny huts and docks with wooden boats pepper the shoreline, a peaceful place.

--The camera straddles the rocky ridge surrounding the lake. Oasis to the left, desolation to the right. Flecks fly by and a faint roaring grows in intensity.

--We want nothing to do with that place. But we're swept out, caught in a riptide.

EXT. GROVE - SUNSET - (TIMESCALE - HUMAN)

CLOSE ON: Dayu. Bluish blood drips from his eyes and nose and ears. The experience has killed him, at least his physical form.

Flecks of light surround him, flashing like fireflies. They lift his body.

EXT. GIANT'S PALM - CONTINUOUS - (TIMESCALE - HUMAN)

The camera pulls out slowly to reveal that the dead grove occupies the back half of the island - in the GIANT'S PALM.

A rock spine runs down the middle of the island. Vines run between the spines, barely visible a gondola swings from one.

The GIANT'S PALM clutches the entire OASIS.

EXT. BARREN LANDSCAPE - SUNSET

Part of Vast's forearm remains, with waterfalls running down it. To the right, far in the distance, Vast rests in the sea.

The waves crash endlessly into his body.

EXT. OCEAN - SUNSET (TIMESCALE - FLECKS)

CLOSE ON: Vast's profile, the waves break, slower and slower until they appear to freeze in mid air.

In the mist from the waves Flecks wheel back and forth. Time slows almost to a stop.

The air itself begins to glow as millions of Flecks come to life.

TITLE CARD: V A S T

FADE OUT

Screenplay 5th Draft - December 8, 2013

V A S T
an animation by
Thomas Heban

thomas.heban@gmail.com
(614) 284-1271

2013.DAIM.ACCAD.OSU
5th Draft

TIMESCALES (T.S.) refer to the measurements of time as spatial planes. They are separated into human and geologic time. As such the landscape itself experiences time in a way humans are unable to perceive. VAST weaves in and out of these scales, just as one can imagine moving between the minute and massive physical scales. Timescales will incorporate the following as measurements and descriptors:

HUMAN: Second - Minute - Hour - Day - Week - Fortnight - Month - Year - Olympiad - Decade - Century - Millennium (1000 Years) -

GEOLOGIC: Epoch (millions of years) - Period (a number of epochs) - Era (a number of Periods) - Eon (a number of eras)

FADE IN

EXT. CLOUDSCAPE - DAY

The whole frame broils and churns with swirling clouds. Dark purple to light gray, wispy and jagged. Great spines of a mountain range jut through the vapor.

One of the largest peaks rises. It towers over the rest of the range, stretching higher and higher. Then...it plummets, vanishing.

Seconds later, a distant, deep rumble. The clouds fill in the void. The wound heals.

Equilibrium returns, the cloudscape billows and breathes. Now split, two mountain ranges stand stoically.

TITLE CARD (ITALICS): HIC SUNT GIGANTES

EXT. BARREN LANDSCAPE - DAY

SERIES OF SHOTS

--CRATER - A massive crater sits between the two mountain ranges. A gaping wound on the earth where two mountain ranges meet. Uprooted like some great redwood. Remnants of the lost peak.

--SALT FLATS - Evoking imagery of Utah's salt flats. The wind registers as sweeping waves in the white, hard packed soil.

--FOOTHILLS - The overlapping edges of mountains and salt flats form a BOULDER FIELD. Rocks both smooth and rough, of infinitely varied sizes, stretch the length of the range.

--DUNES - White soil darkens and adopts a reddish orange hue. The saltflat waves become dunes intermittently. Wind howls. Kicking up dust. Not a hint of green.

--CANYON - A great canyon splits the frame. A tear in the fabric of the landscape winding to infinity on the horizon. The camera floats along the winding canyon.

EXT. CANYON - "CAIRN" - DAY

Here the wind screams around a couple dozen boulders. The windward side of the rocks is polished to a mirror shine. Eons of sculpting.

From this rock pile more piles are visible. Irregularly spaced along the canyon, sometimes spilling in.

The landscape is home to dozens of these rock piles. Some clustered along the canyon's edge, others sprinkled across the expanse. Warts on the landscape. Eerie, out of place.

EXT. CANYON - "SAILBOATS" - DAY

The next closest is a group of sail-like structures. These rocks appear to bend with the wind. Like a handful of sailboats in pursuit of an unknown finish line. Destined to run a never ending race.

One of the massive sails balances impossibly. Underneath it rests a circular dried lake bed with intricate grooves. Once teeming with life.

Intricate rock formations, smaller versions of the sailboat dot here and there in the lakebed.

EXT. CANYON - DAY - LATER

We continue flying onward, floating toward the horizon. The canyon meanders more visibly now. Still bone dry. We approach another rock formation.

EXT. CANYON - "SHINGLES" - DAY

Colossal stone sheets lie like irregular shingles. Almost worn smooth from the tormenting wind.

Half of the terraced structure hangs precariously over the canyon, sheets of rock slide forward every now and then. Almost regularly.

They disappear to oblivion as they careen over the lip of the canyon. We don't see them land. We hear the faint sounds of their impact.

The wind tears at the rocks, kicking up dust. Crevices house evidence of long dead mosses and lichens, in perpetual shade. Giving texture.

Another rock formation shimmers, barely visible on the horizon. Elongated, alternating patches of green and rock. It looks like the humps of some great sea serpent.

EXT. CANYON - "SERPENT" - DAY

The wind howls. The surface of these rocks are peppered by hundreds of divots, like scales. These rolled up rock formations create micro-climates. Shelter.

There is vegetation. Specks. Hints. Whispers. Green and vibrant, almost glowing with potential.

In one of these pockets the air is dense with what looks like dust, bright glittering FLECKS as well as duller, orange brown FLECKS.

They flit about like a swarm of bees at times, and flow like a great flock of birds at others.

FLECKS that wander too close to the edge are pulled out into the harsh world beyond. In the sky, clouds dominate the frame.

EXT. CLOUDSCAPE - DAY

Thousands of years have passed since we were last here. The two mountain ranges appear closer, on a snail paced collision course.

A new mountain looms in the distance.

Black. In stark contrast to the clouds.

Breaks in the boiling cloudscape allow glimpses of the stark-white salt flats below. The faintest hints of the canyon are also there. A hairline crack from this vantage point.

We float over the cloudscape toward the dark, lone peak in the distance.

At this altitude there are glaciers, frozen chunks of ice. Freezing and thawing, growing and shrinking, ever changing.

A huge chunk of rock and ice tears off the mountainside. Disappearing through the clouds.

We drop through the broiling soup in pursuit.

EXT. BARREN LANDSCAPE - DAY

The rock slams into the foothills of the dark mountain. Below, the canyon stretches away pointing back to the mountain ranges. Monuments dot the landscape.

EXT. BARREN LANDSCAPE - SUNSET

The sun begins to set on the mountain ahead. Creating breathtaking, visually-viscous, gratuitously stunning imagery. **hopefully**

We circle the peak in ever smaller concentric passes. Each sweeping arc reveals more detail of the mountain.

At the final pass we pause just long enough to glimpse a tormented visage in silhouette, carved into the mountainside.

Vast.

EXT. BARREN LANDSCAPE - NIGHT

A radiant canvas dotted with brilliant stars. The sky itself appears to spin as the planet rotates.

EXT. BARREN LANDSCAPE - DAY/NIGHT

We are with Vast now. At his timescale. Here there is no day and night. He moves at a literally glacial pace. Human day and night exist simultaneously here.

Visually this will take some experimenting. The way Vast would experience the passage of time would not have day and night. There would be a simultaneous presence of night and day. From this point forward the current timescale will be noted.

EXT. GIANT'S PALM - (TIMESCALE - GEOLOGIC)

The leading edge of the GIANT'S PALM. Moving like a colossal icebreaker ship. Cutting through the salt flat, in it's wake, glacial groves.

Rocks that pile up in front erode by the wind so quickly they appear to melt. A shifting malleable canvas.

EXT. BARREN LANDSCAPE - (TIMESCALE - GEOLOGIC)

He clutches the glacier in his fist. Now the rock and hard packed dirt undulates fluidly, the erosive wind unceasing, making ripples. Primed for life, yet unable to sustain it longer than the blink of an eye.

But Vast is forged of harder rock, more resistant to the effects of time. Able to withstand this environmental onslaught. The harshness of epochs. Eons.

The clouds obscure his full form. His spine disappears into the cloudscape.

He still erodes, but much slower than his surroundings. Time has taken its toll. One of his legs is completely eroded away. Behind him he drags a massive fist, that he uses almost as a crutch.

He lumbers toward a massive ocean. High and low tide here are eras of melting poles and spreading desert.

And at his timescale we experience what must be glacial time. He moves ever so slowly. Around him the wind gusts.

We begin to jump back and forth between timescales.

EXT. BARREN LANDSCAPE - DAY - (TIMESCALE - HUMAN)

He stops his march, as the clouds around him rise. The rock giant gazes across an endless glassy ocean. Rock formations dot the ocean, just as colossal as the husks he passed on his journey.

EXT. BARREN LANDSCAPE - (TIMESCALE - GEOLOGIC)

As the clouds rise and an even harsher wind screams.
Deafening, violent, unceasing, drying him out.

Chunks of rock peel off of him and fly backward. He erodes
faster now. He plods forward, dragging his arm behind him.
He clutches the glacier in his fist.

At his feet a deep-blue body of water shimmers.

The winds of time pile sand and rock around his legs and
fist.

With immense effort he lunges forward.

EXT. COAST - DAY - (TIMESCALE - HUMAN)

His forearm splits down the middle. Deafening, like an atom
bomb.

His arm cracks again, this time at the wrist.

Massive boulders pelt the ground.

He topples forward, splashing into the ocean. The waters
settle.

His fist remains behind.

EXT. COAST - (TIMESCALE - GEOLOGIC)

TIMELAPSE SERIES OF SHOTS:

--The water recedes. He remains in the desert, alone. A
hulking monolith. Eons pass and he erodes on the dried ocean
floor, his once sharp features smoothing before our eyes.

The ocean returns. Surrounding him. Vast is an island, now.
An archipelago.

EXT. GIANT'S PALM - (TIMESCALE - GEOLOGIC)

In his detached fist the glacier begins to melt. Through
millenia.

His palm fills with water, forming a lake surrounded by a
steep rock wall.

EXT. GIANT'S PALM - DAWN - (TIMESCALE - HUMAN)

It's quiet here. Some mist settles in around the edge of the giant's palm. An island occupies the middle of the lake.

EXT. GIANT'S PALM - (TIMESCALE - GEOLOGIC)

Emerald groundcover sprouts on the island. It becomes a jungle.

In a flash the forest vanishes, just as fast as it appeared.

Chronologically the second story takes place in this moment. This second story takes place entirely at a Human timescale and will be intercut with Vast's story.

EXT. BARREN LANDSCAPE - DAY - (TIMESCALE - HUMAN)

The Giant's palm remains. Just another rock on the landscape.

Vast rests in an ocean.

Ocean water rushes down the canyon, passing all off the rock formations along the way. It's been so long that the rocks are eroded almost past recognition.

EXT. FOOTHILLS - DAY - (TIMESCALE - HUMAN)

Water fills the crater between the two mountain ranges. It's smaller than before. The mountains almost touching once again. The cycle can begin anew.

****The following story of the character DAYU takes place entirely within the instant that the forest exists within the GIANT'S PALM. Unless otherwise noted these events take place at Human Timescale.**

EXT. MIST - DAY

A vine bobs in the clouds, bisecting the blankness.

A tiny GONDOLA sways into view. A giant SAIL hangs from the GONDOLA, giving the appearance of an upside down sailboat.

A carved wooden pulley rolls along a woven rope vine. A faint squeaking sound echoes through the fog.

DAYU, a boy of 10, sits in the GONDOLA, complex layers of paint cover his tanned skin. He wears sewn but primitive pants.

DAYU's eyes track the pulleys to the floor of the GONDOLA.

Wrinkled feet depress a wooden pedal, steering the GONDOLA. More beard than man, with a beard more vines than hair, CHARON, sits opposite DAYU.

A thick fog permeates, dampening the creaking sways of the GONDOLA.

DAYU

What do you remember of the Oasis?

CHARON

Again?

DAYU

I like to hear about it. It helps me see it in my head.

CHARON

I couldn't have been more than four when we left. I remember smells more than anything. The smell of the trees, moss and mud. The shades of green. Lucky I was there as long as I was.

DAYU

I think I'd like to see it someday.

CHARON stares out into the fog.

CHARON

We can never go back, Dayu. Only forward.

DAYU

But I never got to choose.

CHARON leans back against the GONDOLA, pondering the response.

CHARON

Take a look out there.

DAYU

(sighs)

I've seen it before, Grandad. It's only the clouds.

CHARON
Been up this far before have we?

DAYU
You know we have.

CLOSE ON: CHARON's eyes. Cataracts dull the highlights. He is blind.

CHARON
Perhaps, we go a little further
tomorrow?

The boy sits back in his seat. The GONDOLA creaks onward, pulled by the wind.

EXT. CLOUDSCAPE - LATER

Warmer colors saturate the fog. DAYU and CHARON glide upward.

CHARON
Take a look out there, my boy.

DAYU leans over the edge of the GONDOLA.

Nothing.

DAYU
It's the same as always Grandad.
What am I looking for?

CHARON
You'll know it when you see it.

DAYU cranes his neck peering into the fog.

CHARON
Wait for it.

The GONDOLA picks up speed, the sail whipping in the wind. The GONDOLA breaches top of the cloudscape.

CHARON
Now.

DAYU
But how...

CHARON
Tell me what you see.

DAYU is speechless. He's never been up this high. Never actually seen any of this.

DAYU
But how did you?

CHARON
Tell me.

DAYU
I see water.

An ocean extends as far as the eye can see.

CHARON
The ocean.

DAYU
Out there the the ocean and desert
and sky meet.

CHARON
Good. Keep an eye on that point.
Never lose sight of it. That's
where the sun is born.

DAYU
The sun is born?

CHARON
Everything is born, Dayu.

The fog dissipates. To DAYU's left the spine of a mountain range extends to infinity.

DAYU
(gasps)
There are Mountains! Some in the
ocean and more in the desert.

CHARON smiles at the boy's excitement.

CHARON
Not mountains, GIGANTES.

DAYU
Gi-gan-tes?

DAYU tastes the word.

CHARON
They started life as mountains, and
yes they end their lives the same
way. But the middle is what counts.

DAYU
Tell me about them.

DAYU waits to hear more from his Grandfather. After a long pause.

CHARON
Where to begin. Legend says that when two mountains collide a they meld together and make a shell. Like a giant moth's cocoon. Eons later, the shell crashes to the ground and breaks open. And a GIGANTE emerges. GIGANTES molded our land and protect us. Every one spends its entire life searching for water to send back to their kin.

DAYU
But I thought mountains didn't move.

CHARON
Maybe not to you and me, and not on their own. But they live much longer than we do. They are a lot like us. They are vulnerable, Dayu.

The GONDOLA drifts on.

CHARON pulls out a rock from under his beard. Handing it to DAYU. The rock is almost the size of DAYU's torso.

DAYU
What is this?

CHARON
That my boy is a GIGANTE's Heart. It would have been your father's. Now it's yours. The world in the palm of your hand.

DAYU turns it over in his hands.

CHARON
Look closely you can see the FLECKS scattered across the surface. That's a GIGANTE's essence. If you lived long enough you could watch them melt away before your eyes. They are destined to erode to join the landscape.

Through the fog a sharp cracking sound and a deep rumble behind the GONDOLA.

Silence.

Then a massive splash.

CLOSE ON CHARON's cataract filled eyes.

CHARON

You hold the power to move
mountains within you.

CHARON halts the GONDOLA in front of a sheer rock face. The mouth of a CAVE is visible in the craggy slope. Twin waterfalls cascade down the rock face feeding the lake below.

CHARON

That's enough for today. Now get
that canvas out, it can get cold up
here.

EXT. CLOUDSCAPE - DAWN

Hundreds of feet below the GONDOLA sits a massive lake. An island covered with thick vegetation juts out of the water.

DAYU

What's it like?

CHARON

(chuckles)
Oh your hearing and smell really
pick up the slack. Sometimes I
forget, you don't even really miss
it.

DAYU

You know what I mean.

CHARON

Depends on the wind. When I helped
my Mother and Father across I got a
glimpse. But it's a one way
journey. Part of me moved forward
with them. I guess the rest of me
will catch up soon enough.

DAYU sits in silence. Taking in the words.

CHARON exhales but doesn't look at DAYU.

CHARON

At first it's a lot like drowning I suppose. Like your foot is caught and your head is inches from the surface. So close that you can feel the cool air. You can reach your arms out, but there's nothing to hold on to. Then you wonder why. Then you don't wonder much at all. At least that's what I imagine.

They sit in silence for a moment.

The vine groans as the GONDOLA sways in place. Charon looks into his grandson's eyes.

CHARON

Do you know why we are here my boy.

DAYU

I think so.

CHARON

Then you must understand my hesitation.

The water roars endlessly.

CHARON releases the brake and the GONDOLA lurches forward.

INT. CAVE - PASSAGE - DAY

The walls glitter with thousands of FLECKS. DAYU sits with his eyes closed, silent. He inhales deeply.

The GONDOLA glides on. The passage narrows to the point where it scrapes the sides of the GONDOLA. They are nearly stuck for an instant, then the passage opens up.

INT. CAVE - GRAND ROOM - DAY

DAYU's eyes dart back and forth taking in the surroundings. Beam of light shine through cracks in the ceiling.

CHARON

You're in that seat ahead of your time, Dayu.

DAYU hangs over one side staring downward.

DAYU

I saw Father's map once when I was smaller. It was made up of dozens of sheets of paper, all covered in scribbles. Each piece connected by a string. I thought if I even breathed too heavy the whole thing would tear to pieces. I remember looking at a couple of the pages and recognizing our home in the mountainside. But there were some places I didn't recognize. There was more, but he caught me looking at the map. He was furious. He couldn't even look at me.

DAYU wipes his nose.

DAYU

Dad told me about the Mountains. In his sleep he would describe things that he saw. I would try to write them down to ask him about later.

CHARON

Did you?

DAYU

I was always too scared. Sometimes he would just scream. I was there when they took him away.

DAYU looks at the old man and smiles.

CHARON

Let me see your heart.

DAYU

What?

CHARON

Let me see your Heart.

DAYU

But you're blind.

CHARON

That doesn't mean I can't see.

DAYU hands the GIGANTE'S HEART to CHARON.

Tiny FLECKS emit from the walls themselves. Deep blue glassy water shines beneath the GONDOLA.

FLECKS dart across the water's surface.

CHARON clears his throat.

CHARON

I trust in you. When you see something, you commit to it with your whole heart. And that HEART will seem small someday.

DAYU

How will I know what to do?

CHARON

If you don't take time to live, you're life will flash by. Find your own way. Someday you will move mountains, I promise.

CHARON splits off a chunk of the GIANT'S HEART. FLECKS pour from the exposed rock face.

CHARON

I'm sorry to put this on you my boy. Now go!

The FLECKS around the room begin to glow with life. Tiny crimson SUNS orbiting the room.

The cloud grows larger and larger, surrounding the GONDOLA.

CHARON'S blind eyes grow wide. He wobbles to his feet.

The FLECKS turn toward CHARON.

The OLD MAN topples over the side of the GONDOLA.

The cloud races after him as he falls.

He lands with a splash.

The FLECKS are upon him. They encase his body.

The cloud grows so dense it envelops DAYU. He claps a hand over his eyes. He stomps on the pedal, propelling him from the cave.

A single FLECK floats across CHARON's face. To the FLECK, CHARON is a landscape, his mouth a canyon, his nose a mountain.

The FLECK floats toward CHARON's eye, just millimeters from his cornea. The FLECK then pushes into CHARON's eye, through the cornea into his lens. His cataracts disappear for an instant.

He sees.

SERIES OF SHOTS

--The camera sweeps back through the passage and explodes out into the cloudscape.

--DAYU sits in CHARON's seat in the GONDOLA, The GIGANTE's HEART next to him. The GONDOLA races downward.

--A cloud of FLECKS roars past him.

--We swoop down the mountain face, traveling with the waterfalls.

--Birds soar past.

--We fly over the OASIS.

--A thick tree canopy sweeps by.

-- Dwellings carved into the rock face are perched high above the OASIS.

--The camera straddles the rocky ridge surrounding the lake. Paradise to the left, desolation to the right.

--We want nothing to do with that place. But we're swept out, caught in a riptide.

EXT. CAVE - GRAND ROOM - SUNSET - (TIMESCALE - HUMAN)

CLOSE ON: CHARON. His body has taken on a rock-like quality. He is almost indiscernible from the other piles of rubble in

All but the tiniest FLECKS have gone.

His eyes are stone.

EXT. BARREN LANDSCAPE - SUNSET (TIMESCALE - HUMAN)

The cloud of FLECKS rides the wind, racing back toward the mountain range. The cloud grows less dense by the second.

By the time it reaches the crater the CLOUD is nearly gone.

EXT. CRATER - SUNSET (TIMESCALE - FLECKS)

A single FLECK buries itself in the dirt.

EXT. OCEAN - SUNSET (TIMESCALE - FLECKS)

CLOSE ON: VAST'S profile, the waves break, slower and slower until they appear to freeze in mid air.

The camera pushes in close so we can see VAST'S FLECKS shimmering.

And just like that the light vanishes.

EXT. CRATER - SUNSET (TIMESCALE - GEOLOGIC)

The ground glows. A tiny mountain pokes above the surface.

TITLE CARD: V A S T

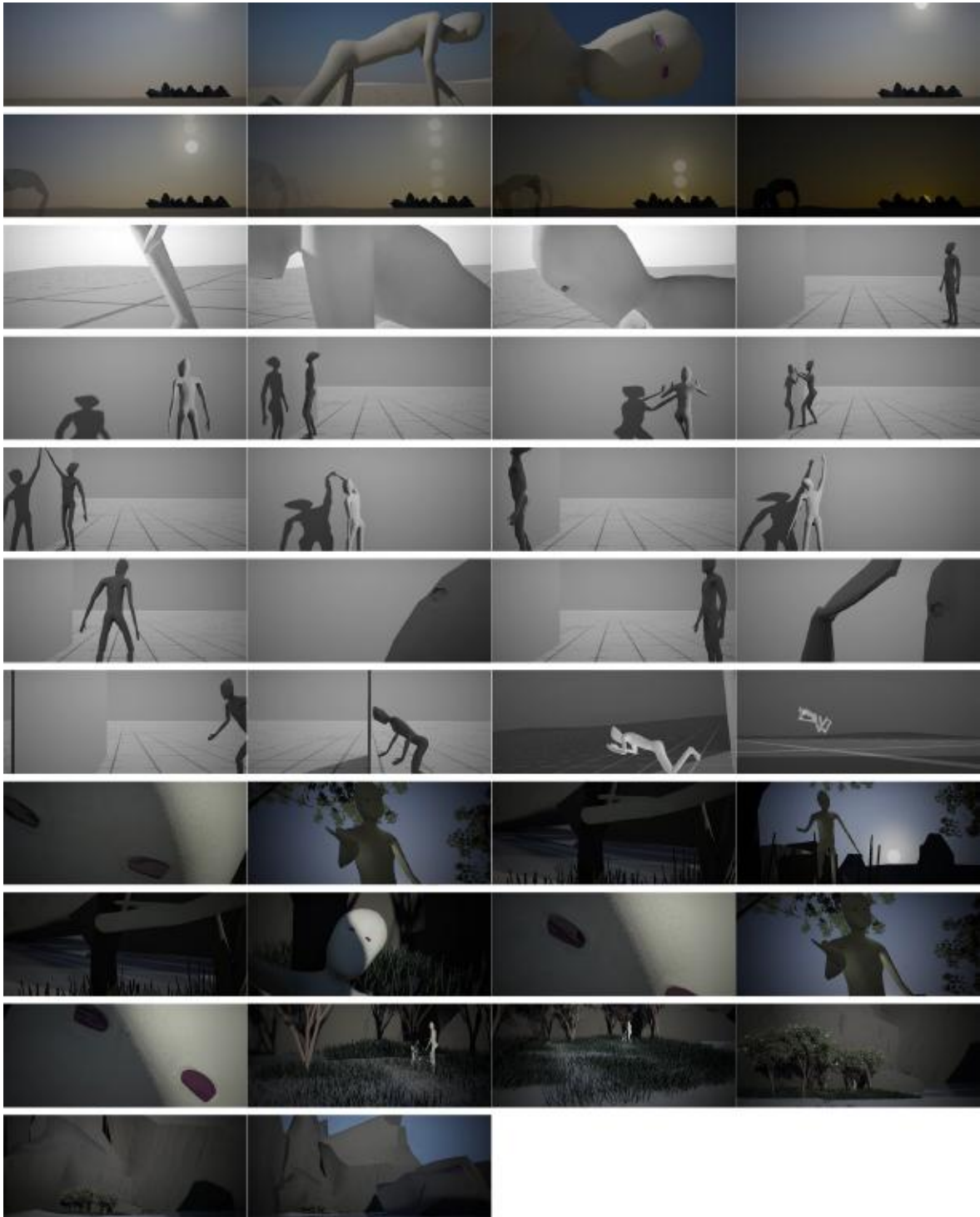
FADE OUT

Appendix D: Story Sequence Thumbnails

Story Sequence *The Giant's Palm*



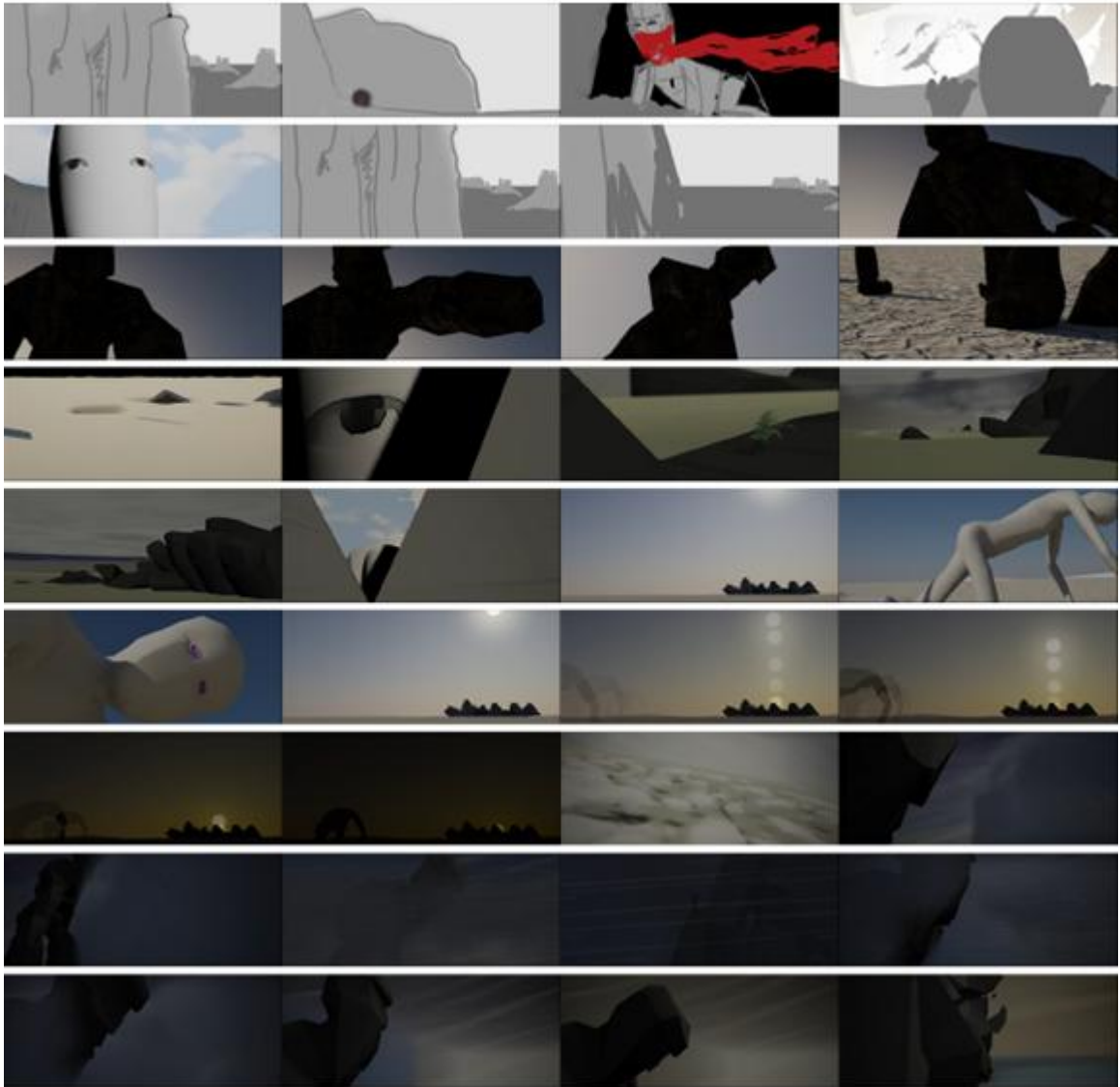
Story Sequence *Displaced Hero*



Story Sequence *Here Is Vast*

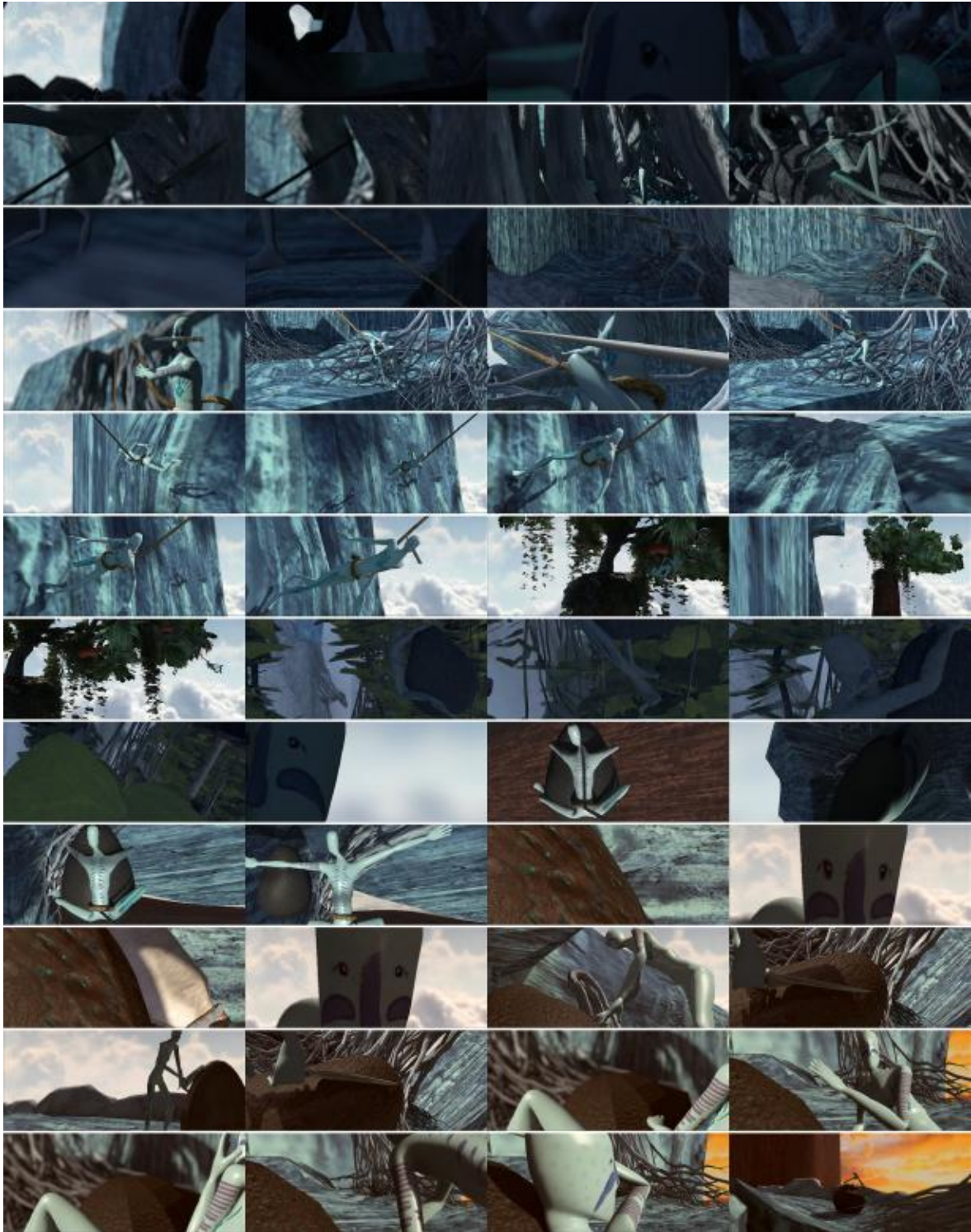


Story Sequence *Of Capes and Rocks*

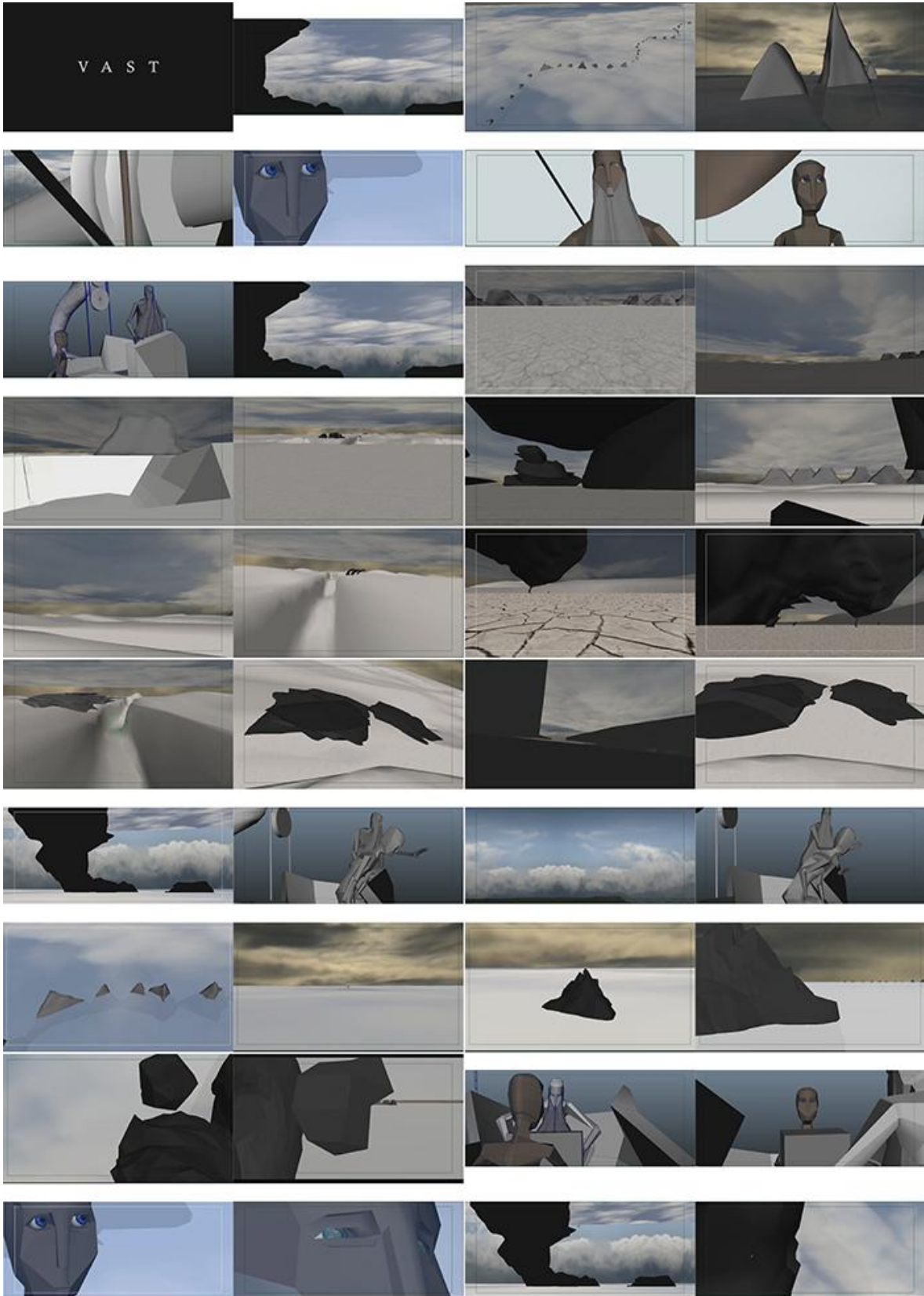


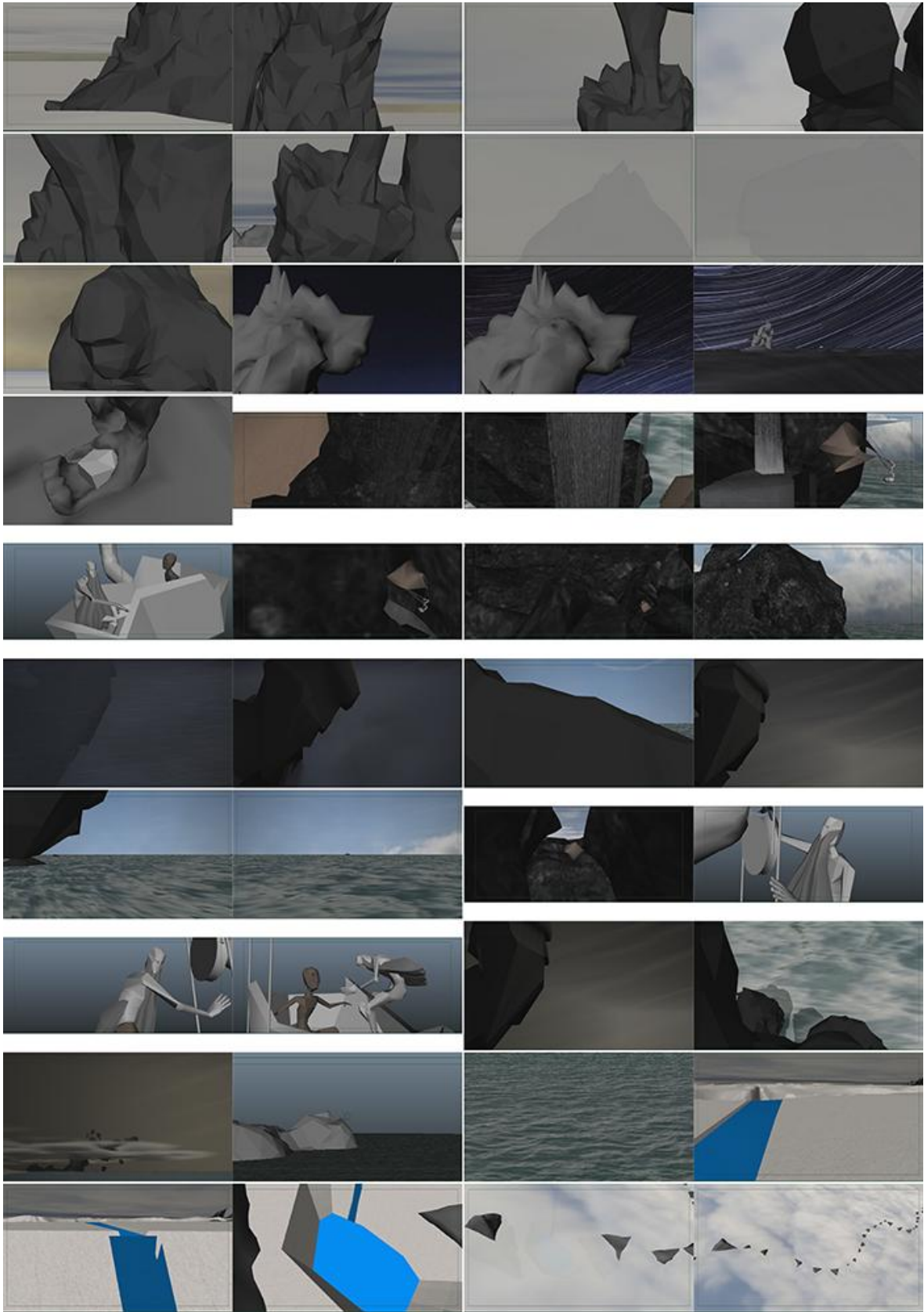


Story Sequence *Little*

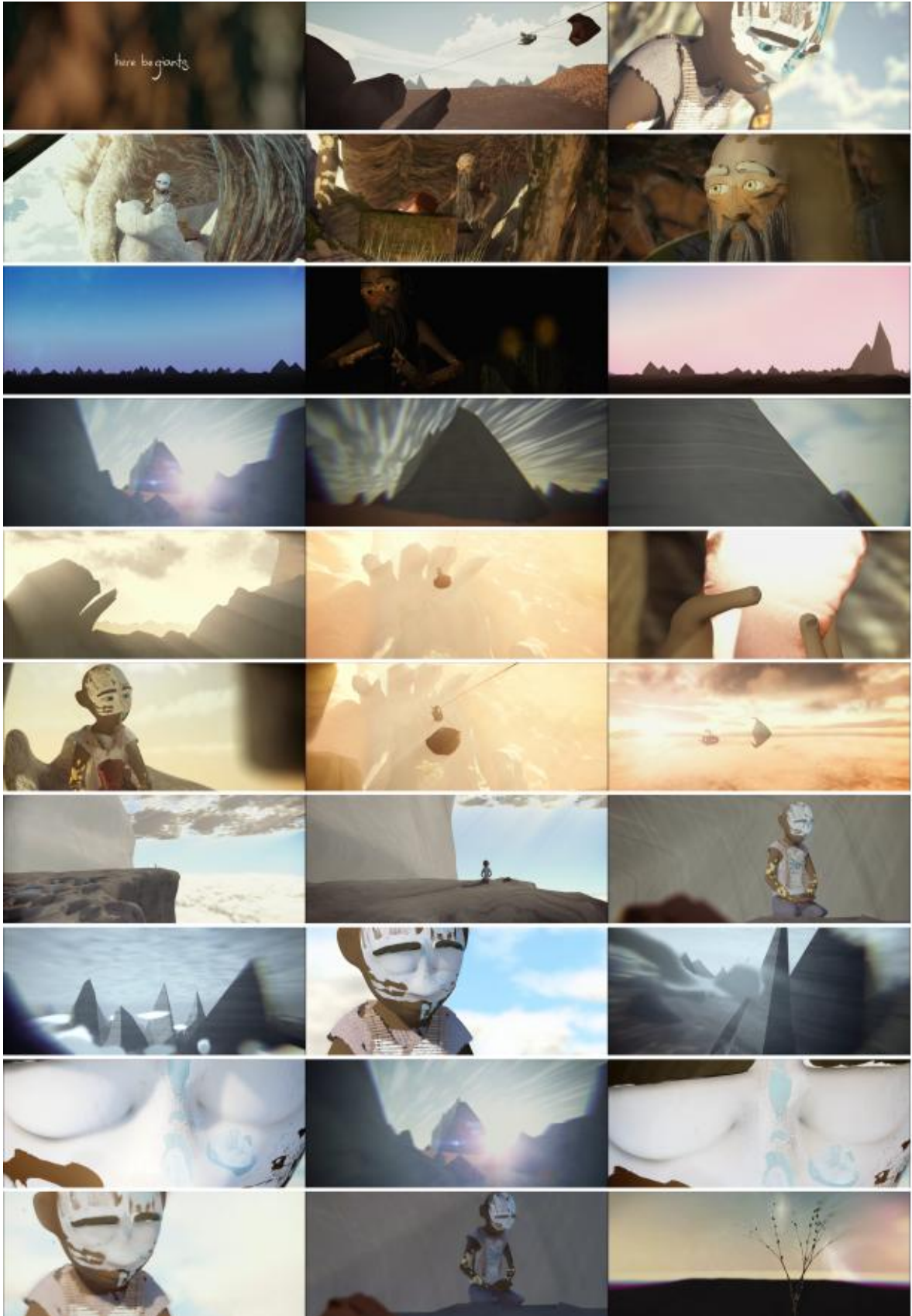


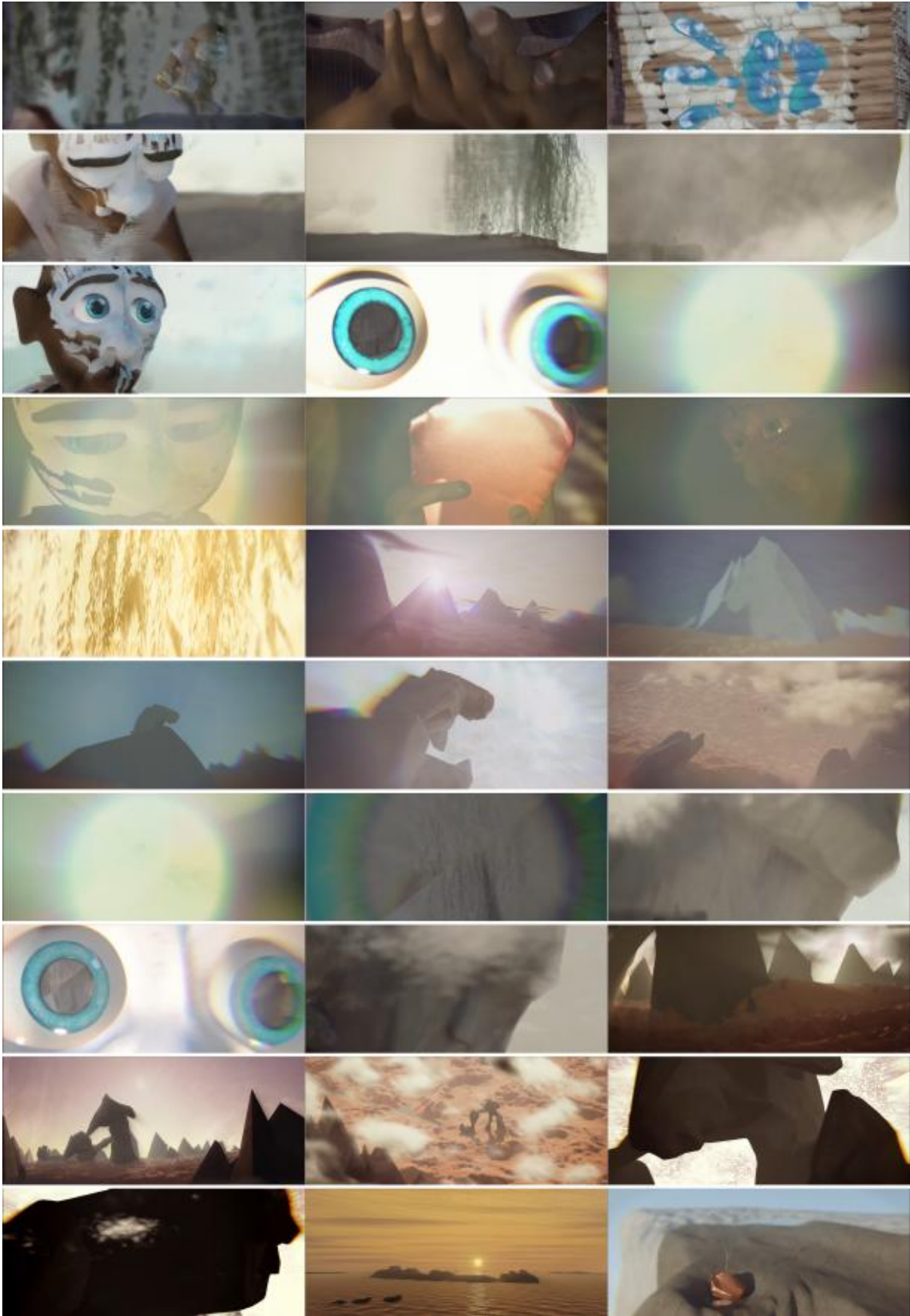
Story Sequence *Hic Sunt Gigantes*





Story Sequence *Here Be Giants*





Appendix E: *Here Be Giants* – Dialogue Transcripts and Translations

Here Be Giants - Dialogue (English)

My grandfather was a great man. Is a great man. Not great in terms of fame or notoriety but great to those he met. Those he loved and cared for. And to this day he is the most genuine man I have ever known.

I remember him telling me, "Dayu there are things in this world that are much bigger than us to remind us that we are small. And, there are things in this world much smaller than us to let us know that we are not insignificant." He had a belief in something greater.

He would travel up to the high cliffs to meditate. To understand. One night he returned, and I could sense something different about him.

He told me that the mountains had spoken to him, he learned their history. He told me he had seen them move and that he joined them. He said to me, "If only you could see them Dayu!

Born when two mountains collide they sleep for ages in their rocky cocoon. When they emerge they move like glaciers carving the rock.

The great sculptors, the architects of our landscape. If they are lucky they find a way to their kin. If not, they erode and are lost from memory.

Yes! They are vulnerable Dayu. This was long before we were ever here.

After that he let me come with him to the high cliffs. He would go off alone and I would sit in the gondola for days at a time, awaiting his return. I remember how small he looked as he walked away.

When he came back he would tell me wondrous tales about *gigantes*.

He gave me a stone that he said was a *gigante*'s heart, compressed by the weight of eons. He trusted me to keep it safe.

Eventually he was abandoned by the rest of our family. Father and mother said he was failing in his old age. I waited for him, but he never came back. I decided to follow him.

One brilliant morning on a trip upward I asked him, "What happens after we're gone Ta'mkhulu (Grandfather)?" He said, "I don't know Dayu, how could I know? I'm just a man. What do you think?"

I had no answer.

He told me not to worry. That I would grow up to be a great man. Greater than he could ever be.

I would witness wonders and gain wisdom that he could not even fathom.

He told me he was proud to call me his grandson.

Here Be Giants - Dialogue (Italian)

Mio nonno era un grande uomo. È un grande uomo.

Non per la sua fama, ma per chi lo ha incontrato, per quelli che ha amato.
Ad oggi, è la persona più vera che io conosca.

Mi diceva: “Dayu, al mondo ci sono cose molto più grandi di noi...per ricordarci che siamo piccoli...”

“ci sono cose più piccole di noi per farci capire... che non siamo insignificanti”.

Credeva in qualcosa di superiore.

Saliva sulle vette più alte per meditare. Per conoscere.

Una notte, quando tornò qualcosa in lui era cambiato.

Mi disse che le montagne gli avevano parlato. Aveva conosciuto la loro storia.
Mi disse che le aveva viste mutare e che si era unito a loro.

Mi disse: “Se solo tu potessi vederle Daiyu. Nascono dallo scontro fra due montagne, restano per secoli così...”

Quando riemergono, si muovono come lingue di ghiaccio e scavano la roccia.
I grandi scultori, gli architetti del nostro paesaggio. Se hanno fortuna trovano le loro compagne.

Altrimenti vengono erose e se ne perde la memoria. Sì! Sono vulnerabili, Dayu.
Questo da tempo immemore, da prima che noi fossimo qui”.

In seguito, mi lasciò accompagnarlo verso le vette più alte.

Poi saliva da solo. Io restavo nella cesta, Per giorni attendevo il suo ritorno.

Ricordo la sua minuscola figura, mentre saliva solo.

Al suo ritorno, mi raccontava storie magnifiche su quei giganti di roccia.

Mi consegnò una pietra. Disse che era il cuore di una di loro...compreso dal peso dell'eternità. Sapeva che l'avrei custodito con cura.

Alla fine, l'intera famiglia lo abbandonò. Mia madre e mio padre dissero che con la vecchiaia aveva perso la testa.

L'ho aspettato, ma non ha mai fatto ritorno.

Decisi di seguirlo.

In un mattino raggiante, mentre salivamo gli chiesi: “Nonno, che succede dopo la morte nonno?”

Mi rispose: “Non so, Dayu. Come potrei? Sono un semplice uomo. Tu che ne pensi?”

Non avevo una risposta.

Mi disse di non preoccuparmi, ... che sarei diventato un grande uomo, più grande di quanto lui potesse mai divenire.

Mi disse che avrei conosciuto meraviglie, acquisito una saggezza... che lui non poteva neppure immaginare.

Mi disse che era orgoglioso di aver un nipote come me.

Translation by: Mario De Grandis

Here Be Giants - Dialogue (Mandarin Chinese)

我的祖父一直都是一个很了不起的人。

这并不是因为他名满四方，而是对他遇见的和在乎的人而已。

直到现在我一直觉得他是我见过最真实的人。

我仍然清晰地记得他对我说过：

“大愚，在这个世界上，有许多东西都比我们宏大，这就时刻提醒着我们是如此的轻微。

但是，这个世界上也有好多的东西比我们更加渺小，所以我们也没有必要妄自菲薄。”

祖父有着伟大的信念。

他时常会在高高的山崖之上冥想修心去感悟深奥哲理。

有一天他从山上回来，我能感觉到他和平时有些不同。

他告诉我，高山和他对话了，告诉他关于山的历史。

祖父说他看到那些山的运动，他也加入了其中。

“除非你看见他们，大愚。在两座山合拢前他们都沉睡在石茧子里，一睡就是千万年。

当他们破茧而出时就像是冰川凿开了巨大的岩石一般。

他们就是这个世界最伟大的雕塑家，建筑师，塑造了万千的地貌。

如果运气好的话，他们最终能形成气势宏大的绵延群山。

如果运气差点的话，他们将溶蚀无影无踪。在这一点上，大愚，雄伟的高山也是很脆弱当然，这一切都发生在远古的史前时代。

在那之后，他带我走上了高高的山崖。

每次他带我来到在山崖之上，他会独自离开。

而我都在缆车里待上好几天，等他回来。

我还清晰记得他离开时越来越小远去的背影。

我想，等他回来，他就会告诉我那些关于巨人们的不可思议的传说。

他给过我一枚石头，告诉我这是一个巨人的心，一颗被岁月研磨的心。

他相信我定能好好的保存它。

然而，祖父最后被我们整个部族抛弃了。

父母说祖父是年事已高而糊涂了。

祖父离开后，我一直等着他，但是他始终没有再回来。

于是我决定要追随他。

一个明媚的早晨，在他上山前我问他：

“唐克库鲁（爷爷），人死了会发生什么呢？”

他说：“不知道，大愚 我只是个普通人。你觉得人死后会发生什么呢？”

我也无言以对。

他告诉我无需忧虑。

因为我会成长为一个伟大的人，一个比他更伟大的人。

他相信我将会看到奇迹，并从中得到启示而获得智慧，这一切都是他无法企及的。

他告诉我：他会因有我这样孙子而感到无比自豪。

Translation by: Haiyan Fu, Binjie Xu and Cheng Zhang

Here Be Giants - Dialogue (Spanish)

Mi abuelo fue un gran hombre. Es un gran hombre.

No grande en terminos de fama o notoriedad, sino grande a los que encontraba. A los que amaba y cuidaba.

Hasta la fecha es el hombre mas genuine que he conocido.

Me acuerdo que el me decía, “Dayu, hay cosas en el mundo que son mucho mas grandes que nosotros para recordarnos que somos pequeños.

Y hay cosas en el mundo que son mas chicas que nosotros para recordarnos que no somos insignificantes.”

Él creía en algo mayor.

Él viajaba hasta los acantilados altos para meditar. Para entender.

Una noche al regresar, le noté algo diferente.

Me dijo que las montañas le habian hablado, y aprendió su historia.

Me contó que las habia visto mover y se unió con ellas.

Me dijo, “Si tan sólo las pudieras ver, Dayu. Nacen cuando chocan dos montañas y duermen por siglos en su capullo rocosa.

Cuando emergen se mueven como los glaciares tallando la roca.

Los gran escultores, los arquitectos de nuestro paisaje

Si tienen suerte, encuentran la manera a su gente. Si no, se deshacen y se pierden de la memoria.

¡Son vulnerables Dayu! Esto fue mucho antes de que llegáramos.

Despues de ese dia me dejo acompañarlo a los acantilados.

Se iba solo y yo me sentaba en la góndola por dias enteros, esperando su regreso.

Recuerdo lo pequeño que se veia al alejarse.

Cuando regresaba me contaba historias maravillosas de gigantes.

Me dio una piedra que dijo que era el corazon de un gigante, comprimido del peso de eones.

Él confiaba en mi para mantenerla segura.

Eventualmente fue abandonado por el resto de nuestra familia.

Papá y Mamá decían que estaba fallando en su vejez.

Lo esperé, pero nunca regreso. Decidí seguirlo.

Una mañana brillante subiendo la colina le pregunte, “¿Qué pasa cuando ya no estamos Ta'mkhulu (Abuelo)?”

Me dijo, “No lo sé, Dayu. ¿Como lo pudiera saber? ¿Tu que piensas?”

Yo no tenía respuesta.

Me dijo que no me preocupara.

Que iba a crecer a ser un gran hombre. Mayor de lo que el jamás podría ser.

Que yo iba a presenciar maravillas y ganar sabiduría que ni siquiera él podía imaginar.

Me dijo que estaba orgulloso de llamarme su nieto.

Translation By: Miguel Jimenez

Here Be Giants - Dialogue (Russian)

Мой дед был великий/колоссальный человек.

Был и есть.

Не в смысле славы и знаменитости...

великий в глазах тех кто его знал, о ком он заботился и кого любил...

и по сей день - это самый Настоящий из всех знакомых мне людей.

здесь обитают гиганты.

Я помню, он мне говорил: "Дэю, есть в этой жизни вещи намного больше нас. Они напоминают, как мы малы.

И есть вещи меньше нас, которые напоминают о нашей значимости...

Он верил во что-то Большее.

Он забирался на высокие скалы и медитировать у обрыва. Он стремился понять...

Однажды вечером он вернулся, и я почувствовал, что что-то в нём изменилось.

Он сказал, что горы заговорили с ним, что он узнал их историю.

Он рассказывал, как наблюдал их движение и как объединился с ними.

Он говорил мне: "Если бы ты только мог видеть, Дэю, как они рождаются, когда сталкиваются две горы. Они спят веками в каменном коконе.

Восстав из него, они движутся, как ледники, прорезая камень.

Великие архитекторы,

скульпторы нашей земли.

Если им повезет, они найдут дорогу к своим. Если нет, они погибнут от эрозии, которая навеки сотрет их из памяти.

Да! Они - хрупки, Дэю!

Давно это было... задолго до нас.

После этого он брал меня с собой, к обрывам.

Он уходил один, а я сидел в гондоле, иногда по нескольку дней, ожидая его возвращения.

Я помню, каким маленьким он казался, удаляясь.

Вернувшись, он рассказывал удивительные истории о Гигантах.

Он передал мне камень, сердце Гиганта, сказал он, сжатый тяжестью тысячелетий.

Он доверил мне сохранить этот камень.

Со временем наша семья оставила его...

Отец и мать говорили, что он сдал от старости.

Я ждал его, но он так и не вернулся.

И я решил пойти по его следам.

Одним ослепительным утром, по дороге вверх, я спросил его: "Что станет, когда нас не будет, Дедушка?"

Он сказал: "Я не знаю, Дэю, откуда мне знать, я всего лишь человек. Ты сам-то как думаешь?"

Я не знал, что ответить.

Он велел мне не бояться,

сказал, что я вырасту великим человеком, лучше, чем он когда-либо мог быть.

Я засвидетельствую чудеса и обрету мудрость, о которой он не мог и представить.

Он сказал, что гордится своим внуком.

Translation by: Vita Berezina Blackburn

Appendix F: *Here Be Giants* - Official Website

At the time this document was completed any additional information regarding the film can be found on the Official Website at <http://herebegiantsfilm.com/>