Master of Art & Design - Digital Design

Thesis/Exegesis

Crazy Catch/Digital Game Demo -

A creative anime trailer and interactive game demo.

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This exegesis is submitted to the
Auckland University of Technology
for the degree of Master of Art & Design.

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Attestation of Authorship

'I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of a university or other institution of higher learning, except where due acknowledgement is made in the acknowledgements.'

Signature: JianKun Chen

Date: 10 February 2014

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Abstract

Crazy Catch is a proposed role-play multi-player game demo created in a new implementation platform that promotes an enhanced sense of gamer experience. My research will focus on exploring and developing new design, aesthetic and interactive principles. My proposed outcome is a game that is easy to control, one that enhances the emotional feeling of the game's interactive experience and through the development of a Kinect interface a game that is more engaging, intuitive and interesting for me as the user. This I envisage will enhance my experience of the game, its digital gaming future and its potential audience.

Research Question:

How do I develop my video game to a new level so that in playing it I feel more empowered as a female gamer?

I am proposing that my choice of design decisions and interactive design principles will mean that my game *Crazy Catch* becoming more appealing for me to play.

Introduction

My research explores and further develops my *Crazy Catch* game demo - a game that will promote a designed enjoyable and exciting experience for me as a gamer by integrating human-game interface technologies with *digital aesthetics* that enhance the gamer's experience. My goal is to create exciting and enjoyable gameplay. The game's cartoon style design features come from a 2D Japanese manga matrix mixed with 3D Disney, DreamWorks and Pixar Animation Studios type animations. My game environment background design remains 17th century European Gothic and includes elements of Steampunk. I have furthered the design of the characters and environments of ALIEN REMO and DR BRUCE and WITCH LOLA, expanded the role of the WITCH LOLA character so that she has more power and agency and introduced the new soldier character CAPTAIN KEN (WOLF). The gameplay and game plan incorporates an eight-shaped, spiral design with a serpent maze in a mirrored environment and a new male character. Players confront not only a long and winding race track that includes risk factors and dangerous obstacles, but they also confront other players, potentially crafty opponents who will make winning more difficult. The game contains many new challenges and I am in the process of changing the method of game control. Through a mechanism of competitive and creative fun I am building a game in which player participation and performance is enjoyable even though winning might be challenging and players will need to develop good driving skills. Players will collide with each other in a fierce competition of family and friends.

I have labeled my methodology "Anti-logical", i.e. beyond binaries and structural stereotypes. I have looked first and fore mostly at the *Emotional* elements, the digital aesthetics that can influence the game and design experiences. My research into how I wish to lead the gamers' emotional experience will be supported through a critical study of the design text *Emotional Design* by Donald A. Norman (2004)[1]. This is supported by my research into the design of games for female a player which has been informed through the critical study of the design texts *Gender Inclusive Game Design* by Shei Graner Ray (2004) [2] and *Design Research: Methods and Perspectives* edited by Brenda

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[1] Donald A, Norman. "*Emotional design* Part II: Design In practice; Three level of design: Visceral, Behavioral, and Reflective." (New York: Basic Books, 2004). 21

[2] Graner Ray, Shei. *Gender Inclusive Game Design: Expanding the Market.* (Charles River Media Inc., 2004)

Laurel. (2003)[3] Further in a discussion on interface inter-disciplines Brenda Laurel states that "direct manipulation and direct engagement are head and tail of the same coin"[4]. Direct manipulation, Laurel states, focuses on qualities of action and direct engagement on qualities of subjective response. In my development of a "cute" aesthetic as the major design feature of both my animation and my game I am addressing the nature of an emotional response that will appeal to female players. Inclusive to my development of this "cute" aesthetic is my understanding of its possible extension to include endearing although possibly grotesque transformations. My study of game aesthetics in relation to the attraction of games for female players has led me to a new text on aesthetic theory; *Our Aesthetic Categories* by Sianne Ngai (2012)[5]. Subtitled *Zany, Cute, Interesting* my specific interest in Ngai is in her exploration of the "cute" aesthetic, an aesthetic that fits very well with my aim of creating a game experience that is exciting and enjoyable for female players. Ngai's text led me to Kanako Shiokawa's essay *Cute But Deadly: Women and Violence in Japanese Comics*[6] and to the Lori Merish essay *Cuteness and Commodity Aesthetics: Tom Thumb and Shirley Temple.*[7]

In my character construction I have also used a *"Moe"*[8] type of design. My motivation to design my new male character, CAPTAIN KEN, who is very handsome, came after I watched the film by director Mika Ninagawa's "Helter Skelter (*Herutā Sukerutā*)" (2012)[9] which is based on a popular manga written by Kyoko Okazak.

Through game testing I have advanced my learning of the 'visceral, behavioral, and reflective[10] behaviors of gamers during their play of the game. My research has explored and further developed my game by using game art and design technology that along with innovative human-centered multi-sensorial virtual prototyping will use a new approach to multi-sensorial simulation via Kinect technologies.

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[3] Brenda Laurel. *Design Research: Methods and Perspectives.*(The MIT Press MA .2003).
[4] Brenda Laurel. *Computers as Theatre* (Addison Wesley Publishing New York: Company Inc. 1993). 8.
[5] Ngai Sianne. *Our Aesthetic Catagories: Zany, Cute, Interesting*. (Cambridge, MA. Harvard University Press, 2012).
[6] *Cute But Deadly: Women and Violence in Japanese Comics* from Link, J.A. (Ed) *Themes and Issues in Asian Cartooning: Cute, Cheap, Mad, and Sex*
[7] Merish, L. *Cuteness and Commodity Aesthetics: Tom Thumb and Shirley Temple* from Thomson, R. G., (Ed) *Freakery: Cultural Spectacles of the Extraordinary Body*
[8] A style of character in manga and video games
[9] Mika Ninagawa. *"Helter Skelter (Herutā Sukerutā)"*. (Japan, Japanese. July 14, 2012).
[10] Donald A, Norman. *Emotional design* Part II: Design In practice; Three level of design: Visceral, Behavioral, and Reflective. (New York: Basic Books, 2004).

My research methodology will be one of action research as described in *Action Research* by Jean McNiff and Jack Whitehead (2002)[11]. My study of selected texts in *Rules of Play* by Katie Salen and Enid Zimmerman (2004)[12] has guided my research of the guidelines to game playing and furthered my knowledge of the reflective, behavioral and cognitive player experience and design.

There are five components in my *Crazy Catch* project in 2014;

1) Developing and researching major game development processes; motion capture and intuitive Kinect technologies, with a focus on developing a game that is enjoyable for gamers and contributes to the social development of gender equality in gaming.

2) Developing a theoretical background on emotional design and especially the "cute" aesthetic[13], and interactive user experience in gaming.

3) Introducing action research methodology to determine how I test the effects of this emotional and "cute" aesthetic connection on the actions and environment of the game assist me in building my new game design.

4) Expanding the power and agency of the character LOLA THE WITCH by utilizing the "cute" aesthetic in order to increase her appeal.

5) Creating a new character, CAPTAIN KEN (WOLF), and a new story narrative to connect with the original game. As with the development of LOLA THE WITCH my design decisions as they pertain to this new character is to make the game more appealing through the use of the "cute" aesthetic.

CAPTAIN KEN who transforms into a werewolf portrays an extension of the "cute" through a transition from the endearing into the grotesque. Japanese artist Chicho Aoshima commenting on the zombies and ghosts in her art talks about how the "body has become the field of a grotesque transformation, beyond control".[14] Our emotional response is dependent on our reaction to the aesthetic.

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[11] Jean McNiff , Jack Whitehead. *Action Research: Principles and Practice*. (Routledge, 2002).
[12] Katie Salen, Enid Zimmerman. *Rules of play: Game design fundamentals*. (MIT press, 2004).
[13] Ngai Sianne. *Our Aesthetic Catagories: Zany, Cute, Interesting*. Cambridge, (MA. Harvard University Press, 2012).
[14] Ivan Vartanian. "*drop dead cute; the new generation of women artists in Japan* Chicho Aoshima". (Chronicle Books. 1997). 32.

Chapter one:
Critical Frameworks

By researching the theory of the *magic circle*, the space within which games take place as first described by Johan Huizinga in *Homo Ludens* (1955)[15] and the four major methods and perspectives; *People, Form, Process,* and *Action*, as described in *Design Research* [16] edited by Brenda Laurel, I will discuss the importance of research for a richly satisfying and successful digital art practice. From Donald A. Norman's (2004) *Emotion Design*[17] I look at the "visceral, behavioral, and reflective" in practice and in playing the game myself test techniques on the behaviours of gamers. Additional texts for my research include *Gender Inclusive Game Design* by Shei Graner Ray (2004)[18], *Gaming: Essays on Algorithmic Culture* by Alexander R. Galloway (2006)[19] and *Evaluating User Experience in Games* edited by Regina Bernhaupt (2010)[20]. These have combined to support my critical study and evaluation of design texts that look at the scope, depth, and diversity of user experience in gaming.

As artists we are inspired by different experiences. We all view things from different angles and depending on our understanding of our existence and being our aesthetic values are created. We need to understand and consider traditional values and aesthetics in order to formulate new values and develop new aesthetics. Traditional art aesthetics idealized perfected shape and lines and promoted an appreciation of correct angles and a sense of the beautiful. With the use of the computer new Digital Aesthetics are used to create new spatial environments and character and environment design. These new aesthetics are reflected in new digital media.

From traditional aesthetics I have researched the ways in which contemporary artists have used the work of painters from the 17th century to create aesthetic form and value from light and composition. This knowledge I have then used in the creation of my

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[15] Johan Huizinga. *Homo Ludens: a study of the play element in culture*. (Boston, The Beacon Press, 1955).

[16] Brenda Laurel. *Design Research: Methods and Perspectives.* MIT Press, 2003.

[17] Donald A. Norman. *Emotional design: Why we love (or hate) everyday things*. (New York: Basic Books, 2004). 21- 24.

[18] Shei Graner Ray. *Gender Inclusive Game Desig: Expanding the Market.* (Charles River Media Inc., 2004).

[19] Alexander R. Galloway. *Gaming: Essays on Algorithmic Culture*. (Universityof Minnesota Press, 2006).

[20] Regina Bernhaupt. ed. *Evaluating User Experience in Games: Concepts and Methods.* (London: Springer-Verla, 2010).

digital animations. For example Hendrik Kerstens's photographic series "Paula Pictures" (1995) emulates Johannes Vermeer's (1632-1675) paintings, especially "Girl with a Pearl Earring". Kerstens's photographic works explore similarly characteristics of "Dutch", light and like the paintings of Vermeer the composition is very unique and strives to look directly into the soul of the character. Through the media of photography Kerstens transports the viewer back to the era of the classical portrait.

Kerstens rigorous composition, his unique processing of color and light and shadow, helps create his nuanced figures. Kerstens had his daughter dress up like Vermeer's heroine in *Girl with a Pearl Earring* recreating her expressive demeanour for a photoshoot. By this process the camera captures the metaphysical nostalgia represented in the original Vermeer painting. It is through this metaphysical nostalgia that Kerstens references the classic work of art. He also provides us with clues as to our understanding of the art work.

Figure: 5.

Figure: 1. Johannes Vermeer. (1665–67). *"Girl with a Pearl Earrin"*. (Network Image).
Figure: 2. Hendrik Kerstens. (2007). *"Bag"*. (Network Image).
Figure: 3. Hendrik Kerstens. (1996). *"Black Cap"*. (Network Image).
Figure: 4. JianKun Chen. (2012)*. "Witch Lola wall picture"*. (Screenshot)*.
Figure: 5. JianKun Chen. (2013). *"Witch Lola 3D character model"*. (Screenshot).

Using this design process I have placed a picture in the interior of my animation of my character LOLA THE WITCH imitating Kerstens daughter from his photographic series "Paula Pictures". This gives the appearance of a similar morphology, the use of different rendering technologies to create the same effect; that of the effect of a metaphysical nostalgia.

As in the viewing of a similar painting or a sculpture, or the reading of a poem that portrays the same aesthetic, the same sentiment, in seeing this artwork on the wall the viewer's perception is changed. Further to this I have researched and added new information about a new "cute" aesthetic as described by Sianne Ngai[21]. It is my opinion that the inclusion of this aesthetic as a design feature into my game will enhance its appeal. The transformation of Kirsten's photo, Fig. 3 above, to the picture of LOLA THE WITCH, Fig. 4 above, brings about this new "soft" aesthetic, one that emerges from "the sphere of mass culture as opposed to high art". This performative act enriches our awareness and understandings of aspects of real or imagined worlds an almost time travel like experience that brings a new aesthetic into a contemporary digital virtual art environment and highlights "the appeal of the powerless as opposed to power, that seems best suited for the analysis of art as it develops in dialectical relation to commodity culture".[22] A similar process can be used to express other aesthetics, other emotions and attitudes to life, either serious or trivial and create a new sensory experience. This informs the viewer's self-perception and imagination and assists in art appreciation and grows our sense of relevant aesthetics. Again in my opinion this inclusion of the specifics of an aesthetic of art into the interior worlds of gaming enhances the quality of the gaming experience and brings a new human aesthetic value and new sensory experience to the virtual game world.

Digital aesthetics are created using CG (Computer Graphics) technologies which assist in the design and creation, through a human interface, of visual imagery in simulated space which is then presented as 3D art (e.g. Fig 5); using digital art to perform the function of aesthetic production which for me has been the development of the "cute" aesthetic.[23] Described by Sianne Ngai as a "diminutive aesthetic, one that epitomizes the minor-ness of not just "minor aesthetic categories" but arguably all art in an age of high-tech simulacra and media spectacles."[24] Cuteness also "solicits a regard of the commodity as

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[21] Ngai Sianne. *Our Aesthetic Catagories: Zany, Cute, Interesting*. Cambridge, (MA. Harvard University Press, 2012).
[22] Ngai.
[23] Ngai.
[24] Ngai, 59.

an anthropomorphic being less powerful that the aesthetic subject, appealing specifically to us for protection and care"[25] – a very apt description of my character ALIEN REMO.

Figure: 6, JianKun Chen. (2013). *"Crazy Catch animation for* ALIEN REMO". (Screenshot).

"The cute commodity flatteringly wants us and only us as its mommy" but is also, "for all its pathos of powerlessness, is capable of (thus) making surprisingly powerful

[25] Ngai, 60.

demands". [26] It is very evident that this type of character is especially appealing to my target female gamer and audience. As Ngai notes "our desire for the cute commodity mirrors the desire it appears to have for us … conflating desire with identification" or as referenced by Merish "wanting to be or be like". This produces an experience of cuteness that aligns the effect of empathy with the feminine and narrows "the gap between consumer and commodity."[27] This also has particular resonance with digital gaming in general. Ngai's work and research has been an important discovery for me in that it identifies an aesthetic that has been and continues to be a feature of my artwork design process, a design principle that informs the action in and the experience of my game *Crazy Catch* influencing the game, its design and its appeal.

From Japanese print culture Manga in its 2D manifestation, contains many elements of this "cute" aesthetic and has developed into a global industry.

Figure: 7. (Ed). *"Cartoon style of the 1990's depicting selected images of the era. Photos selected "Hatsune" Role of Akiyama."[28]* (Network Image).

The influence of this aesthetic, has of course, also spread to the major global industry of digital gaming. In Japan, the cute aesthetic is known as *kawaii* and since the end of World War Two has had a major impact on its culture as a whole especially on the

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[26] Ngai, 64.

[27] Ngai, 67.

[28] (Ed). *Cartoon style of the 1990's depicting selected images of the era. Photos selected "Hatsune" Role of Akiyama,* gamersky.com, (June 2012): http://www.gamersky.com/showimage/id_gamersky_01.shtml?http://img1.gamersky.com/image2012/06/20120615p_6/gamersky_01origin_01.jpg. (accessed June 01, 2013).

design of toys where income from the "cute" gift industry measures in millions of dollars[29]. But it is not just in the design of toys that the influence of *kawaii* as an aesthetic can be found "industrial design, print culture, advertising, fashion, food and the automotive industry"[30] are all affected. The Japanese artist Takashi Murakami created a painting of the 'comic' like character *Mr DOB* which referenced cartoon characters Mickey Mouse, Sonic the Hedgehog and Hello Kitty in order "to investigate the secret of their market survivability"[31]. During the 1990's Murakami created many permutations of Mr DOB including those that changed from *kawaii* to *kowai* – from cute to scary. This according to Ngai calls attention to the violence always implicit in our relation to the cute object" suggesting "that it is possible for cute objects to be helpless and aggressive at the same time".[32] In his review of Ngai's *Our Aesthetic Categories* for the Slate Book Review Hua Hsu argues similarly that "our absorption with "cuteness" is born of both tenderness and aggression".[33]This for me is an important consideration, especially in my development of my new game character CAPTAIN KEN (WOLF) – an ex-army Captain who on the full moon turns into a werewolf. It has been noted that the development of the "cute" aesthetic as a dominant design feature captures not just young girls but while retaining its cuteness transforms into the "cool" for the older adolescent female and also into "camp" an aesthetic that appeals to women.[34]

Previously my *Crazy Catch* game was geared to shooting and racing game motivation factors which established a male perspective. In this first level of my *Crazy Catch* game the two main characters were DR BRUCE and ALIEN REMO to which I added the character LOLA THE WITCH in order to bring female players into the game. Initially inspired by a TED talk by Brenda Laurel who asked the question *"why hasn't anybody built any computer games for little girls?"* [35] and then in my research finding a paper called *A Game of One's Own*[36]. I have subsequently researched different types of game preferences in order to gain an understanding of factors that determine game

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[29] Leila Madge. Capitalizing on "Cuteness" The Aesthetics of Social Relations in a New Postwar Japanese Order. Scribd.com. http://www.scribd.com/doc/102090176/Capitalizing-on-Cuteness-Leila-Madge-JS9-Madge. 155. (accessed June 01, 2013).
[30] Ngai, 78.
[31] Ngai, 82.
[32] Ngai, 85.
[33] The Slate Review of Books November 30 2012.
[34] Brian J, McVeigh. *How Hello Kitty Commodifies the Cute, Cool and Camp: 'Consumutopia versus 'Contral' in Japan.* (The Journal of Material Culture 2000) 5:225.
[35] TED Blog. *Why didn't girls play videogames? Brenda Laurel on TED.com.* TED Conferences, LLC. (March 2, 2009): http://blog.ted.com/2009/03/02/why_didnt_girls/.(accessed March 01, 2012).
[36] Tracy Fullerton, Jacquelyn Ford Morie and Celia Pearce, "A Game of One's Own: Towards a New Gendered Poetics of Digital Space," lcc.gatech.edu, http://lcc.gatech.edu/~cpearce3/PearcePubs/LudicaDAC07.pdf (accessed March 01, 2012).

motivation, especially from the female gender point of view, to assist in the creation of an interactive game space. My new character; CAPTAIN KEN (and his transfiguration into WOLF) continues my upgrading of the appeal of the game. His androgynously pretty looks and his empathetic and nurturing character will bring that added appeal. CAPTAIN KEN (WOLF) as a male highlights and counterpoints the character LOLA THE WITCH who as a female in the game has both power and agency; a deliberate positioning to further engagement with and enjoyment of the game.

I label the gender difference in gaming as;

1) *Expansive/Offensive* type of gameplay, representing the male or masculine type and

2) *Inclusive/Nurturing* type of gameplay representing the female or feminine type.[37]

> *'The Expansive/Offensive types encourage players to highlight their own existence through the external form. They encourage characters to dominate, conquer, control, so as to gain superiority......*
> *The Inclusive/Nurturing types encourage players to maintain the existing status. They encourage characters to maintain control and to nurture attractive elements which are in fact neither better nor worse but a part of themselves.....'*[38] (Chen J. 2012).

In her research into gender differences in software design Sheri Graner Ray[39] discovered that boy's games mostly are goal oriented and girl's games are activity based; males seeing computers as a challenge to be mastered, measured against whereas the female attitude to computers is tactile, artistic, and communicative. It follows that in order to attract myself as a female gamer it is necessary that the game mechanic should be easy to learn and more intuitive, i.e. through the use of Kinect. Also the game should have appeal and an emotional tie-in for the female gamer, both in design (e.g. contain a "cute" aesthetic) and gameplay scenarios that provide both agency and power and feel good outcomes.

Although there are mainstream elements of conflict/fighting/killing (*Expansive/Offensive)* in my game *Crazy Catch,* the focus of the game anime and narrative has shifted to one of action that is more of a nurturing feminine style of gaming (*Inclusive/Nurturing)*. This is achieved through the character of LOLA THE WITCH, a character female gamers will emotionally connect to, especially her nurturing qualities. She is an intuitive and thinking character who has interesting magical and occult powers

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[37] Jiankun Chen. Crazy Catch: Customizing new narrative and gameplay. (Auckland: AUT, 2012).
[38] Sheri, 20.
[39] Sheri, 6-12.

and creates healing substances, magical potions, in her own magic circle located in her cabin in the heart of a magical forest.

Figure: 8. JianKun Chen. (2013). *"WITCH LOLA inside her house"*. (Screenshot).

Figure: 9. JianKun Chen. (2013). *"WITCH LOLA making her magical potion"*. (Screenshot).

Figure: 10. JianKun Chen. (2013). *"WITCH LOLA using her magical powers in the forest"*. (Screenshot).

Figure: 11. JianKun Chen. (2013). *"WITCH LOLA hugs on ALIEN REMO and then gets angry"*. (Screenshot).

Figure: 12. JianKun Chen. (2013). *"WITCH LOLA strongly running and jumping"*. (Screenshot).

There are also nurturing elements in the interplay of all the other characters with the new character CAPTAIN KEN (WOLF) and although his initial introduction in the animation features conflict this is tempered with fleeting images of nurturing and care. The gameplay features both elements of direct challenge and conflict along with more collaborative style activities.

Figure: 13. JianKun Chen. (2013). *"CAPTAIN KEN's family photo hiding a photo of WITCH LOLA"*. (Screenshot).

Figure: 14. JianKun Chen. (2013)*. "CAPTAIN KEN* hugs on *ALIEN REMO"*. (Screenshot).

CAPTAIN KEN (WOLF), who has an androgynously handsome but pretty face and a kind heart turns into a WOLF over the full moon. CAPTAIN KEN remembers his family – old father, younger sister – a family group portrayed in a photo in the animation along with a partially hidden photo of LOLA THE WITCH – a clue that he is looking for her, that he is on a quest to find his magical friend LOLA THE WITCH so that she can cure him of his affliction; turning into a were wolf on the full moon. CAPTAIN KEN's transformation into a werewolf highlights the fact that biology and nature can change and control the human – and has links for me to the artwork of Chicho Aoshima.[40]

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[40] Vartanian.

Figure: 15. Chicho Aoshima. (1974). "*Zombies in the Graveyard, 2001*".[41] (Photograph).

In the past CAPTAIN KEN has been in the army and is a saviour of people He too has a nurturing quality and empathizes with Lola. As with the wolf in Red Riding Hood (2011), as portrayed in the recent scary movie[42] he loves his friend LOLA and does not intend to harm her. WOLF wants to capture LOLA so that he can get some of her medicine, the magic potion that will enable him to become CAPTAIN KEN again. The imagery and emotions/moods that these gameplays highlight is captured in the design and colour of the characters, in their costumes and the environments within which they sit.

In my game *Crazy Catch* gender specific emotional elements lead the gamers' emotional experience. In his book *Emotional Design* Donald A. Norman describes three levels of design:

1. The visceral – the automatic, the prewired, the primitive animalistic level, tension or relaxation, "is what nature does".[43]
2. The behavioural – that which controls everyday behaviour, at the subconscious level, learned routine operations, "where the skilled performer excels".[44]

[41] Vartanian,32

[42] Red Riding Hood 2011, common sense media (January 3, 2011): http://www.commonsensemedia.org/movie-reviews/red-riding-hood-0. (accessed June 01, 2013).

[43] Norman, 65.

[44] Norman, 23

3. The reflective – the contemplative part, the level of the human brain.

FIGURE 1.1
Three levels of processing: Visceral, Behavioral, and Reflective.
The visceral level is fast: it makes rapid judgments of what is good or bad, safe or dangerous, and sends appropriate signals to the muscles (the motor system) and alerts the rest of the brain. This is the start of affective processing. These are biologically determined and can be inhibited or enhanced through control signals from above. The behavioral level is the site of most human behavior. Its actions can be enhanced or inhibited by the reflective layer and, in turn, it can enhance or inhibit the visceral layer. The highest layer is that of reflective thought. Note that it does not have direct access either to sensory input or to the control of behavior. Instead it watches over, reflects upon, and tries to bias the behavioral level.
(Modified from a figure by Daniel Russell for Norman, Ortony, & Russell, 2003.)

Figure: 16. Donald A. Norman. (2004). "diagram from Norman *Emotional Design*"[45]. (Photograph).
Each level, Norman states, requires a different style of design[46].

In gaming these three levels can be incorporated into the design of the operating hardware, the interface and the content of the game itself; the design of the narrative, the design of the environment, the landscape and the objects within it, the gameplay and the design of the characters; human, animal or anthropomorphic. The visceral level will be engaged when the gamer is controlling, or attempting to control a very fast or out of control car or motorbike. The behavioural level is felt when the gamer successfully completes a mission or a task within the game. The reflective level is engaged when the gamer reflects on how important tasks might be achieved. Of course as Norman says the "three levels interact with one another"[47]. For example when a gamer has reflected on a task and completed it successfully both the reflective and the behavioural levels are activated, or when a gamer manages to control an out of control car and feels good about succeeding the visceral and the behavioural levels are activated and if the gamer contemplates on that success, the reflective level is also activated.

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[45] Norman, 22.
[46] Norman, 21.
[47] Norman, 25.

As part of this process activity begun at the visceral level is called "bottom-up", activity begun at the reflective level is called "top-down". Bottom up processes are driven by perception followed by an action, an affective process. Top down processes by are driven by thought, a cognitive process. The cognitive assigns meaning, the affective assigns value. Both can change the way the gamer thinks and processes information and subsequently how she reacts to different situations and plays within the game. Negative affect implies the need for concentration to overcome danger, to stay in control of an operation, the fast, out of control car (*the expansive/offensive)*. Positive affect means less concentration on one task and the ability to take up many opportunities, being curious and creative (*the inclusive/nurturing*). The task is for designers to be able to work with both; and design objects or processes that utilize and inspire both creative thinking and focus. This can best be achieved through by making specific aesthetic design decisions.

Our aesthetic tastes are sourced at the visceral level and are "consistent across people and cultures".[48] As a general levelling of the status that we give to our understanding of aesthetics in contemporary art and life the "cute" as an aesthetic has recently been promoted by Sianne Ngai[49] as one of three new aesthetics worthy of inclusion in the contemporary art canon, the others being "the zany" and "the interesting". Although not deemed worthy for designers by Norman, the cute, the pretty and elements inspiring fun are major parts of a cultural shift towards a more inclusive sense of the creativity in design and art just as good behavioural design must be human-centered, "focusing upon understanding and satisfying the needs of the people who actually use the product".[50] The reflective level of design, Norman states, is often about image and how things are perceived, "it is all about message, about culture and the meaning of a product"[51], the impression that you get from a product, its long term enjoyment, "a warm interaction"[52] – design with fun and pleasure in mind. In the design of my *Crazy Catch* game demo I have been guided by my research into the "cute" aesthetic and its appeal.

A Wake Forest University study; "Rating Attractiveness: Consensus Among Men, Not Women, Study Finds" [53] by psychologist Dustin Wood, co-authored by Claudia Brumbaugh of Queens College, in the June 2009 issue of the Journal of Personality and

[48] Norman, 67.
[49] Ngai.
[50] Norman, 81.
[51] Norman, 83.
[52] Norman.
[53] Wake Forest University. "Rating Attractiveness: Consensus Among Men, Not Women, Study Finds." ScienceDaily. www.sciencedaily.com/releases/2009/06/090626153511.htm (accessed April 16, 2014).

Social Psychology in which psychological experts tested photos of 4000 multiplayer pairs of young men and women found that, in a 1 ~ 10 point's score scale, the results were highly consistent in males' evaluation of females, rating beauty as attractive, but women's evaluation of males were more diversified, with some women even giving men with ugly looks a high score. This is because, for females, the most important factor is not necessarily appearance.

The study at Durham University entitled "Attitudes Towards Sexual Relationships Can Be Judged From Photos Of Your Face"[54], showed that what women really care about is social status and the economic resources of men. This means that in their evaluation of men appearance blended with other considerations, thus forming a subjective assessment of each unique person. In contrast, a woman's appearance is crucial for men's choice, and in their making of, so-called objective views, personality, status and other subjective factors will not feature.

The statement that "Good-looking people tend to make more money than their plain-Jane counterparts"[55]; from a study by the Federal Reserve Bank in the USA, suggests another reason why women quite differently vary in their evaluation of men; their "social status" is widely defined, and sometimes has nothing to do with income. I think some women might particularly appreciate disheveled guitarists, others prefer smart suited business men.

Lee Elliott's study "The science of sex appeal, A range of studies brings us closer to finally understanding the mysteries of sexual attraction"[56] also shows the existence of a delicate relationship between the health of the country and women's preference in men. National health levels can affect a woman's determination of a man's sex appeal. When high levels of health in the population are evident women tend to countenance feminine men, and when low levels of health in the population are evident women tend to choose men with more masculine characteristics.

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[54] Durham University. "Attitudes Towards Sexual Relationships Can Be Judged From Photos Of Your Face." ScienceDaily. www.sciencedaily.com/releases/2008/04/080408202048.htm (accessed April 16, 2014).
[55] Federal Reserve Bank. "Good-looking people tend to make more money than their plain-Jane counterparts". CNN Money. http://money.cnn.com/2005/04/08/news/funny/beautiful_money/#TOP (accessed April 16, 2014).
[56] Lee Elliott. "The science of sex appeal, A range of studies brings us closer to finally understanding the mysteries of sexual attraction" Theguardian.com http://www.theguardian.com/education/2001/jan/15/highereducation (accessed April 16, 2014).

Dan Eden's brief list; "Attractiveness a summary of facts"[57] showed that men attraction to women depends on their needs and that in short-term relationships women prefer handsome men and if not handsome a rich man is a poor choice. If a woman is looking for a long-term relationship attractiveness and well-developed physical body is not as important as the willingness and ability to produce and nurture a new generation. In my opinion when life is unstable, your first choice of partner is often not the one you will remain with.

I have used this psychological analysis and as a factor of consideration into the design elements and applied them to my character design. CAPTAIN KEN has a handsome appearance; and a background as a wealthy respectable officer. When he turns into WOLF, very physically fit and very powerful but also having the more prominent "cute" aesthetic, he creates a unique affinity with the player who chooses "charm" as an attraction element. And with the game story plot development, also highlighting this characteristic, I think makes the game more appealing.

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[57] Dan Eden. "What Exactly Is "Beauty"?" viewzone.com. http://www.viewzone.com/whatisbeauty.html (accessed April 16, 2014).

Chapter Two:
Methodology
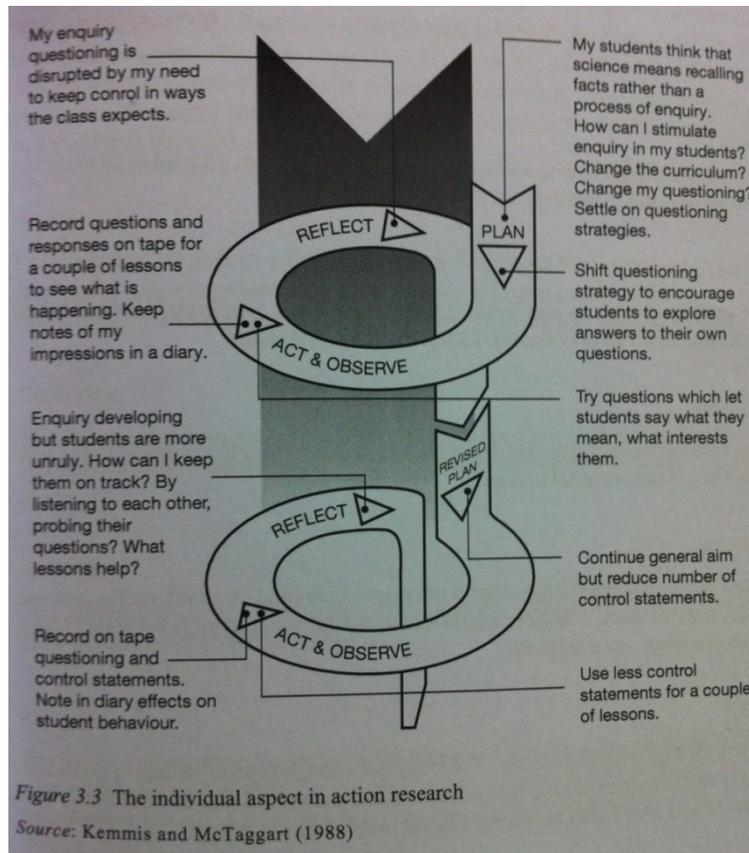
Figure: 17. Jean McNiff and Jack Whitehead. (2002). *"The individual aspect in action research from:"*[58] (Photograph).

My methodology is guided by my study of the text *Action Research* by Jean McNiff and Jack Whitehead [59] in which the authors state that their method "has significant potential for human betterment. While the term 'action research' might be superseded or embedded within newer forms of research, what it stands for is durable".[60] In using this theory that "studying our practice and its underpinning assumptions enables us to develop a creative understanding of ourselves and our own processes of learning and growth … when we do action research we make our thinking different"[61] has allowed me to satisfactorily develop and understand the focus of my study to develop my game.

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[58] Jean McNiff, Jack Whitehead. *Action Research: Principles and Practice*. (Routledge, 2002). P45.
[59] Jean, Jack.
[60] Jean, Jack. 59.
[61] Jean, Jack.

The main points of the action research process are to plan, to act and observe, to reflect and then revise the plan. This process continues until a resolution is come to and a process and end result chosen. My continued research into and knowledge of animation and game design developments has led to the further evolution of my art practice. The process of my game development required further understanding of the aesthetics and other elements that I needed to bring to my animation design at its various levels that would enable my aim to be achieved. This I did by absorbing and bringing my life experiences generally and of game playing specifically to assist in refining my design practice processes. By planning, acting and then observing, reflecting then revising I was able to build up my knowledge and through acquired innovation to rebuild my animation and game.

It is my personal preference is to play puzzle category games. One such game is *Fable II.*
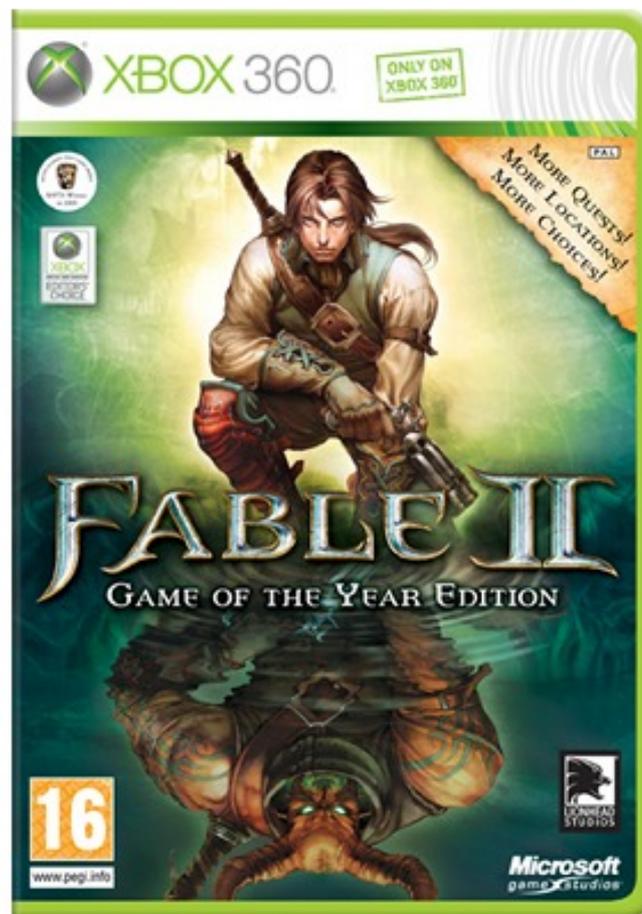
Figure: 18. Richard Mitchell. *"Fable II game of the year edition for XBOX 360"*[62] . (Network Image).

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[62] Richard Mitchell. *"Fable II game of the year edition for XBOX 360"* joystiq.com.
http://www.joystiq.com/2009/08/28/fable-2-game-of-the-year-edition-confirmed/. (accessed June 01, 2013).

Playing this game with a male friend we became aware that there was a difference in the 2D imagery used in the marketing of the game and the actual quality of the pixel images presented on screen. This meant that we both did not want to play the game because of its aesthetic quality, a reaction common to both of us - a visceral response. Generally, in playing digital games I noticed that males and females have different behavioural styles of playing. This is also the premise of S.G. Ray in her text *Gender Inclusive* Design. My male friend was better able to operate the buttons on the controller, which because my fingers were not as flexible I found difficult to use and I was afraid of making mistakes. Hence because of my perception that current hand-held operating systems are too mechanized, too difficult, and often geared towards young males,[63] I experience some resistance to playing digital games. Also when it comes to reflecting on the instructions within a game on the operation page my male friend does not take that much notice. This meant that when he was required to operate certain keys to progress he did not understand the process required. Unlike my friend I took note of the details on the operation page and the information presented in profiles, pictures and clues following the story line. My friend, as a male, is more interested in the actual actions in the game and not so much on the information provided. This is because the main focus on gaming has been towards the ability to be fast in making actions on the controller. This means that the skills and knowledge able to be learnt inside the game, their nurturing aspects are mostly lost on males. Norman has stated that design at all levels of interaction, visceral, behavioural and reflective, "should reflect a warmer, more feminine approach.[64] From a behavioural point of view I agree with Norman when he states that rather than making a game that has "powerful graphics and fast reflexes" [65] it is important that in designing a game we need to provide "rich, detailed graphics and informative structures"[66] enabling the gamer to master content rather than mastering the device. We need to create games in which emotions and knowledge are highlighted. Although my game has a focus on racing and shooting how instincts, the needs and wants of the player, are activated in a game is of great interest to me. This in Norman's terms relates to "what is truly necessary" versus "what the player asks for".[67] Wants can be more powerful than needs. If gamers are not playing my game I need to understand why. In order to make a reflective game it needs to contain elements of learning and knowledge, be interesting as well as action oriented.

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[63] Norman, 43.
[64] Norman, 44.
[65] Norman.
[66] Norman.
[67] Norman, 42.

It is my experience that games that are solely keyboard and mouse oriented like *World of Warcraft* that can take up to 10 hours per mission to complete become more like work than entertainment. Not only does this mean that the interface becomes not available to others during the game but also emotionally the repeated keyboard sounds and soundtrack become disconcerting. Coupled with this the multi button interface is complex and difficult and not easy to use for groups of players.

This has occasioned my interest and research into an interface that is easier to use and suitable for groups and families hence more social and preferred by female players. I have chosen to develop the Kinect control system in which the whole body is used as the operating mechanism. Again with a design that Norman has stated is "appropriate to the audience, the location, and the purpose."[68] As well as discovering a different style of image presentation, the "cute" aesthetic, I have also conducted research into data storage space and screen pixilation. Without sufficient data storage space and interface capability it is not possible to supply enough information to make the game sufficiently easy to play. These elements have a major influence on the cognitive and emotional response of the game player.

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[68] Norman, 45.

Anime and Game design

My design has also been guided by an acknowledgement that in the virtual animation design it is possible to include figures whose proportions lack of symmetry, perfect symmetry, and ratios and perspectives are not normal. In his portrait 'La Grande Odalisque'[69] by Ingres the proportions are not right but through the action of lens panning the virtual presence of beauty is perceived and becomes transcendent.

Figure: 19. Jean Auguste Dominique Ingres (1814). *"La Grande Odalisque".* (Network Image).

Similarly with my use of a "cute" aesthetic design the visual sense and overall proportion of asymmetric objects is represented with a pleasing visual effect. Art is not about blindly copying reality but an effort to express feelings like those of the spiritual life and of the beauty of flowers in bloom bringing to the viewer an aesthetic experience.

The design of 3D animation utilizes technologies sourced from 2D animation where 2D characters are brought to life. Painting realistic manga characters isn't easy "because the volumes aren't logical"[70]. From the history of the various methods of artistic 2D expression I learned to integrate techniques to make 3D animation. Inputting the "cute" and the "beauty" aesthetic from 2D manga into anime is not an easy thing to do. This can be seen in the film *The Flowers of Evil (Aku no Hana)[71],* based on Japanese manga artist Oshimi Shuuzou adaptation of his original comic book, which has "desperation" as its

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[69]Jean Auguste Dominique Ingres. *"La Grande Odalisque* 1814″. Web Gallery of Art. http://www.wga.hu/frames-e.html?/html/i/ingres/05ingres.html (accessed November 01, 2013).

[70] Ben Will. *How can I adopt manga-style elements into my portrait art?* (UK: ImagineFx. May 2013) 43.

[71] Michael Huang. "*Épater L'Otakusie! Meditations on Aku no Hana's Aggressive "Ugliness"* ". Anime Diet. (10 April, 2013): http://animediet.net/reviews/anime-reviews/epater-lotakusie-meditations-on-aku-no-hanas-aggressive-ugliness (accessed November 01, 2013).

theme, the metamorphosis of a love story between a man, a sadistic queen and good girl. Because of a wrong decision made after they have finished school these three characters parallel a life trajectory in the way in which they interact with each other. This movie, some have stated[72] failed to make the transition from manga to anime because in the anime the 3D background style was too realistic and detailed in comparison to the characters manga style 2D physical features. Observant audiences found that although the realistic screen animation background style was quite effective the contrast with the retained flat 2D manga characters was a "surprise" and therefore unacceptable. There were also reviews that commented that the anime style was "aggressively anti-kawaii, anti-moe, almost anti-anime" and "can be seen as one giant middle finger raised to current fandom"[73] .In the film *The Flowers of Evil (Aku no Hana)* the anime is too "realistic" and separate from the manga *Kawaii* style, and assessed by the viewing general public as "ugly".

"Moe", a style of character in manga and video games, as a style of beauty is used to attract viewers, Japanese otaku and others anime lovers. *"Moe"* is a feeling, an emotional impulse and response, the object of affection and of love, not a sexual orientation. *"Moe"* can describe women, men or even within the game the non-biological. *"Moe"* can also be used to describe animals, products and physical objects. Animation enthusiasts' reaction in seeing the emergence of beautiful girl characters, *"Moe"* style girls always with big eyes, is often one of an excited mental state. This *"Moe"* style is now used to describe the "lovely" girl.

Figure: 20. (Ed). *"The Flowers of evil (Aku no hana) manga vs anime face"[74].* (Network Image).

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72 Michael.

73 Michael.

74 Michael.

Figure: 21. (Ed). *"The K-On (keion) meet The Flowers of evil (Aku no hana),* the ultimate abomination?"[75]. (Network Image).

In my design I have not mixed the realistic with manga styles but I have used the *"Moe"* type in designing my male characters. My motivation to design my new male character, CAPTAIN KEN, who is very handsome, came after I watched the film by director Mika Ninagawa's "Helter Skelter (*Herutā Sukerutā*)" (2012)[76] which is based on a popular manga written by Kyoko Okazak. The lead character, Lilico, in the film desires to stay beautiful at all costs. I resolved to create a male character that was the opposite of this very beautiful female; creating through a process of digital surgery a very the handsome male. Like the character Lilico CAPTAIN KEN (WOLF) has undergone a process where his head and body have been completely remolded in a Gothic style to become a "beautiful" handsome character. His transformation into a werewolf describes the transformation from kawaii to kowai, from cute to scary.

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[75] Michael.

[76] Mika Ninagawa. *"Helter Skelter (Herutā Sukerutā)"*. (Japan, Japanese. July 14, 2012).

Figure: 22. Mika Ninagawa. (2012). *"Helter Skelter (Herutā Sukerutā)".* (Screenshot).

As with my *"Moe"* type design of LOLA THE WITCH and DR BRUCE I have also added the *"Moe"* feeling to my new male character CAPTAIN KEN (WOLF)'s design.

It is my opinion that it is not just for the male audience that the *"Moe"* type is appealing. It also appeals to both bi and heterosexual female audiences. *"Moe"* has an appeal that crosses all sexual genders. Girls as seen by boys can be very "sexy". Gay men can find other men "sexy". Lesbians find other females sexy. The *"Moe"* and the "sexy" type are, I think, somewhat similar.

"Facial attraction and evolution"[77] Researchers at the Natural History Museum found that healthy DNA leads to very healthy development and growth. A strong female reproductive hormone secretion is marked by large eyes and thick lips making women look sexually attractive; a strong male sex hormone secretion is marked by a well developed chin and tall stature, making men look handsome and appealing.

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[77] Weston et al. "Facial attraction and evolution". Natural History Museum. http://www.nhm.ac.uk/about-us/news/2007/august/news_12230.html (accessed April 16, 2014).

The Movie *"Tiny Times 2.0"*(2013)[78] written and directed by the Guo Jingming adapted from his novel of the same name, told with Shanghai as the background, is about love and friendship. The male character Zhou Shongguang is a playful and gentle boy with white skin, delicate features, cute "Moe" face, and is natural and not artificial. These are characteristics are that women prefer. In women "Moe" inspires happy and positive feelings.

Figure: 23. Guo Jingming. (2013). *"Tiny Times 2.0"*. (Screenshot).

In films, male actors often have special facial features that attract a female audience. When speaking of drawing faces of mature people Giovanni Civardi[79] states that "…the relative dimensions between its (the face's) various constituent elements - eyes, ears, nose and mouth, are (need to be) indicated correctly and precisely."[80] In fig 24-25, the facial structure of the male's forehead is higher and wider, the nose is longer, lip rejuvenation and enhancement is thicker, the chin crease is deeper and the jaw has a higher arch than a female's overall facial structure.

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[78] Guo Jingming. *Tiny Times 2.0.* (China. Mandarin. August 8, 2013).
[79] Giovanni Civardi, *The art of drawing book from Drawing Portraits Faces and Figures.* (UK, Tunbridge Wells, Kent: Search Press, 2002)
[80] Giovanni, 10.
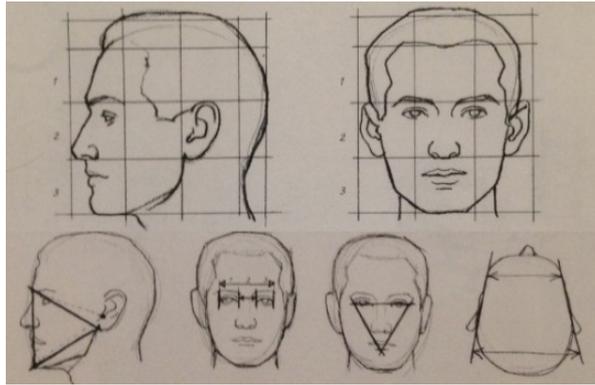
Figure: 24. Giovanni Civardi. (2002). "*Drawing the head.*"[81] (Photograph).
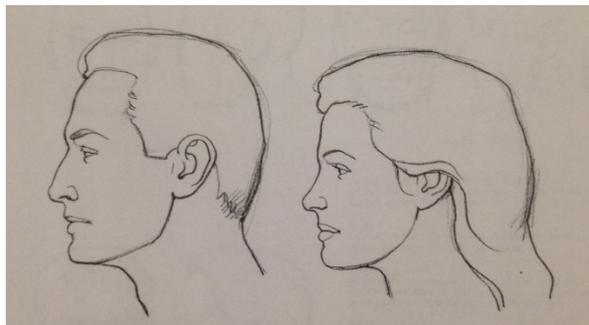

Figure: 25. Giovanni Civardi. (2002). "*Constructive Sketches.*"[82] (Photograph).

Figure: 26. *"Justin Bieber vs Miley Cyrus"*[83] (Network Image).

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[81] Giovanni, 10.
[82] Giovanni, 12.

From the picture above we can clearly see that Justin Bieber, aged 19, and Miley Cyrus, aged 21, because of their youth do not have significant difference as a male or a female; they both tend to have similar proportions in their facial structure. According to Takashi Lijima[84] "…The face distinguishes individuals. Age and experience are etched in wrinkles and bones degenerate, but the personality expressed in the face remains. Facial expressions which communicate various information change in many ways."[85] "Using the human anatomy as its starting point this book provides both the novice and the more experienced animator with new and innovative ways to create truly animated characters."

In "Computer Taught To Recognize Attractiveness In Women"[86] Amit Kagian reasoned "that features of physical objects corresponding to the "golden ratio" were considered most attractive." More proof that handsome men and beautiful women have common standards: are symmetrical and of average size.

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[83] (Ed), "Justin Bieber Vs Miley Cyrus," AngGAG. 27 (January, 2014): http://anygag.com/gag/1390551110/justin-bieber-vs-miley-cyrus/. (assessed January 28, 2014).

[84] Action Anatomy by Takashi Lijima - the complete guide to building digital characters from the inside out.

[85] Takashi Lijima, *Action Anatomy: For Gamers, Animators, and Digital Artists*. (New York: Harper Design, 2005), 102.

[86] Tel Aviv University. "Computer Taught To Recognize Attractiveness In Women." ScienceDaily. www.sciencedaily.com/releases/2008/04/080404122139.htm (accessed April 16, 2014).
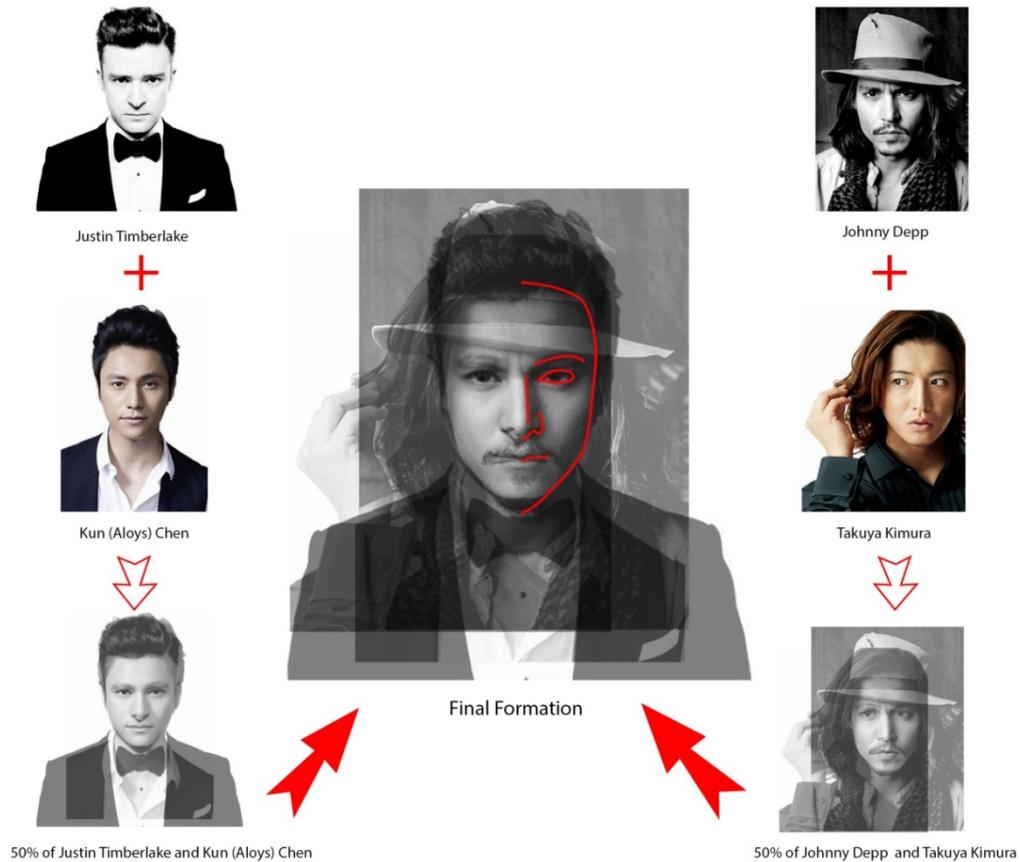
Figure: 27. JianKun Chen. (2014). *"Men Facial features".* (Photoshop).

After studying the basic male facial structure I then began to search for and compare similarities in Western people and Asian people. Justin Timberlake joined with Kun (Aloys) Chen's photo, and Johnny Depp joined with Takuya Kimura's photo all have diamond shaped facial structure. People with faces shaped like diamonds usually have tall foreheads, long chins, and high cheekbones. Diamond faces tend to be similar, are rather melancholic and look quite mature. From the final formation we can clearly see that this type of man is mature, bohemian, wild, and masculine. This relates to my design of Captain Ken who has this Diamond type of facial structure - longed faced, sharp chin, tall nose, wide eyes and with thick lips. As a young man, without the mustache that his father has, he attracts attention due to his rather "bright" and good looks.

Another influence on my design decisions is the work of Juno Jeong[87] and Hyung-Tae Kim's[88] and their distinctive model character portrayals. Their unique art styles have helped lead a new trend in Korean online games, as many illustrators and artist are eager to imitate their art style.

Juno Jeong was the main influence for the facial features and clothing style for my character, CAPTAIN KEN. His work is most famously featured in the game *Lineage 2*[89], in which he created the concept artwork and the visual marketing resources. His use of mixing Eastern and Western art styles in a combined drawing realism "also showed how he created his own artworks on the programs in such details and depth that inspired other artists in the field of graphic illustration." [90] He believes it is the designer's responsibility to watch over the 3D character as it grows into its final form.

Figure: 28. Juno Jeong. (2010). *"Elf race and Dark Elf race illustration works"* [91] (Photograph).

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[87] *Juno Jeong he has released two books Junography – Juno's Illustration Work Collection Book 1998-2010 (2010) and ALIAS OF ANTI PICTURE: Juno Jeong's Visual Illustration Production Note (2010).*

[88] Michelle, "Blade & Soul AD Kim Hyung Tae Interview Before 2nd CBT," mmosite.com, 8(November 2011): http://news.mmosite.com/content/2011-08-11/blade_and_soul_ad_kim_hyung_tae_interview_before_2nd_cbt,1.shtml. (assessed November 1, 2013).

[89] Lineage II. "R Grade Hell Armor : Goddess of Destruction Lineage2," Lineage II New, 9(October 2011): http://elliebellynet.blogspot.co.nz/2011/06/r-grade-hell-armor-goddess-of.html. (assessed November 7, 2013).

[90] Amy Park, "Juno Jeong," prezi.com,7(October 2013): http://prezi.com/ozfsmgrl9b3v/juno-jeong/. (assessed November 1, 2013).

[91] Juno Jeong. *Junography – Juno's Illustration Work Collection Book 1998-2010.* (Korea: Viel Books, 2010). 32-35.

Figure: 29. Lineage II. *"Elf race and Dark Elf race game models"92.* (Network Images).

Hyung-Tae's style is that of exaggerated realism. He manages to engage audiences through his subtle yet slightly assertive style. In addition, he is well known for his impressive use of lighting and 3D space. He designed the video game characters for *Magna Carta 2*[93], *War of Gensis 4*[94], and the *Blade & Soul*[95] series. His artwork shows "his willingness to go outside the constraints of human physicality to make appealing characters. All of his characters, male or female, are soft and curved in ways that make sense, even if they are not tied to real anatomy."[96]

[92] Lineage II.

[93] IGN, "Magna Carta 2," IGN, 22(October 2009): http://au.ign.com/games/magnacarta-2/xbox-360-773918. (accessed April 23, 2013).

[94] Steparu, "The War of Genesis 4 Online," steparu.com, 24(May 2013): http://steparu.com/previews/mmo-rpg-previews/1226-the-war-of-genesis-4. (accessed June 6, 2013).

[95] Blade & Soul, "Blade & Soul Wiki," Curse Inc, (2010 - 2011). http://www.bladeandsouldojo.com/. (accessed June 10, 2013).

[96] Brandon, Sheffield, "The Art Of The Form: Hyung-Tae Kim Speaks" gamasutra.com, (March 29, 2010) : http://www.gamasutra.com/view/feature/132698/the_art_of_the_form_hyungtae_kim_.php?print=1. (accessed April 05, 2013).

Figure: 30. IGN. *"Magna Carta 2 for XBOX 360"[97].* (Network Images).

Hyung-Tae manages to combine both Western and Japanese style paintings into his drawings. He states "from the natural identification of what we really like since birth before cultural context, I tried to exaggerate all those aspects and tie them into a more complex and deeper emotion and illustrate something people may like innately."[98] He offers a unique perspective on drawing the female and male body. For example, he states that the "most important part of the character is actually fat"[99] and shows this my emphasizing the chest and hips, and also says that "despite the beauty of bones and muscles, those aspects tend to not be particularly feminine, and lend themselves to something more male."[100] When drawing male characters, he makes them more attractive by emphasizing the muscles, especially the movement of the waist and stomach.

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[97] ING.
[98] Brandon.
[99] Brandon.
[100] Brandon.

Figure: 31. Xia Taptara. (2012). *"Character design and screen shots from Blade and Soul and Magna Carta"*[101]. (Network Images).

Hyung-Tae's description of his work was also a large influence on me when designing CAPTAIN KEN's werewolf model. I incorporated his drawing style of exaggerating the arms, pelvis bone, muscles around the waist, shoulder and skeletal proportions into the werewolf design in order to emphasize the werewolf's tall and powerful body.

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[101] Xia Taptara. *"Hyung Tae Kim's Character design tutorial."* idrawgirls.com. (February 6, 2012): http://idrawgirls.com/tutorials/2012/02/06/hyung-tae-kims-character-design-tutorial/. (accessed November 01, 2013).

I have used the character Amaterasu from *Okami*[102] a PS2 adventure game that was released by Capcom on April 20, 2006 as a basis for my characterization of the transition of CAPTAIN KEN into the werewolf. *Okami* is influenced by Japanese mythology, legends and fairy tales. The story of the game takes place in a dark, lifeless world dominated by monsters. Players play as "Armed Amaterasu", a character based in Japanese mythology. When playing the protagonist, Armed Amaterasu, the goal of the game is to combat evil, and restore the world back to its original, peaceful state. The fact that the visuals of the game are very unique was a major selling point. The art style uses bold, inky outlines and brush strokes in order resemble distinctly Japanese calligraphy brush paintings.

Figure: 32. Capcom. *"Armed Amaterasu"*[103]. (Photograph).

I very much enjoyed the animation of the game due to this creative visual style, and this, in addition to the soundtrack (containing only sounds of blowing wind), helped to make a very creative piece of work. I chose Armed Amaterasu as an example due to the presentation of the game anime, and to assist in my design of werewolf CAPTAIN KEN's facial expression. The appearance of the white wolf in Okami was a major focus for the development of my artwork as I used it as a reference when designing my werewolf

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[102] Okami. *Okami Official Complete works*. (Canado: Udon Entertainment Corp. 2006).
[103] Okami, 4-10.

model. I wanted the model to appeal as a strong and powerful, yet cute and handsome but not vicious or violent character.

Figure: 33. JianKun Chen. (2013). *"CAPTAIN KEN Photoshop 2D line drawing."* (Illustration)

The Eyeballs of my characters are a major part of my "cute" aesthetic design focus. My concept is to emulate 2D cartoon eyes and have multiple white dots high-lights so that eyes seem to flicker, an effect that makes it seem as though the character is reflecting on a next move. Gamers will then feel that the cartoon characters have charm. I want the eyeball to look real with a non-real feel, and enable gamers to feel that they are watching real 3D biological characters that have soul, and hence resonate with the fantasy of the game.

Figure: 34.   Ben Will. (2013). *How can I adopt manga-style elements into my portrait art?*[104] (Photograph).

This effect I use to animate the 3D model eyeballs is similar in effect to the hand painting of high points of light inside the eye of the 2D cartoon.

Based on this process my testing was conducted in two parts;

1. With DR BRUCE and LOLA THE WITCH the eye high-light white spots were created with models to imitate 2D cartoon eyeball multiple high-light affects so that comparisons and easy adjustments of eye movements and shape changes could be made.

Model for Eyeball design process image
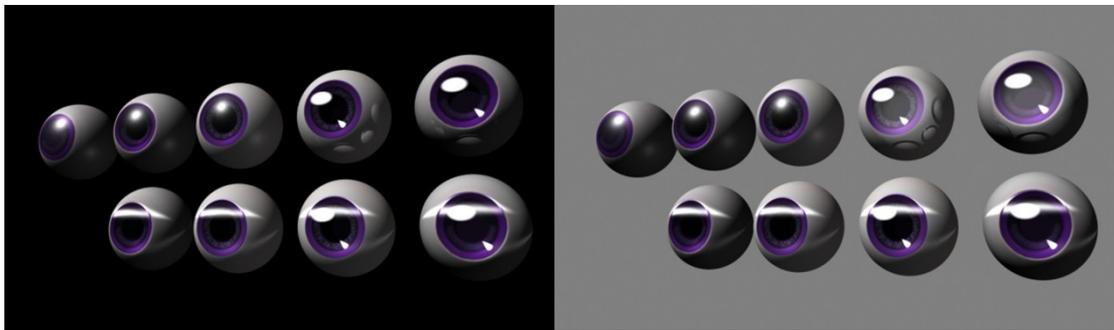
Figure: 35. JianKun Chen. (2013). *"DR BRUCE Eyeball development test in Maya"*. (Screenshot).
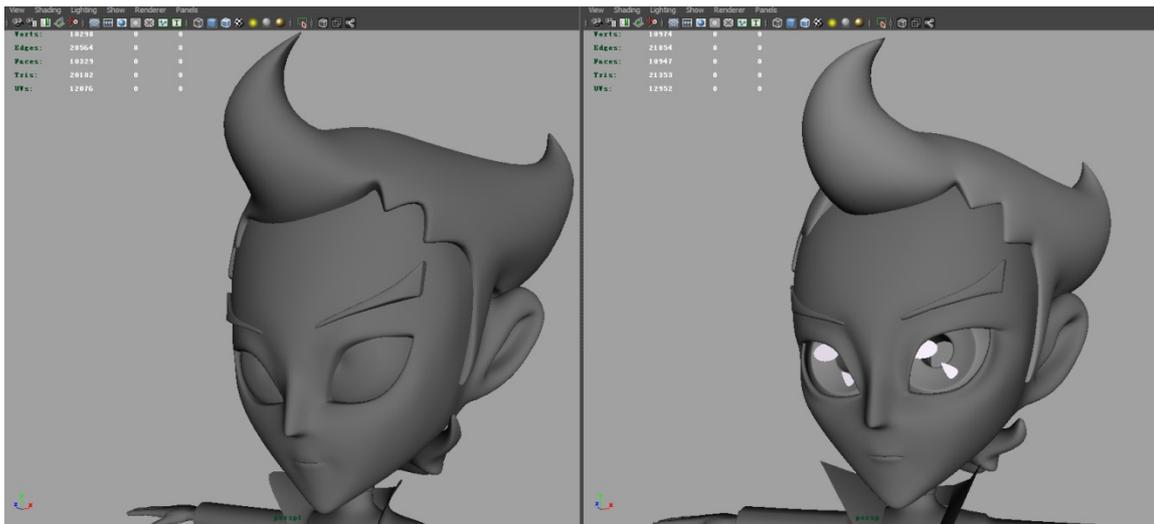

Figure: 36. JianKun Chen. (2013). *"Comparison of old and new DR BRUCE Eye"*. (Screenshot).
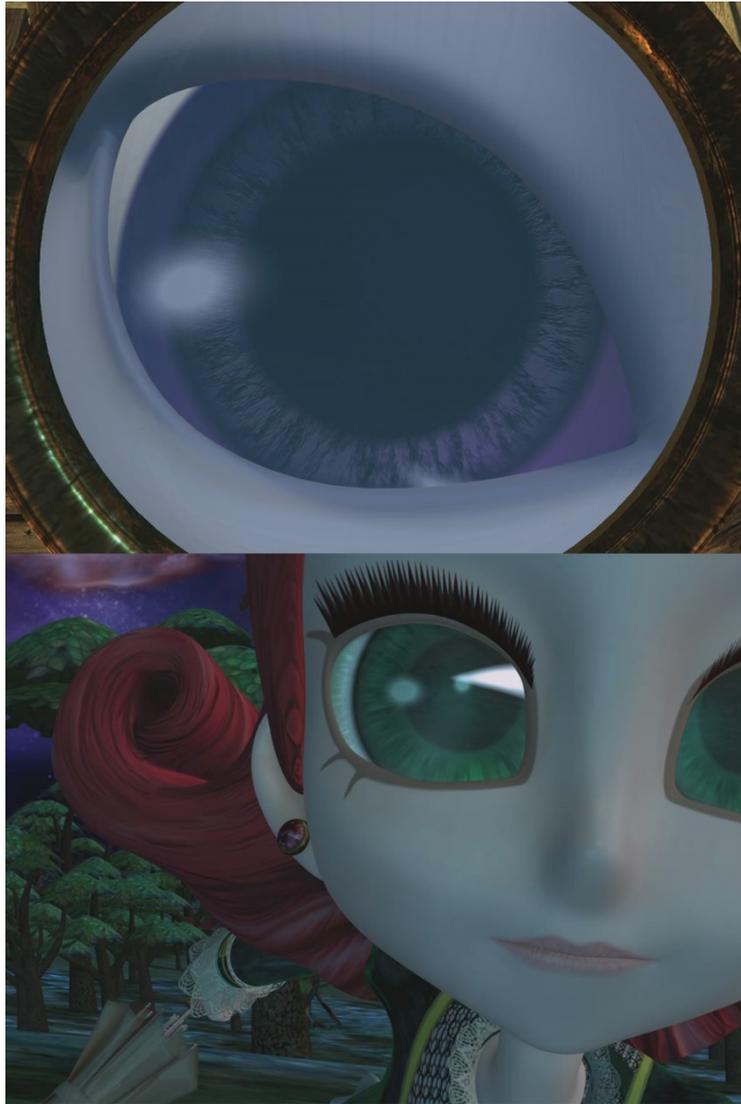
Figure: 37. JianKun Chen. (2013). *"DR BRUCE Eye and WITCH LOLA Eye in the Animation"*. (Screenshot).

2. Using the rational of the old hand-painted high light effect but generated inside the crystal eye sphere. With CAPTAIN KEN, in the scene when his eye turns into the eye of the werewolf, I abandoned the old hand-painted material texture for character models and used MAYA material parameters as the eye textures. This was more effective in creating the texture change.
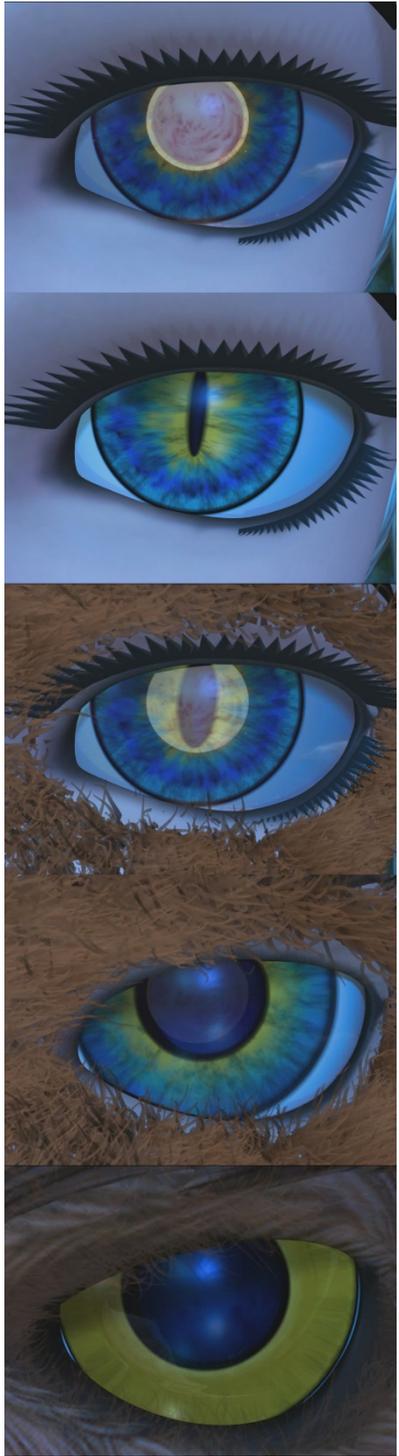
Figure: 38. JianKun Chen. (2013). *"CAPTAIN KEN Eye Transfiguration into Werewolf Anime"*. (Screenshot).

In doing so I designed a character that transitions from cute to scary, *kawaii* to *kowai*, CAPTAIN KEN to WOLF.
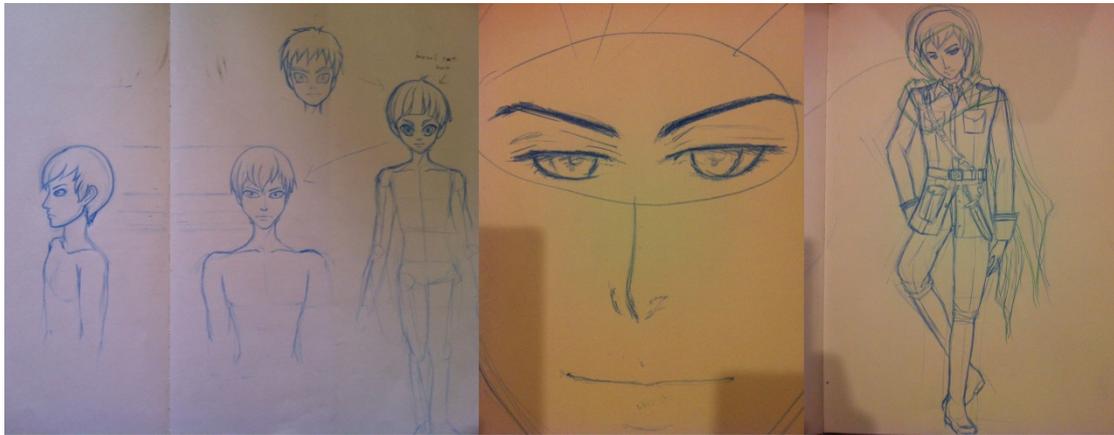

Figure: 39. JianKun Chen. (2013). *"CAPTAIN KEN drawing development"*. (Photograph).
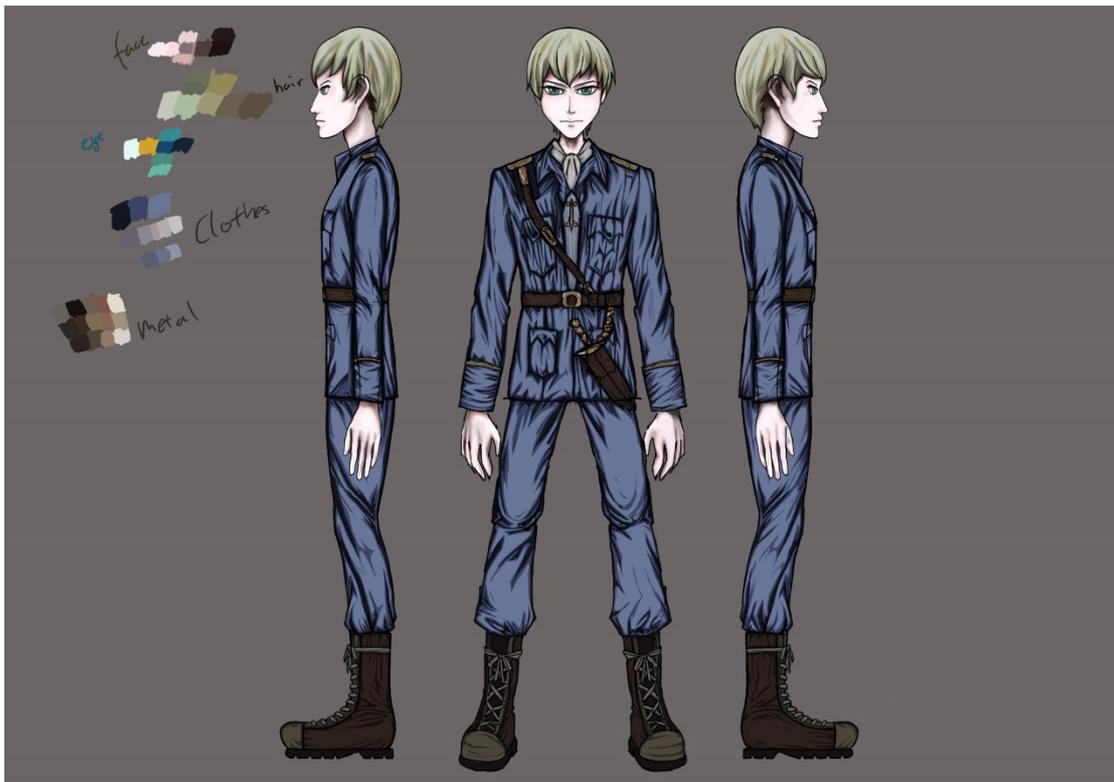

Figure: 40. JianKun Chen. (2013). *"CAPTAIN KEN Photoshop 2D color drawing"*. (Photograph).
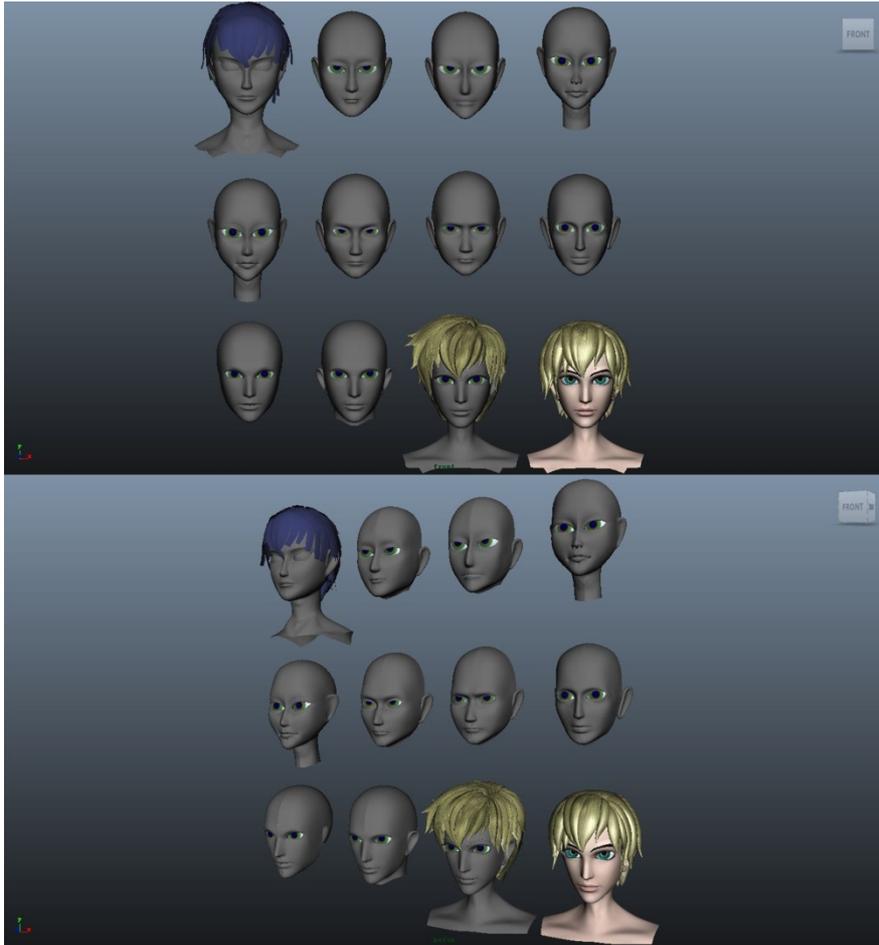
Figure: 41. JianKun Chen. (2013). *"CAPTAIN KEN head model development in Maya"*. (Screenshot).
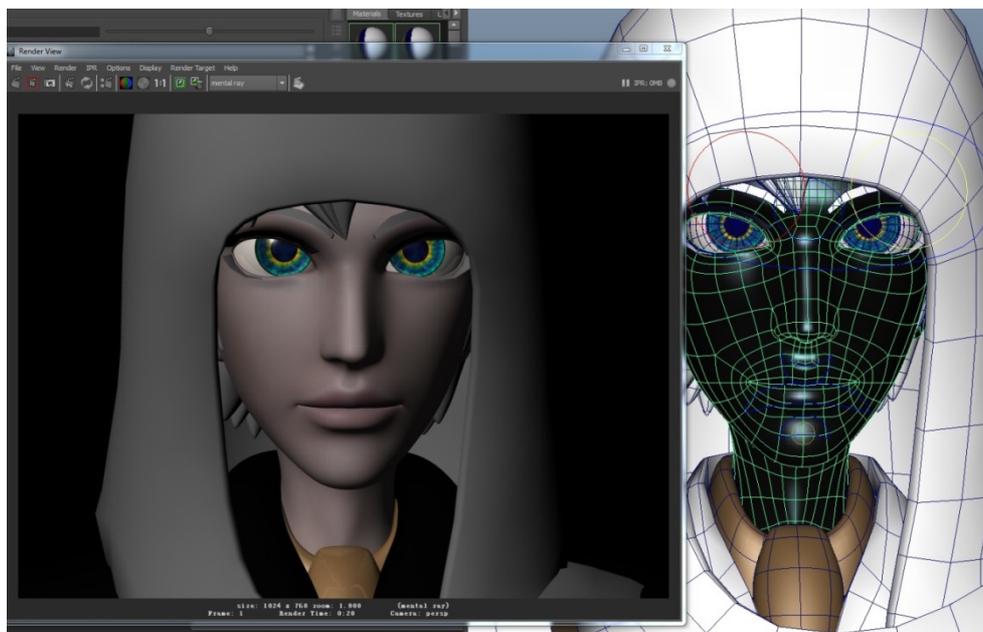

Figure: 42. JianKun Chen. (2013). *"CAPTAIN KEN head model rendering in Maya"*. (Screenshot).
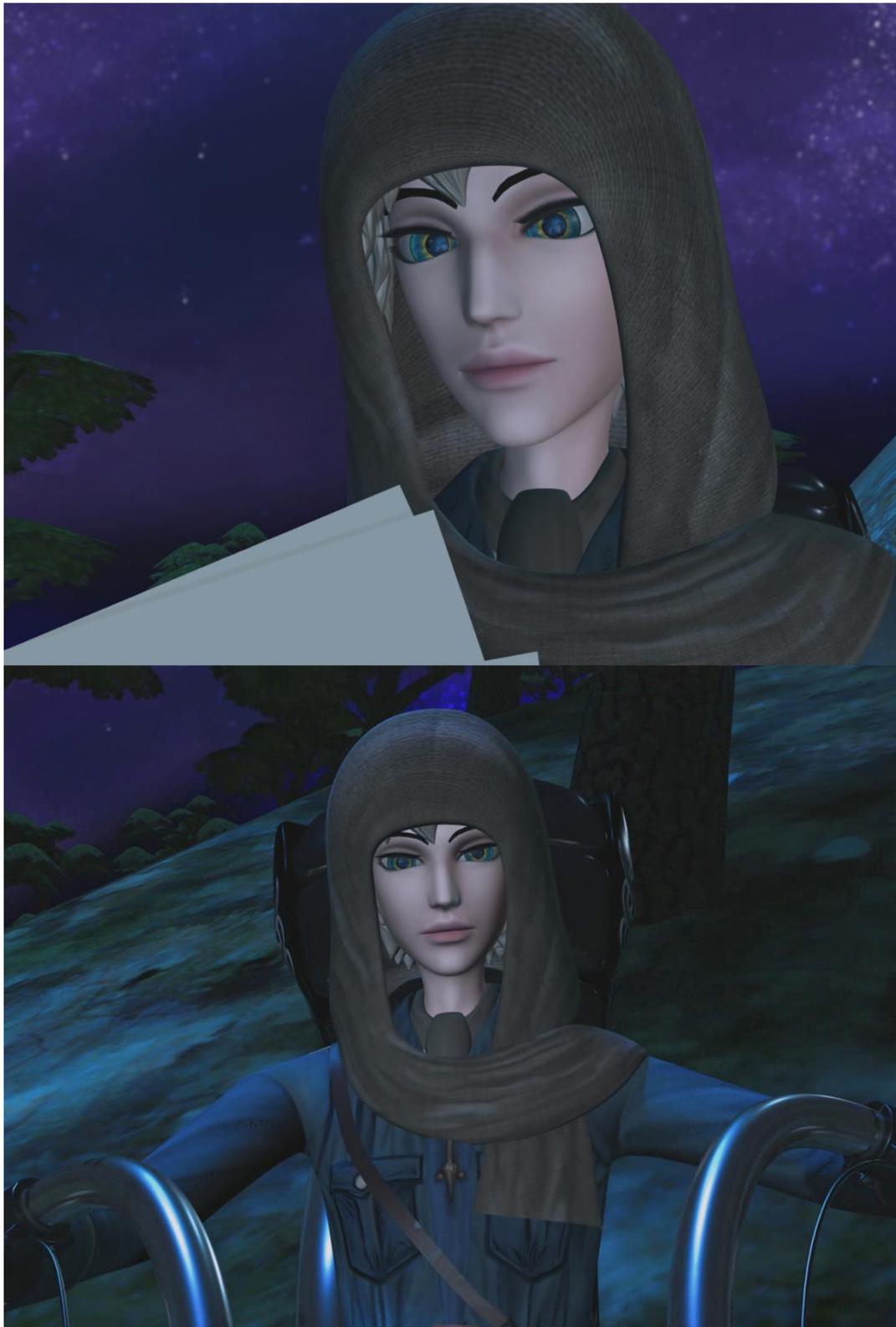
Figure: 43. JianKun Chen. (2013). *"CAPTAIN KEN head close-up"*. (Screenshot).

Figure: 44. JianKun Chen. (2013). *"WOLF drawing development"*. (Screenshot).

Figure: 45. JianKun Chen. (2013). *"WOLF Photoshop 2D color drawing"*. (Screenshot).
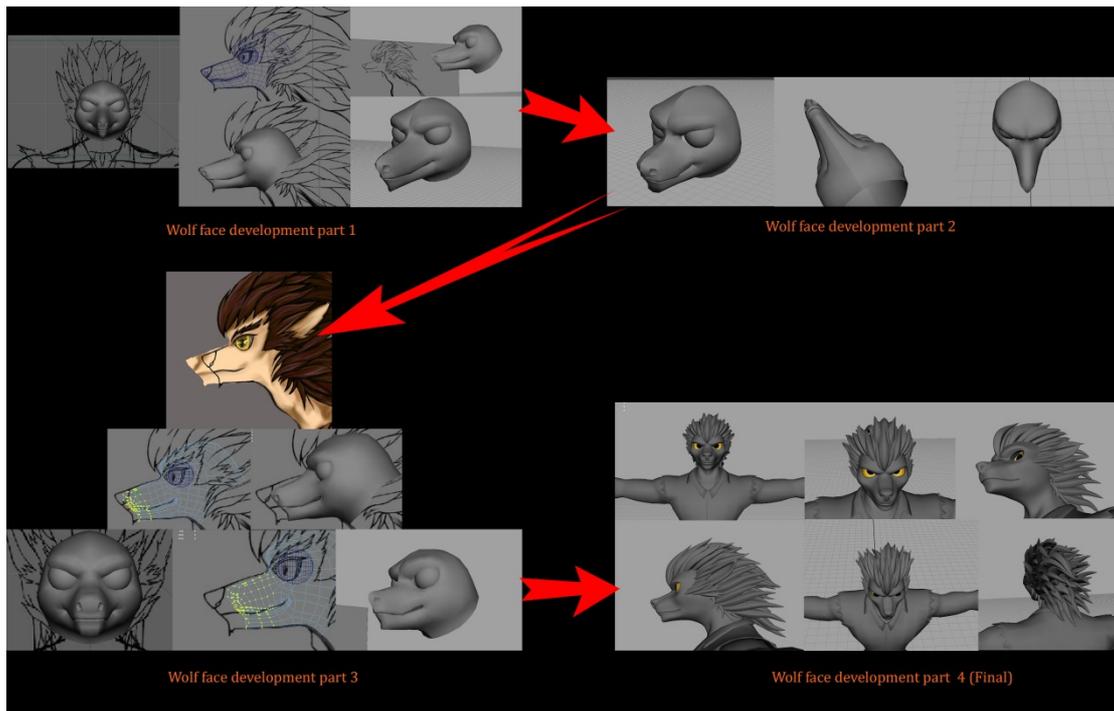
Figure: 46. JianKun Chen. (2013). *"WOLF head model development in Maya"*. (Screenshot).
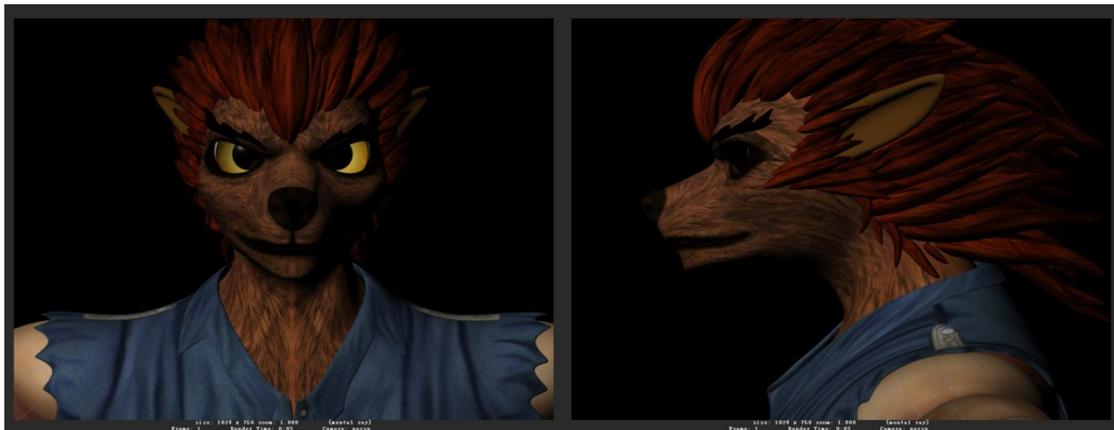
Figure: 47. JianKun Chen. (2013). *"WOLF head model rendering in Maya"*. (Screenshot).

Figure: 48. JianKun Chen. (2013). *"WOLF head close-up"*. (Screenshot).

User Interface design and Kinect

Norman refers to the way that "artists often pave the way, exploring approaches to human interaction that science struggles to understand and that "(F)un and games (are): a worthwhile pursuit".[105] This inspired me to think about alternative human interaction design techniques and to reflect on Hollywood sci-fi movies such as *Avatar* and *Iron Man* and the future of human-computer interaction and the advanced technology of holographic projection and gesture control vividly portrayed in both these movies. *Avatar (2009)*[106] features 3D simulation and holographic images and other data that floats in the air. The hero Tony Stark in *Iron Man*[107] is able to rotate, zoom, and pan sections of his armour which is itself formed by a 3D projection. In the 2011 film *Real Steel*[108], which is set in the near future, robots compete in boxing matches, as human boxing competitions have been banned. The robots are fitted with speech recognition systems. In one scene the robot Adam's speech recognition system crashes and his control mode is switched to a "shadow" mode" which imitates a retired human boxer's actions. These films all showcase the potential of human-computer interaction where the interaction appears in a natural and intuitive way to be gradually becoming a natural extension of our bodies and portrayed as a part of the human psyche.

Figure: 49. James Cameron. (2009). *"Avatar, 2009"*. (Screenshot).

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[105] Norman Donald. A. *Emotional design: Why we love (or hate) everyday things*. (New York: Basic Books, 2004) 100 – 101.
[106] James Cameron. (2009). "*Avatar* ". (United States: 20th Century Fox. English. December 18, 2009).
[107] Jon Favreau. (2008). *"Iron Man"*. (United States: Paramount Pictures. English. May 2, 2008).
[108] Shawn Levy. (2011). *"Real Steel"*. (United States: Walt Disney Studios Motion Pictures. English. October 7, 2011).

Figure: 50. Jon Favreau. (2008). *"Iron Man"*. (Screenshot).
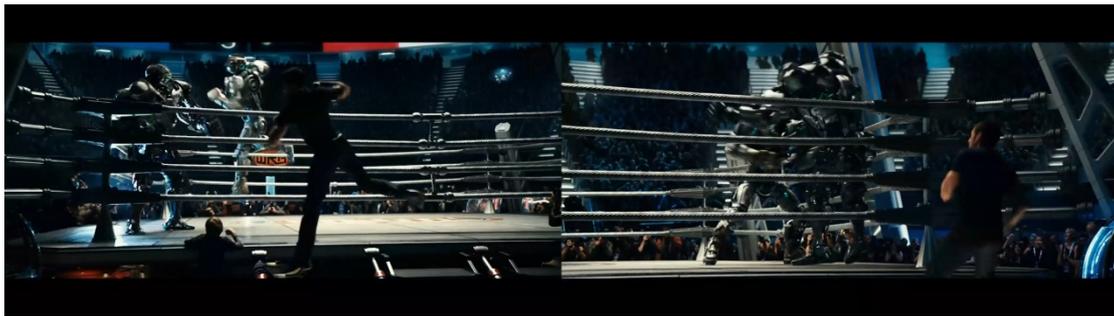
Figure: 51. Shawn Levy. (2011). *"Real Steel"*. (Screenshot).

Contemplating both these movies and their content and Norman's discussion of "a natural application of machine intelligence and collaborative power to provide a true machine+person symbiosis – human-machine interface at its best"[109] and his statement that Design is "the deliberate shaping of the environment in ways that satisfy individual and societal needs"[110] has led me to consider and focus on ways in which the human somatosensory system can be better applied as a user interface. Microsoft Kinect does just this. It is also an intuitive interface that I consider is easier for female gamers to use. As the technology develops Kinect will increasingly enable it users to interact in virtual space in real time.

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[109] Donald A. Norman . "*The Design of Future Things; CHAPTER THREE: Natural Interaction; Responsive Automation*". Trilemon.com. (November, 2013): http://www.trilemon.com/wp-content/uploads/2013/11/The-Design-of-Future-Things.pdf. (accessed November 01, 2013).

[110] Donald A. Norman . "*The Design of Future Things; CHAPTER SEVEN:The Future of Everyday Things; The Science of Design*". Trilemon.com. (November, 2013): http://www.trilemon.com/wp-content/uploads/2013/11/The-Design-of-Future-Things.pdf. (accessed November 01, 2013).

My research into this new and better interface has been philosophically inspired by what I consider three core moments in interface design.

1. In 2008 Microsoft chairman Bill Gates proposed the concept of the natural user interface and being part of the next wave of business productivity.[111]

2. In 2009 Pranav Mistry developed Sixthsense[112] "a wearable device that enables new interactions between the real world and the world of data".[113] This device utilizes gesture recognition, cameras, projectors and cloud computing.

3. In 2010 interface designer John Underkoffler[114] featured in a Ted Talk about "showing how sexy it could be to use natural gestures, without keyboard, mouse or command line"[115] as a user interface.

Then in 2010 Microsoft Kinect[116], a sensor device shaped by a camera network was developed and in 2013 the Leap motion sensor[117], based on two built–in cameras capturing hand movement images from different angles and reconstructing that information in a real world 3D space, was launched. Natural human interface design and somatosensory technology is now fast developing. This includes an understanding of the effect of emotions on human nature and how that affects human actions.

As stated the focus of my current project is to bring more female players to digital gaming. A game control method, like Kinect rather than Leap motion, is not difficult to use and because it can be used by many people at once provides for enhanced family entertainment. Leap motion, however, like a keyboard, can only be used by one person. My focus as both a female game designer and player is to promote an inclusive and nurturing game, one that can be shared. The Kinect interface operates simply by sensing the movements of both the upper and the lower body.

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[111] Microsoft . *"Bill Gates: Microsoft CEO Summit 2008: The Next Wave of Business Productivity"*. Microscft.com. *(*May 14, 2008): http://www.microsoft.com/en-us/news/exec/billg/speeches/2008/05-14ceosummit.aspx. (accessed November 01, 2013).

[112] Pranav Mistry. *"Pranav Mistry: The thrilling potential of SixthSense technology".* TED Conferences, LLC. (November, 2009): http://www.ted.com/talks/pranav_mistry_the_thrilling_potential_of_sixthsense_technology.html. (accessed November 01, 2013).

[113] Pranav Mistry. *"Pranav Mistry: MIT grad student".* TED Conferences, LLC. (November, 2009): http://www.ted.com/speakers/pranav_mistry.html. (accessed November 01, 2013).

[114] John Underkoffler. *"John Underkoffler: Pointing to the future of UI."* TED Conferences, LLC.. (February, 2010): http://www.ted.com/talks/john_underkoffler_drive_3d_data_with_a_gesture.html. (accessed November 01, 2013).

[115]John Underkoffler, *"Speakers John Underkoffler: Interface designer."* TED Conferences, LLC.. (June, 2010): http://www.ted.com/speakers/john_underkoffler.html. (accessed November 01, 2013).

[116] Kinect, *Microsoft*. http://www.xbox.com/en-US/kinect. (accessed November 01, 2013).

[117] Michael Buckwald David Holz. *Leapmotion*, Leapmotion, Inc. (2010): https://www.leapmotion.com/. (accessed November 01, 2013).

Nowadays virtual game design and the use of motion control are well accepted as popular modern concepts. My core idea was to combine Virtual Reality devices and motion controllers together in my game in order to create a fully immersive game experience.

In the game market we can now buy different controllers to control moving images, sounds or texts and to manipulate the visual and aural output. We can also use the keyboard, mouse and gamepad and other forms of input control to extend our body into the virtual space. These evolving technologies attract users as new game practices, and provide a most effective way for them to experience better and deeper immersion.

Kinect is the most logical control system and will be the next stage of game communication. Kinect enables us to extend our bodies directly into the video game space. For example: we use our feet to move, use our heads to look around and our hands to interact in the visual space. This is the most natural and effective man-machine interface.

Game Interface Development

Aligned to my use of Kinect as an interface I am progressing an idea, inspired by the Motion Project[118], to use Unity 3D combined with ZigFu/ZDK[119] software to further develop my game and it increase its appeal.

How the instrument and the visuals work example from The V Motion Project.
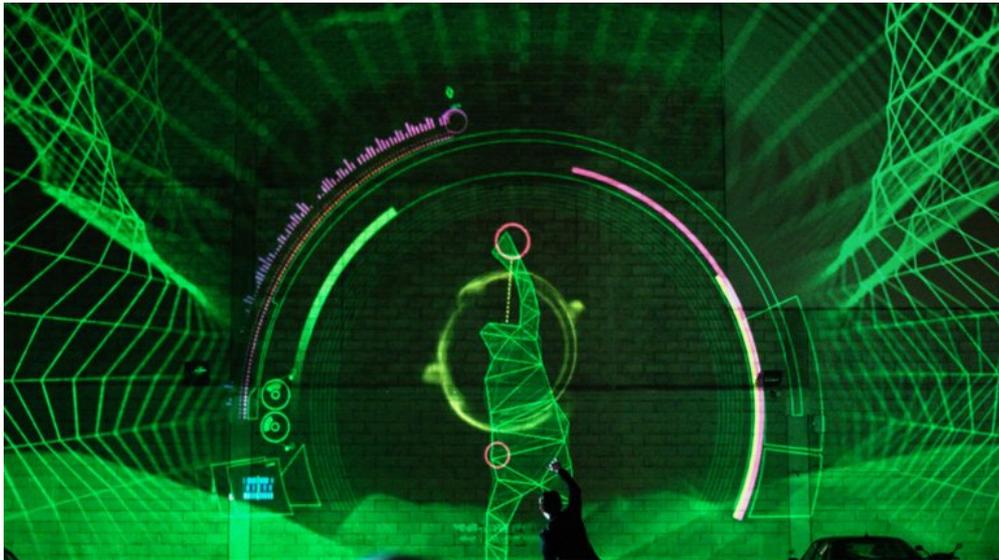
Figure: 52. Jeff Nusz. "*The motion project V - Energy Drink*".[120] (Network Image).
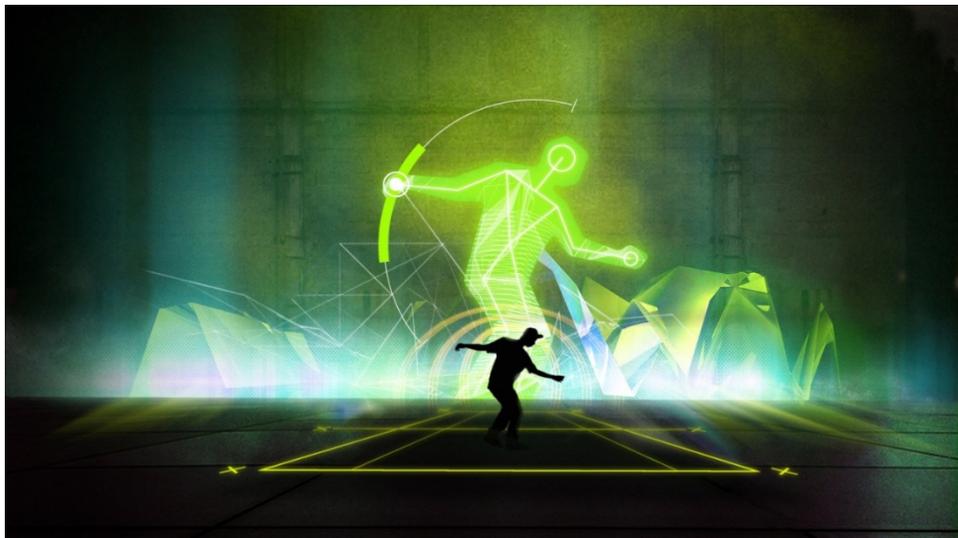
Figure: 53. Jeff Nusz. "*The Vmotion project - the instrument*".[121] (Network Image).

[118] Jeff Nusz. "The V Motion Project" AssemblyLtd. (April 2012): http://www.assemblyltd.com/work/v-motion-project. (accessed November 01, 2013).

[119] ZigFu, Motion Arcade Inc. (2013-2014):http://zigfu.com/. (accessed April 05, 2013).

[120] Nusz, Jeff. "The V Motion Project" AssemblyLtd. (April 2012): http://www.assemblyltd.com/work/v-motion-project. (accessed November 01, 2013).
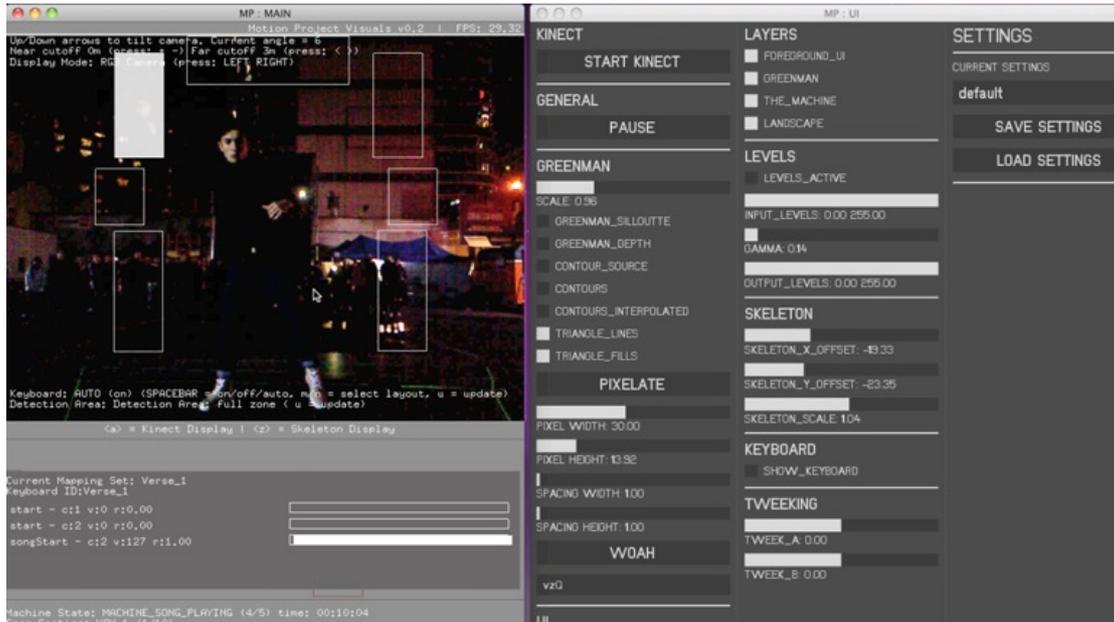
Figure: 54. Jeff Nusz. "*The V motion project part ii*".[122] (Network Image).
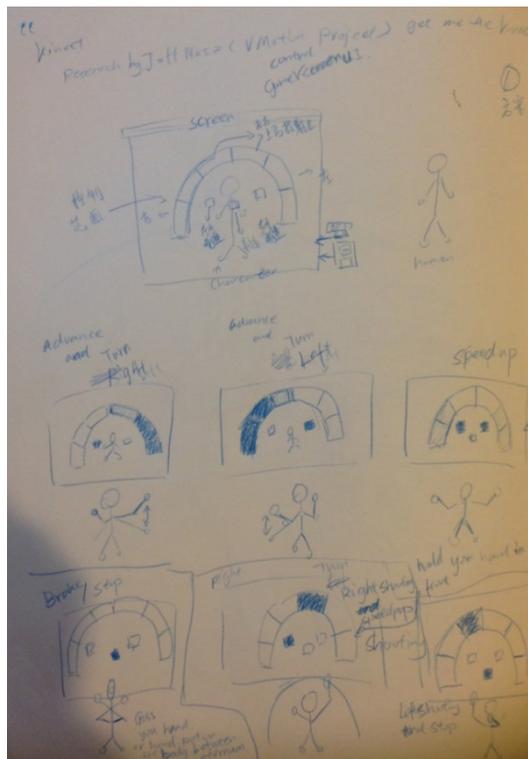
Figure: 55. JianKun Chen. (2013). "*Game Interface Development to Kinect*". (Photograph).

[121] Nusz, Jeff. *The v motion project - the instrument*. Custom-logic.com. http://www.custom-logic.com/blog/v-motion-project-the-instrument/. (accessed November 01, 2013).

[122] Nusz, Jeff. *The v motion project part ii*. Custom-logic.com. http://www.custom-logic.com/blog/v-motion-project-part-ii-the-visuals/. (accessed November 01, 2013).

The idea of Zigfu is to read the map coordinates through the human skeleton joints in real time and transmit these back to Unity 3D scripts through the Kinect sensor. Kinect determines the coordinates of the player's posture and movements with mathematical calculations and transmits the data back to Unity3D. Turning left or right determines the angle between the vector points – in this way Kinect reads the player's posture and movements and triggers an appropriate action.
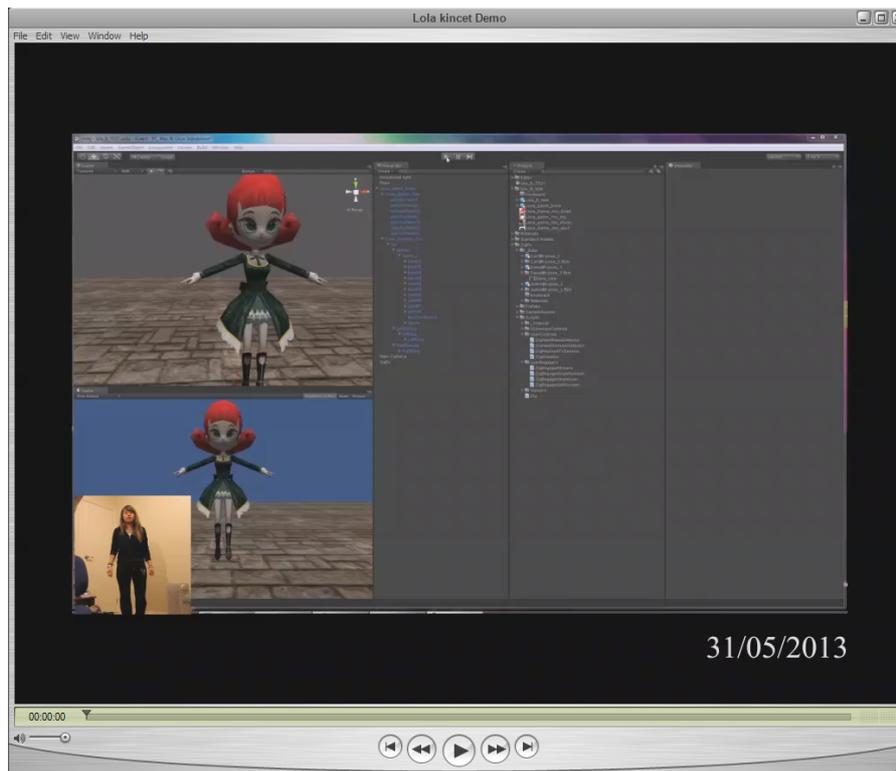

Figure: 56. JianKun Chen. (2013). "First test WITCH LOLA Kinect Demo". (Photograph).

In the Windows operating system individual keys become the game action buttons. This minimizes the amount of error in the existing program and strengthens the compatibility and reduces the chance of glitches. I still needed to optimize the ease of control of the computer mouse and the keyboard. In proceeding to data processing I tried to carry out data noise filtering. Unfortunately the effect of this was not particularly desirable. The display shakes and dislocation and misjudgments of the situation occurs. To make everything flawless may take a long time. Since there was no modification from the original operating system the multiplayer game was not affected whatsoever. I have not changed the level 1 gameplay.
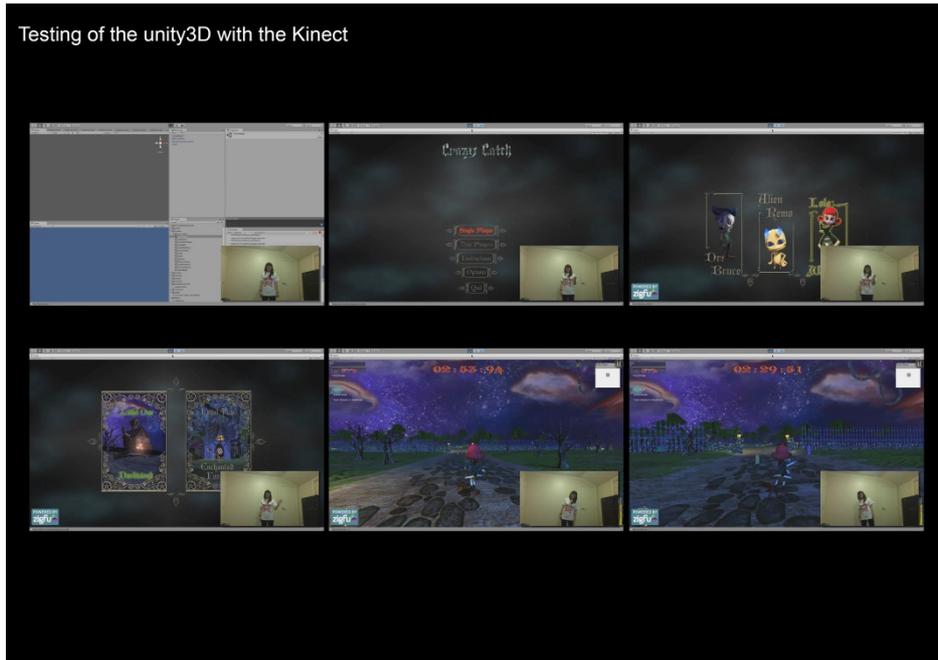
Figure: 57. JianKun Chen. (2013). "Testing of the unity3D with the Kinect". (Photograph).

For Kinect testing and development please watch the "Lola Kinect Demo Mp4 File" and "Kinect 0807 Mp4 Files" in The Video Clips files.

I have yet to make be changes on Level 2 which will be divided into three phases – Phase One will be a racing game – the objective being to collect a required amount of stars before entering into Phase Two. Phase Two will be a "boss mode" – the objective will be to survive and defeat the boss, the snake, who strikes the players to try to knock them out. Phase Three will be a downhill racing game where you need to reach the finish line first before the other opponents.
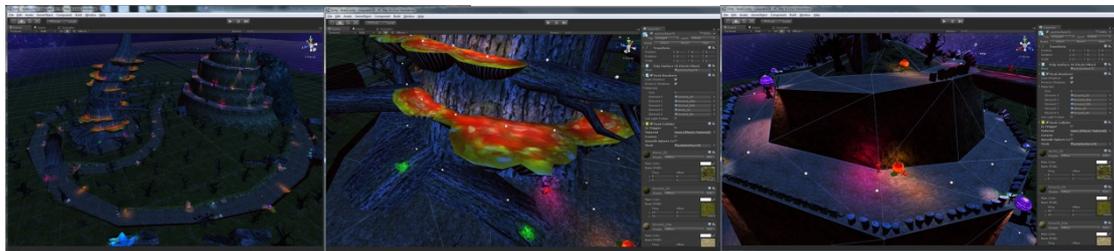

Figure: 58. JianKun Chen. (2013). "Game development and Set up form the level2 in Unity3d." (Screenshot).

Also as I have redesigned the game UI to the interface it is important to link to the animation and game demo.


Figure: 59. JianKun Chen. (2013). "New Game UI design development". (Photograph).
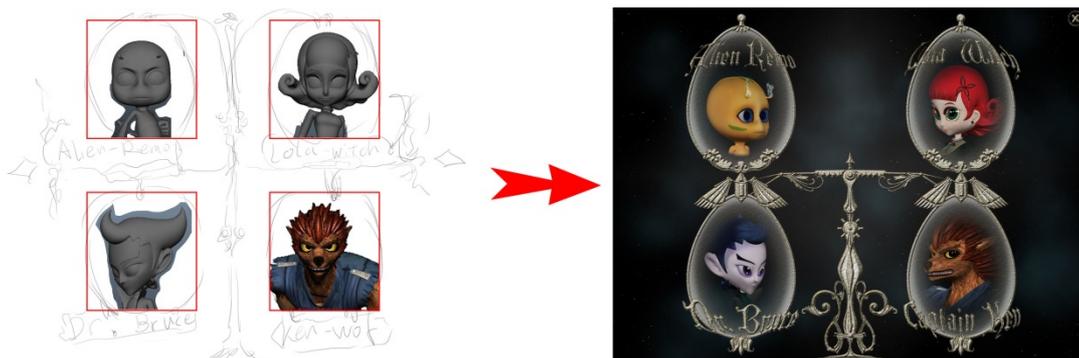
Figure: 60. JianKun Chen. (2013). "New Game UI design in Photoshop". (Photograph).

I have experimented in my game using the player's hand / arm extension as the motion controller. Microsoft Kinect was initially an upper body motion tracking technique for portable virtual reality devices. Through the development of wireless network transmission systems and motion control data it has become a technique that uses the whole body. This has proved to be the most effective control prototype to date, where actions in the physical world are reflected in the virtual. In addition, my game is about control system design and experimental use of a better level of immersion where a 3D model that reflects the user's body is placed into the scene so that the movement of the body can be displayed in real-time consensus. This for me is the most immersive experience; when the user can longer distinguish reality from virtual space.

Chapter Three:
Technical Issues and Processes

I have described development data test representations, associated animation and game design elements and other aspects of technology theory and experiment in the earlier chapters of this thesis. In this section I focus on outlined design elements, and contrast these with my previous game design. I then give a step by step description of my 3D character animation and game production processes. In this I have used a variety of software. I have generally divided my major technical issues and problems into three main areas:

1) *Animation aspect.*

2) *Aspects of the game mode.*

3) *Creation and development of game technical processes.*

(Note: The elements of animation and game development described in these sections are of an advanced level. Beginners or amateurs will need to visit the official websites of the software I have used in order to understand them.)

Animation aspects – *Maya, ZBursh, After effects, Photoshop*

1. The character's eyes: the main cornea, with blinn material to make eye convex refractive. The front and side of the refractive index is not the same so I need to set the refractive index of the material according to the lens. Another shortcoming is that the result must be re-rendered to show the refraction in the eye.
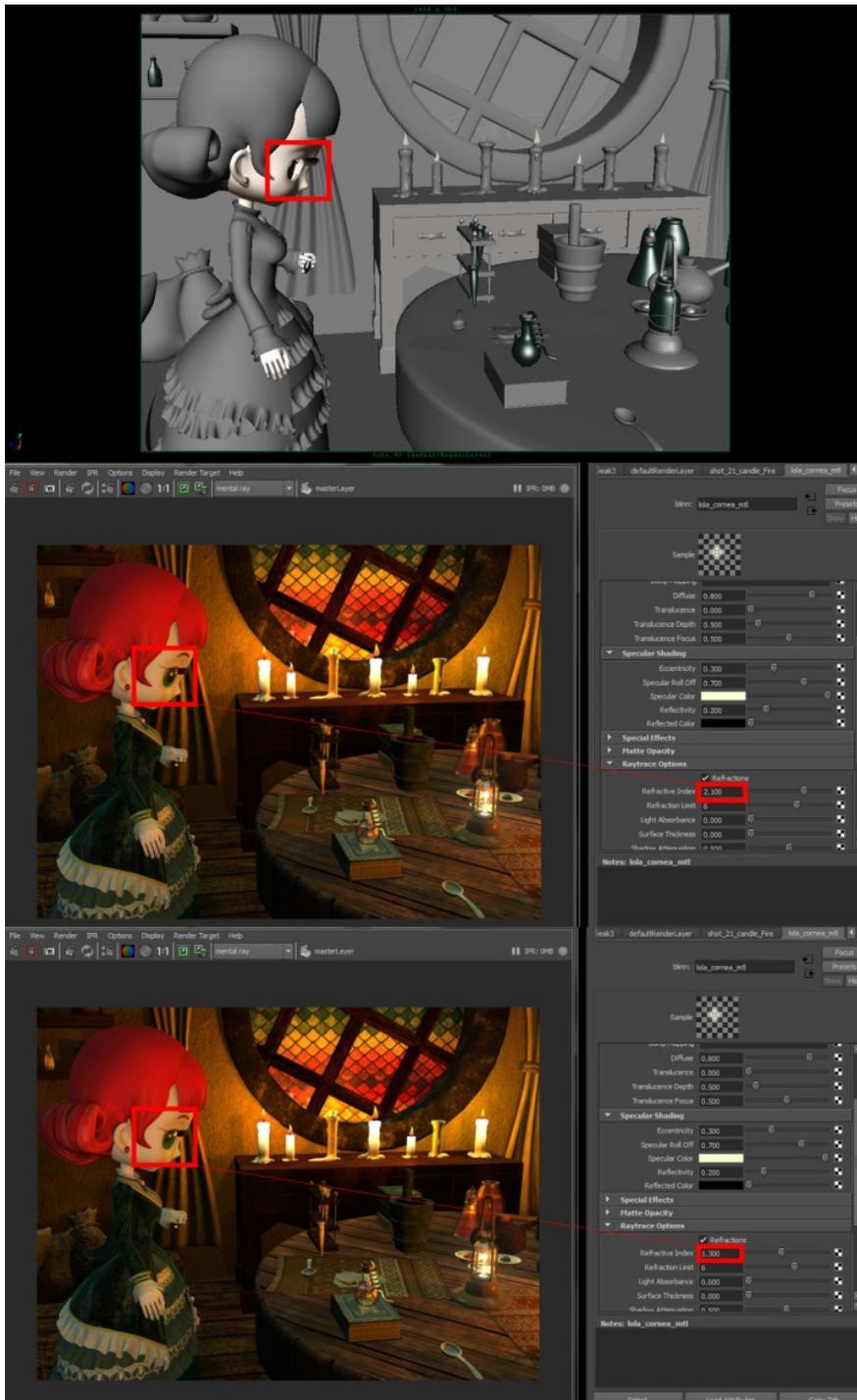
Figure: 61. JianKun Chen. (2013). " *WITCH LOLA eye testing in Maya*". (Screenshot).

2. ALIEN REMO's spaceship exhaust: With MAYA I previously used particle trajectories but as there are now many, as in the spaceship shooting and evading scenes, this does process did not work. As a solution I have used simulation models with the textures and the skeleton skin. This has transformed the cartoon style.
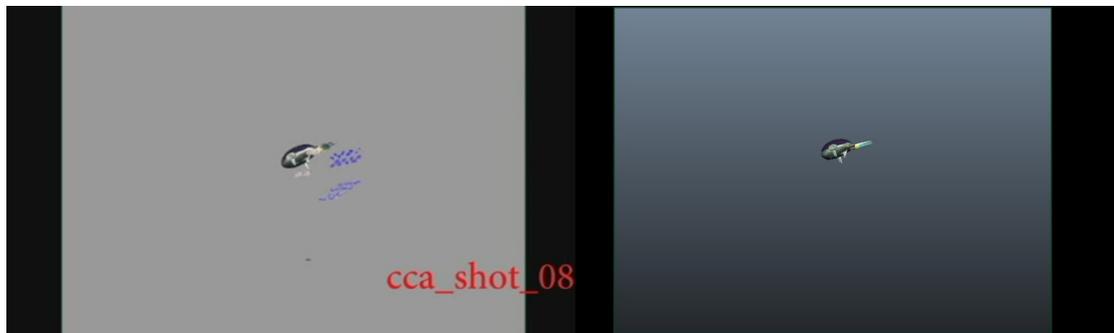
Figure: 62. JianKun Chen. (2013). *"ALIEN REMO spaceship"*. (Screenshot).

3. The fire effect on ALIEN REMO's head; previously has been rich with particle effects but with more fights and chase scenes, using the particle effects dispersion problems occurred and the particles levels were not as rich. So I used a fluid effect to achieve a better result.
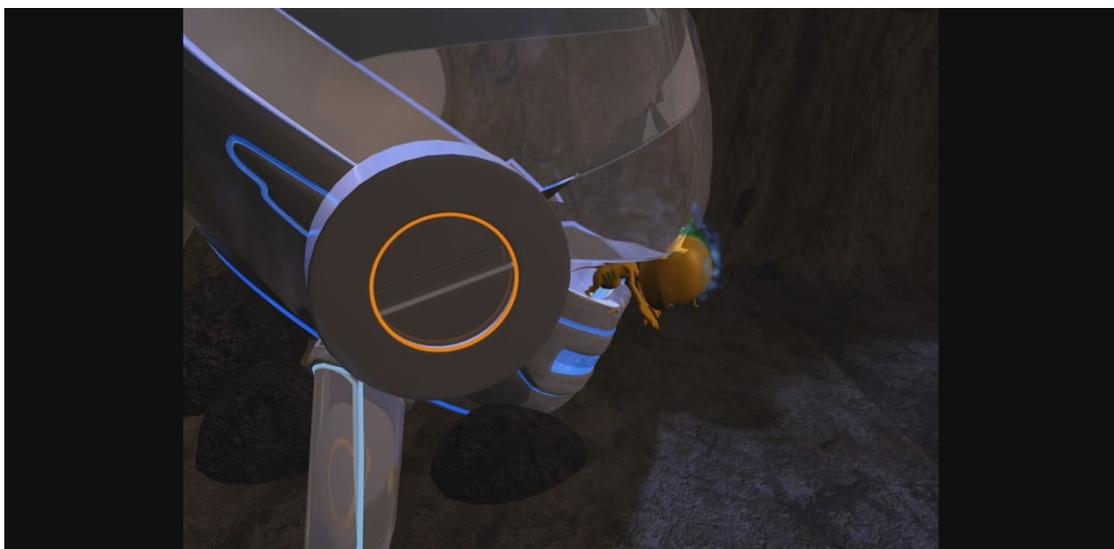
Figure: 63. JianKun Chen. (2013). *" ALIEN REMO getting out of spaceship"*. (Screenshot).

4. Werewolf model: the human type (CAPTAIN KEN) and the werewolf (WOLF) morphology are very different. The wiring does not take into account the performance needs of both. Therefore I created two different models. For the human into the werewolf scene, where the werewolf's head stretches into that of CAPTAIN KEN I have shown the transformation only through the change of the shape of the eye and then into roaring expression of the werewolf.
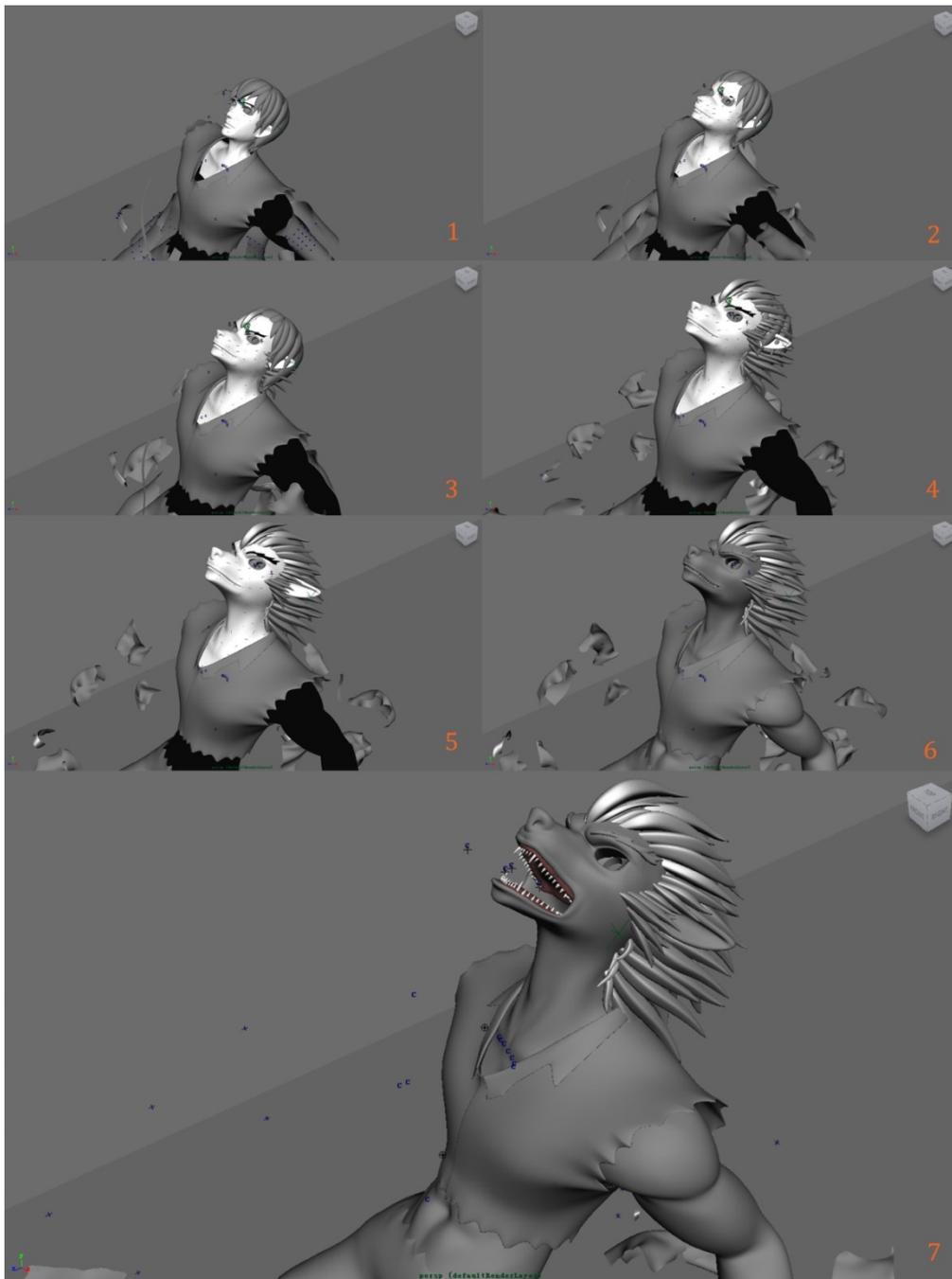
Figure: 64. JianKun Chen. (2013). " *CATAIN KEN's transformation to werewolf*". (Screenshot).

5. Scene 2, the spectacle seen from inside the telescope. In order to create the effect of the lens pulling out the lens is divided into two clips to render the telescope, the telescope glasses and DR. BRUCE's eyes. So in front of the telescope the eye of DR. BRUCE rendering an animated eye close-up, then in the inside using After Effects Software to clip the telescope.

Figure: 65. JianKun Chen. (2013). *"DR BRUCE eye edit "*. (Screenshot).

6. CAPTAIN KEN's motorcycle in night vision, realized haze headlights, the fog lights were originally intended using special effects, but in the actual operation, it was found that the various lighting effects used created major points of difference. Therefore, the model was used to directly add textures to simulate the effects.
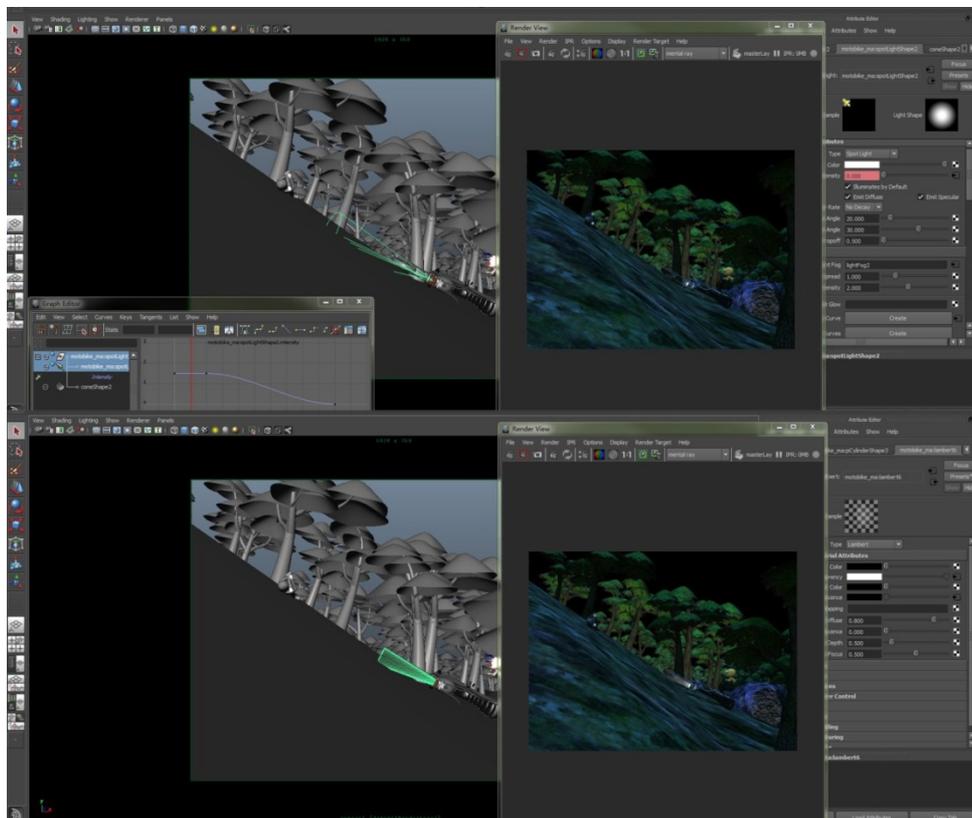
Figure: 66. JianKun Chen. (2013). *"CAPTAIN KEN crashes"*. (Screenshot).

7. WITCH LOLA takes off her long skirt; I used Maya cloth system for this operation, blendshape to create the effect of the dress falling away.

Figure: 67. JianKun Chen. (2013). *"WITCH LOLA hugging ALIEN REMO development in Maya"*. (Screenshot).

8. WITCH LOLA animation when performing combat action her skirt restricts her movement and I needed to accommodate her need for action by stripping the skirt from her legs and freeing up her thighs allowing her to run.

Figure: 68. JianKun Chen. (2013). *"WITCH LOLA skirt action. Development from last year"* (Screenshot).

9. In order to achieve a richer expression DR. BRUCE and WITCH LOLA's heads and faces have been modified and REMO's overall shape has been revised by remodeling.
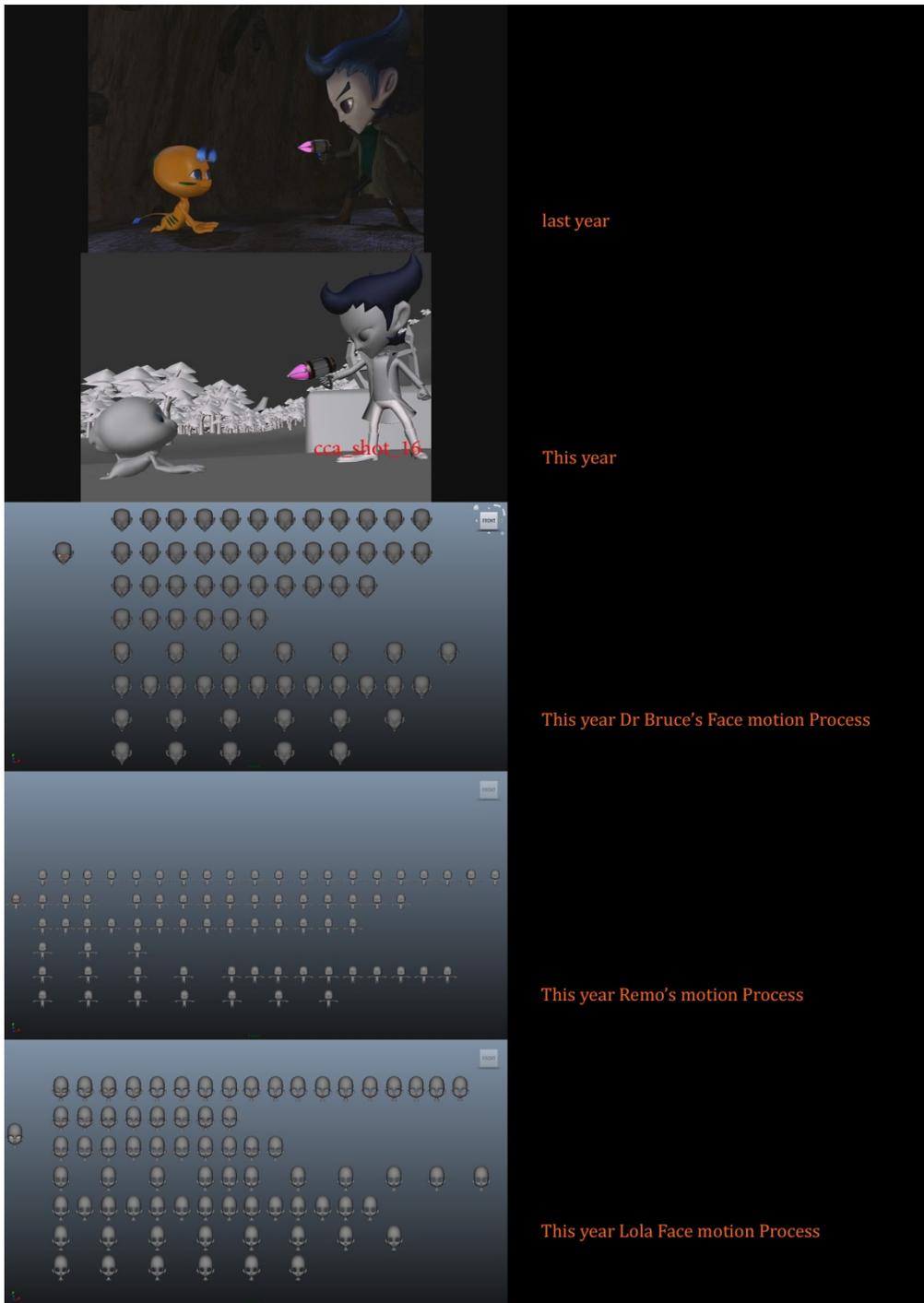
Figure: 69. JianKun Chen. (2013). *"DR BRUCE, WITCH LOLA, ALIEN REMO Development from last year"*. (Screenshot).

10. DR. BRUCE, ALIEN REMO, AND WITCH LOLA were re-introduced into Zbrush, and I have sculptured their faces to characterize the texture of their appearance. This has been rendered out by mapping in Photoshop and using Maya to paste the 3S material.
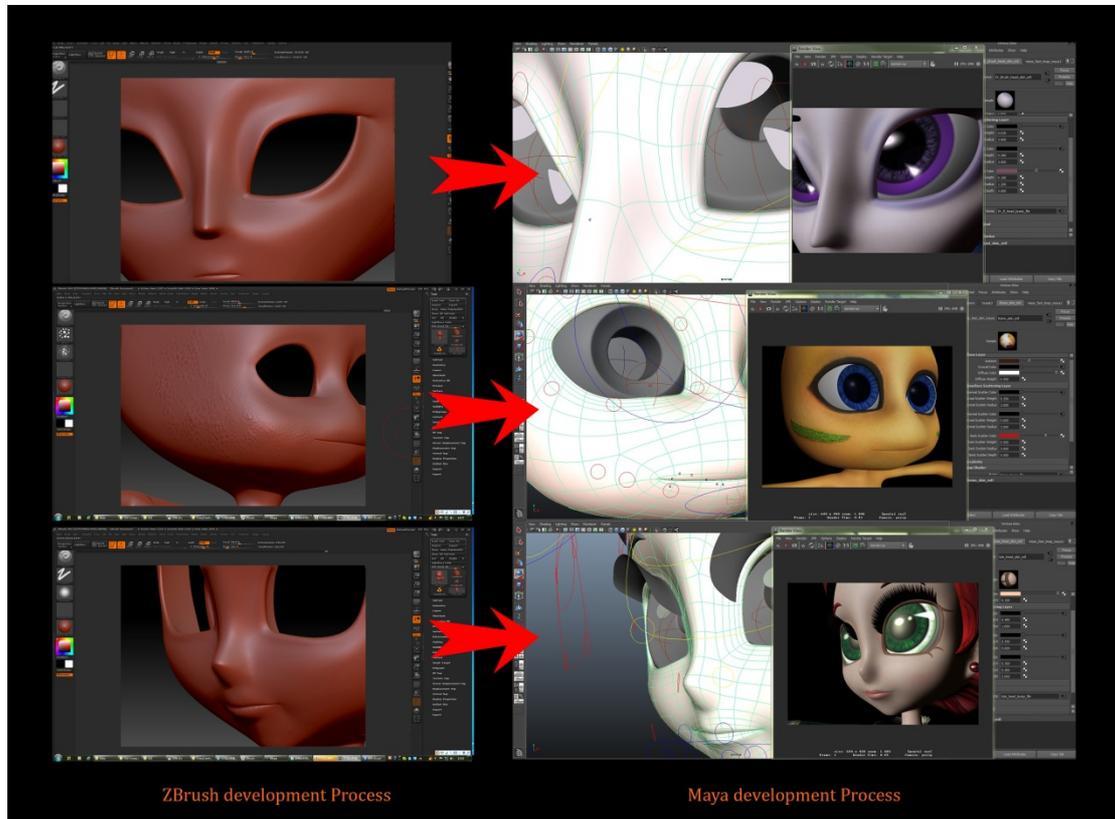
Figure: 70. JianKun Chen. (2013). *"ZBruch and Maya development Process"*. (Screenshot).

11. Werewolf textures have mainly been projection positioned using bodypaint in ZBrush, and then corrected with Photoshop.
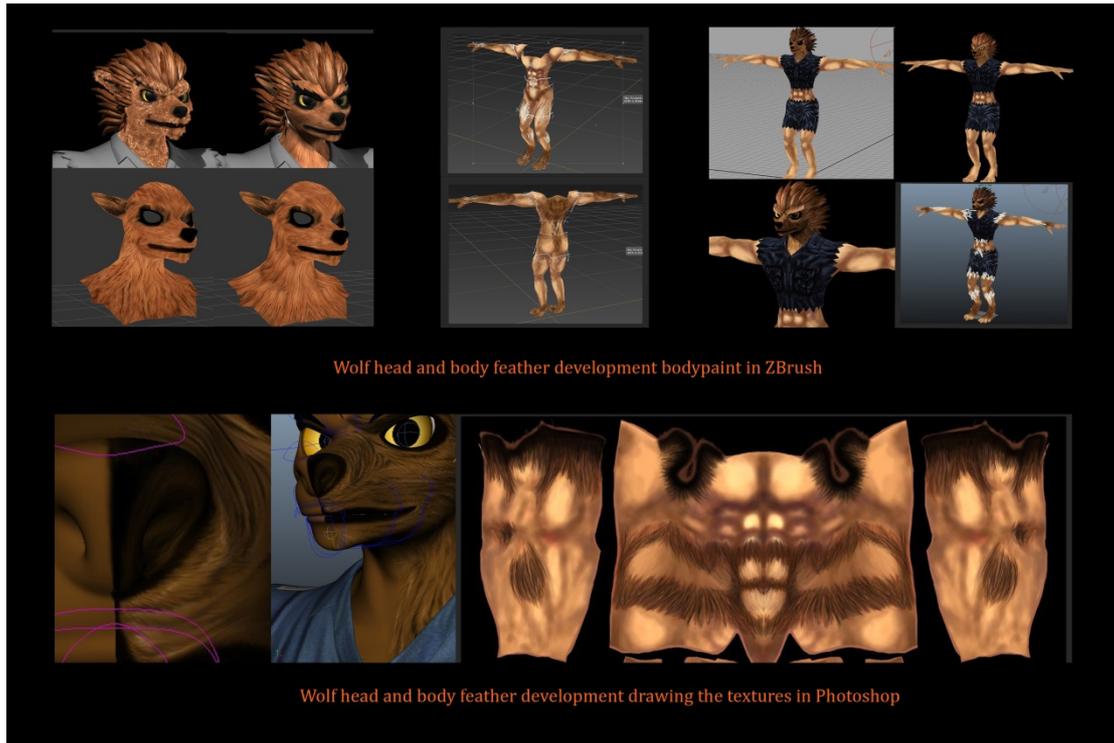
Figure: 71. JianKun Chen. (2013). *"WOLF model development - bodypaint in ZBrush and then drawing the textures in Photoshop"*. (Screenshot).

12. As the story expanded the following sections refinement and in-depth description were reconstructed:

1. In the first scene I have recreated the house so that DR BRUCE runs for longer down the stairs inside the house from the attic to the front door. He then runs from outside the front door towards the spaceship and ALIEN REMO. I have carried out structural adjustment in DR BRUCE's house increasing the indoor settings.

Figure: 72. JianKun Chen. (2013). *"DR BRUCE running from his house"*. (Screenshot).

2. ALIEN REMO's spaceship is hit and crashes in a new setting. Damage to the spaceship tail causes a loss of balance, but not a devastating explosion, so the spacecraft is still able to make a slow landing with ALEIN REMO who falls to the ground on impact. This is different from the previous crash landing.
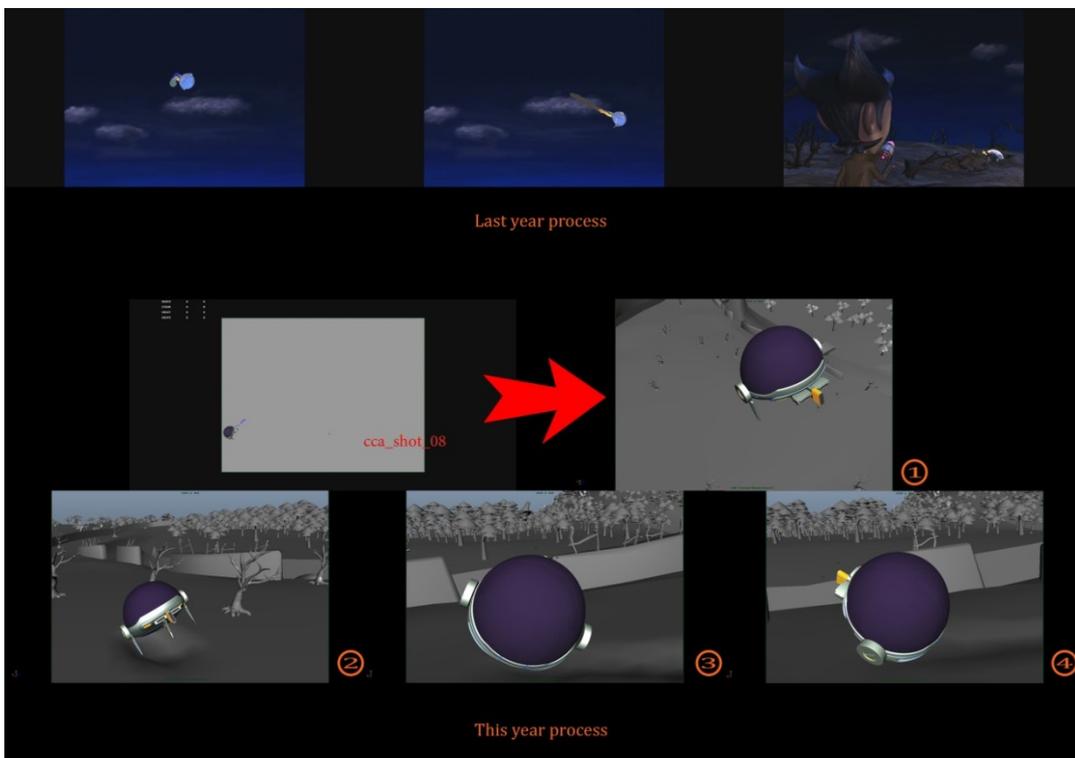
Figure: 73. JianKun Chen. (2013). *"ALEN REMO''s spaceship development process"*. (Screenshot).

3. Previously WITCH LOLA's house is hit by a fireball and the interior explodes. In the reconstruction, the roof crashes down. As DR BRUCE chases ALIEN REMO to intimidate him he only hits the trees or along the ground with the laser gun and does not cause a fireball. The laser shots hit WITCH LOLA's roof which makes WITCH LOLA angry.
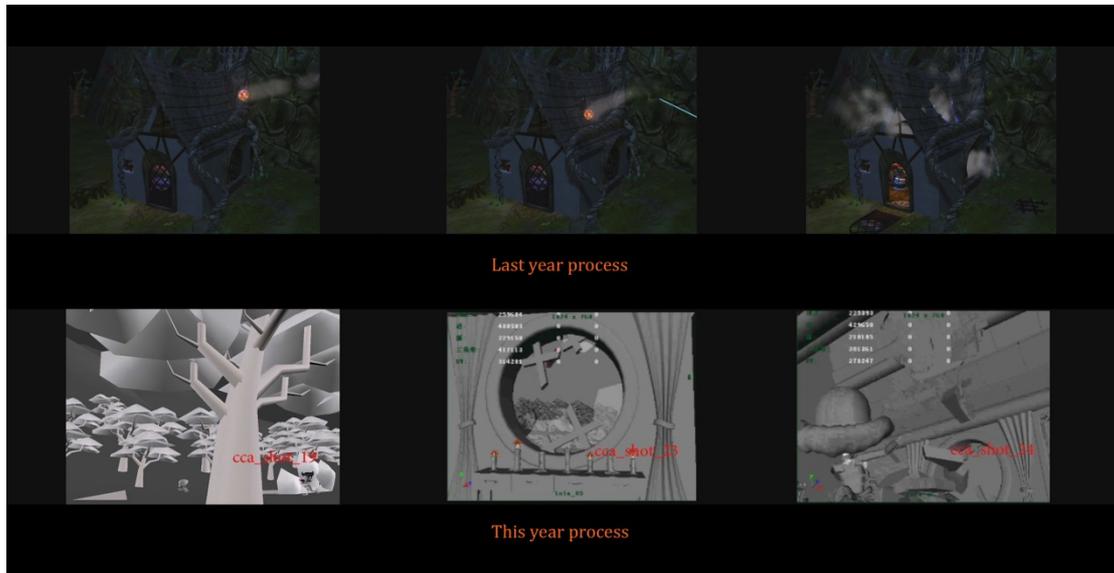
Figure: 74. JianKun Chen. (2013). *"WITCH LOLA's house development process"*. (Screenshot).

Aspects of the game model *–Maya, Photoshop, Unity3D*

1. Due of changes in the animation story in the game environment DR. BRUCE and WITCH LOLA's houses have been rebuilt.

UV Texture Editing for Dr Bruce's game houses

UV Texture Editing for Lola's game houses
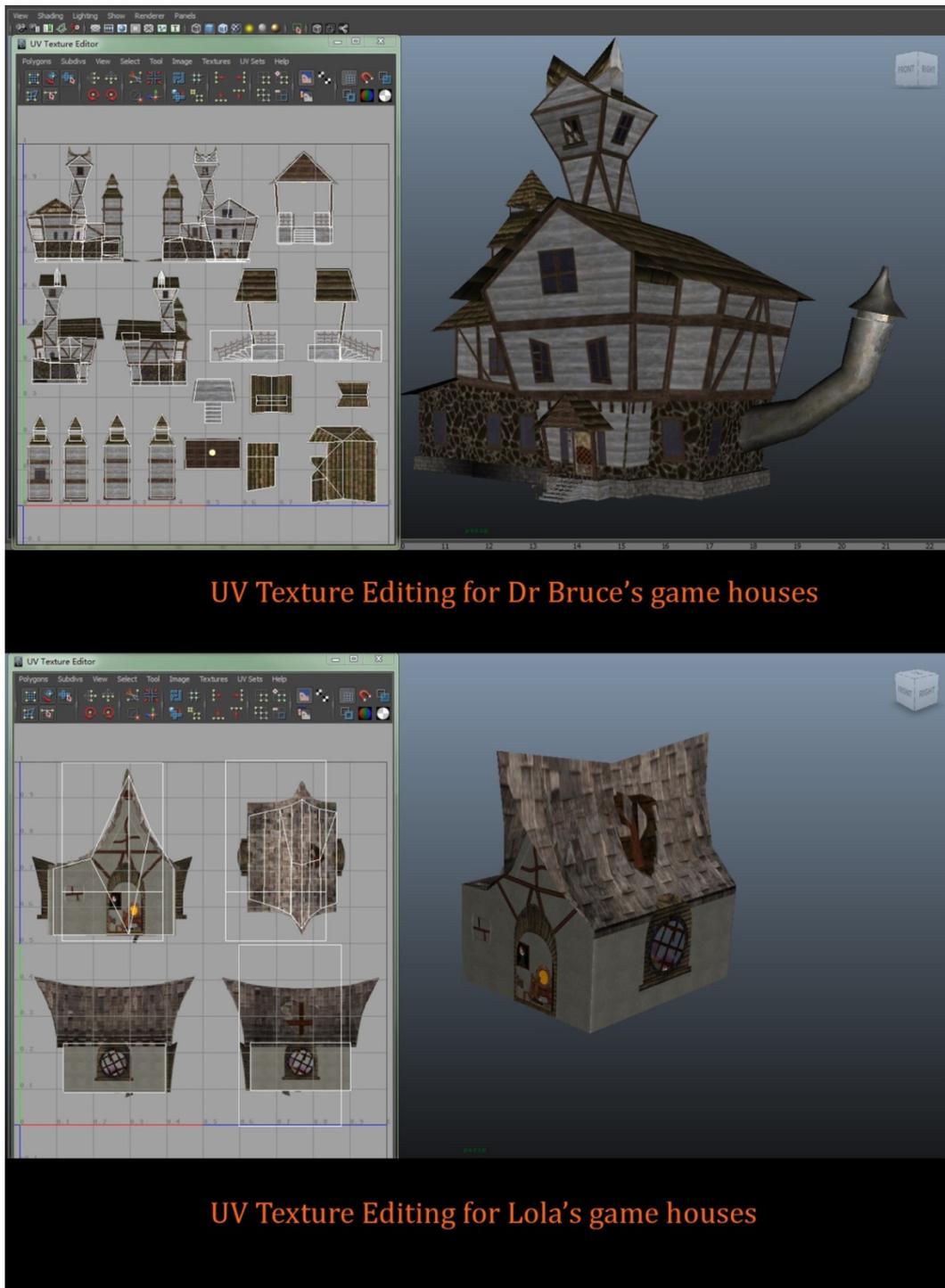
Figure: 75. JianKun Chen. (2013). *DR BRUCE and WITCH LOLA's house UV editing "*.
(Screenshot).

2. In the game modelling proportions were big problems because they did not fit the game characters and scenes as previously resulting in too steep roads, and other roads issues, and the props aspect ratio in Unity3D required retesting and recoding.

Wolf game model in Maya   Wolf game model in Unity 3D

Figure: 76. JianKun Chen. (2013). *"Unity 3D for WOLF game model issues"*. (Screenshot).

Creation and development of game technical processes – *Unity3d, Kinect, Zigfu*

1). Modeling for Unity 3D

The models which are constructed in Maya must be exported to FBX files, otherwise they cannot be used in Unity 3D. However, even when it has been exported to FBX sometimes there are still many problems.
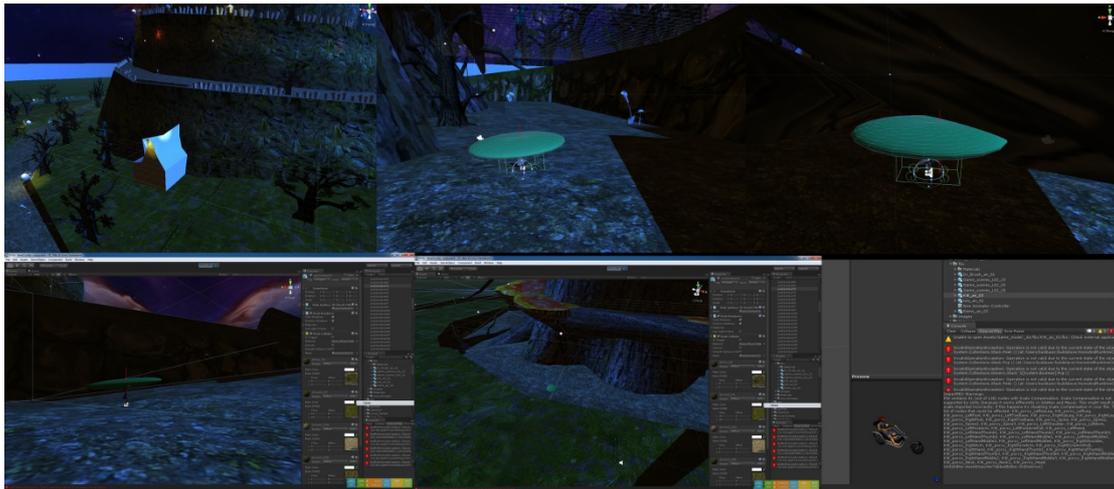
Figure: 77. JianKun Chen. (2013). *"Game model and environment issues"*. (Screenshot).

2). Game control system

Due to the fact that I have added Kinect, a new motion control feature as my game control system, means I have had to make changes in the control system. The main issue is the trigger for each action; turning, braking, speeding up and pausing. Rewriting the control system to use the Kinect functions to trigger the actions should work better than the old control system.

3). Kinect Accuracy

Often Kinect does not have perfect accuracy for joints position mirroring, specifically gesture recognition. This means that I have needed to do the calibration myself. Measurement error leads to lots of noises because of incorrect data; trigonometric functions and math functions. This means I need to make filter modules to help remove the incorrect data.

(PS: Game control system and Kinect Accuracy issues please watch the video clips "Lola Kinect Demo Mp4 File" and "Kinnce 0807 Mp4 Files")

4). Unity 3D new features

In Unity 3D version 4.x the animation system has been updated to Mechanism. This is totally different from the old animation system. Therefore if we want to use the new system we need to modify lots of code.
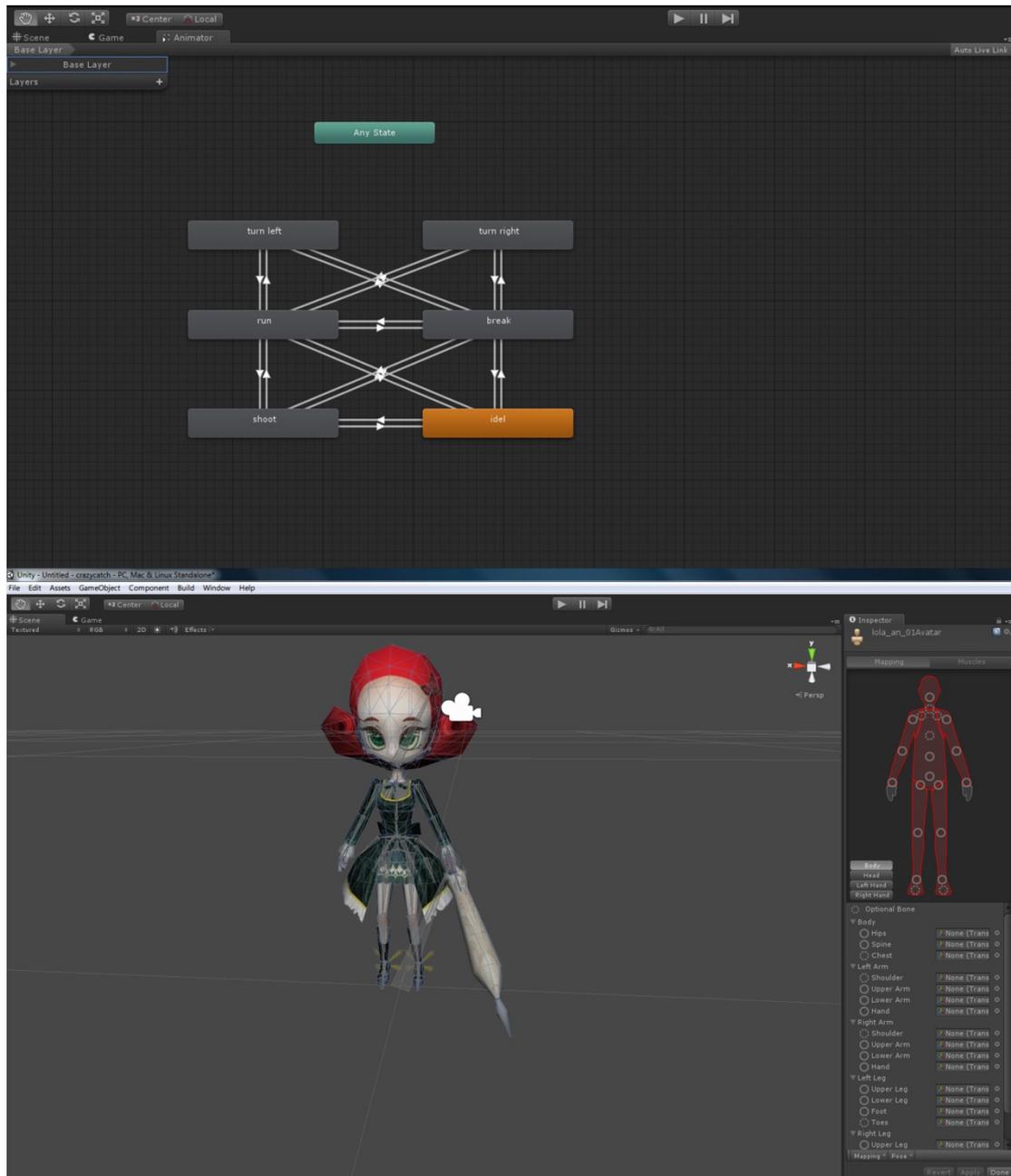
Figure: 78. JianKun Chen. (2013). "Unity3D 4.x the animation system issues". (Screenshot).

5). Because I am still developing the Kinect technology I am still changing the environment in level two.

Conclusion

It is evident that the characters I have developed in my game demo; ALIEN REMO, DR. BRUCE, LOLA and CAPTAIN KEN (WOLF) all now have characteristics, both physical and emotional which portray a "cute" aesthetic and a "Moe" design that players will engage with and enjoy. This, as a design decision I have done in order to develop my game to another level. Players will emotionally connect with them as characters they can identify with. DR BRUCE often acts like a little boy, an endearing characteristic. He gets angry and has tantrums. He sees REMO, who appears to be helpless and in need of nurturing, as a scientific specimen that he wants to capture. The new character CAPTAIN KEN (WOLF) is androgynously handsome and "cute" and although subject to transformation into a werewolf is searching for a long lost family friend, LOLA WITCH, who can supply him with a magical potion that will cure him of this affliction. LOLA WITCH has become a more nurturing and thus a more important character. In developing these two characters; CAPTAIN KEN and LOLA WITCH, playing the game myself and personally exploring my own creative interests has lead me to feel more empowered as a female gamer.

I have researched and further developed coding that has enabled me to develop a new animation trailer that expands, through emotional connection, my games appeal. I have also developed my identified expansive and nurturing modes so that both modes are accessible. In *Rules of Play*[123] Katie Salen and Enid Zimmerman identify playability, meaning games that are accessible to novices and hold their interest so that they will make a purchase and approachability as principles which can provide a thorough insightful analysis of a game and a way to test player usability. Although not prioritized referencing these aspects of game design has helped me formulate principles of design and chart paths that support my gameplay methods and the design of my game.

In my redesign of the *Crazy Catch* animation and game demo my main points of reference have been Norman[124] and Ngai[125]; Norman for his outline of the ways in which

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[123] Katie Salen, Enid Zimmerman. *Rules of play: Game design fundamentals*. (MIT press, 2004).
[124] Donala A. Norman . *Emotional design: Why we love (or hate) everyday things*. (New York: Basic Books, 2004).
[125] Ngai Sianne. *Our Aesthetic Catagories: Zany, Cute, Interesting*. Cambridge, (MA. Harvard University Press, 2012).

different levels of emotional design can be utilized in all aspects of game design and Ngai for her descriptions and historical information about the development of the "cute" aesthetic. Understanding the ways in which combining a specific design aesthetic with an emotional connection have greatly assisted my focus in designing and building a video game that will appeal to me and that I will engage with.

From a personal point of view when I was younger I did not enjoy playing video games, especially action games. Although I had a habit of watching others play I thought playing them was a waste of time. I grew to like to watch television and cartoon animations and movies; rendered picture books of life's experience from which, through our reactions, our thoughts and feelings, we derive inspiration. It was not until I studied graphic design and later digital design that I gradually understood the difference between film and animation. It was then that I took the initiative to understand and to play video games. Now video game playing is a major part of my life, I have created my own video game *Crazy Catch* and I love to play many types of video games. My intention was to design a game that appeals, one that is entertaining and enjoyable to play. This I think I have achieved through my research into and in my adaptation and use of the "cute" aesthetic and developed further with the "Moe" design principles.

Crazy Catch is a role-play multi-player game. My proposed outcome was to develop a game that is easy to control, and one that enhances the emotional feeling of the game's interactive experience. My research is focused on the importance of both the game experience and the choice of game design. The imagery and emotions/moods that the gameplays highlight in my game *Crazy Catch* are captured in the design and colour of the characters, in their costumes and the environments within which they sit.

My game controller ideas on the use of Kinect technologies as a motion-control system that utilizes hand or body movement as an integrated human game interface technology to enhance and provide the gamer with a more interesting immersive interaction come from *Research in Interactive Design: Proceedings of Virtual Concept* 2005[126], which researches virtual reality and computer technics as applied to the development of interactive design methods. My intention was to develop the Kinect interface for my game *Crazy Catch* as a proof of concept prototype. I have explored ways to further develop my existing game by using game art and design technology that along with

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[126] Xavier Fischer, Coutellier D. *Research in Interactive Design: Proceedings of Virtual Concept* 2005. (Springer, 2006).

innovated human-centred multi-sensorial virtual prototyping will use a new approach to multi-sensorial simulation via these Kinect technologies. I use Kinect components as a methodology with which to present my game and my game animation/trailer and as a way to enhance the gamer's emotional connection and their digital aesthetic experience. Further this acts as an accomplishable template that interweaves both emotions and cognition into the action of the game demo. My original idea was to use the Kinect control on the first game level as a segmented step by step designed experience. This has proved not possible to achieve within the current timeframe. In the interim players can use Kinect controls to choose an operation from the menu page selection. However, the scope and nature of my investigation remains unchanged. I believe that the sense of a virtual reality is enhanced through the use of Kinect technology and that it creates the most immersive and effective game experience. It may not be at the level of the matrix, just yet, but I feel that I am certainly moving in the right direction.

My planning and design of the animation and game has lasted for a period of three years. In that time I have reached the following my understandings and feelings. In my point of view game design is not just about how to create learning, and use flexible software applications. My game is not just about creating visual scenes and a play mechanism which uses the body to operate, it also creates emotional feelings and a sense of connection so that in-game characters, scenes, and events resonate with the player.

I have learned from gaming theory, and its application, a variety of historical, natural characteristics and have been inspired by a wide range of design elements. Often theoretical and academic design theories can be difficult to analyze. In my research into the theory and design of a game and its continued improvement, to include specific nurturing emotional experiences allowing players to choose their favorites game characters, has enabled me to redevelop and expand my game's story narrative and to create a new animated trailer that showcases that narrative and game designs.

Appendix 1 –

Animation, game design and ideas planning (8/08/2013)

1) Design Ken's motorcycle. Colour design for the motorcycle is dark green, with camouflage patterns. The motorcycle's model is influenced by the designs of Harley-Davidson from 1949-1956. It has two wheels.

2) Modifying Ken's character scale image in Photoshop.

3) Interior design for the Dr Burce's House.

4) Fix and refine all animation character's textures, materials and other incomplete features.

5) Fix and refine the topography for all scenes, as well as the textures and other incomplete features of the plant props.

6) Redesign the storyline, character's postures and camera angles. (Simple Draft)

7) Planning of animation gestures and movements. Possible to combine traditional key frame animation techniques with motion capture.

8) Refine and modify the game's environment terrain, race tracks, and props. (Design and create any new props as needed.)

9) Apply textures to animated scenes, modifying as needed. Add new particle effects to each individual character's special attacks.

10) Game interface design. Modifying the HUD (head up display) to a circular design for the convenience of game testing using Kinect.

11) Start animating scenes. Start game audio production. Start rendering any completed scenes.

12) Animation post-production.

The points listed above cover three month's work. Animation should be completed by mid-November.

Game control system:

1) Refine the game menu. Modify and overhaul the concept system of the basic game controls.

2) After achieving smooth game controls and game play refine all in-game items, props, environment sceneries as well as special effects of character attack animations.

3) Design the in-game race track guidance signs and markings.

4) Synchronize all individual character's attacking animations. Conduct character walking/running speed tests.

5) Synchronize all character's attacking animations with Kinect. Test character's walking/running speed with Kinect.

6) Design and produce in-game Mini-map display.

7) Design the UI layout for character's health points. Fix and refine in-game sound effects' system programming.

8) Modify the UI layout. Conduct tests of the new UI menu with Kinect.

The points listed above covers the completion of the basic UI layouts, as well as the completion of the programming of Kinect controls for the game.

Optimization of game design, after the game is playable using Kinect controls.

1) Main idea is to combine the ideas of both racing and shooting games, and to find a winning condition that best fits the concept.

    a) Time calculation, whoever reaches the finishing line first wins the game?

    b) Laps calculation, whoever finishes the number of required laps first wins the game?

    c) Health points system, whoever destroys all other players in the game wins as the last man standing?

2) Modify and refine the goals and win conditions of the game. Design priorities single player mode, followed by multi-player mode.

The amount of modifications done to game play designs depends on the progress of the overall workloads.

Appendix 2 –

1. WEATHER SHOT – DR. BRUCE'S PROPERTY.

2. TELESCOPE EXTREME CLOSE-UP SHOT – DIRECTLY TO DR. B'S RIGHT EYE

> INT. CAMERA PANS OUT – A DORMER THAT CAN SEE DR BRUCE LOOKING OUTSIDE

> CAMERA TILTS TO THE SIDE OF THE WINDOW

> Dr. Bruce runs forward in the telescope direction.

3. Dr. Bruce opens the window and looks outside revealing a surprise-like look.

4. OVER-THE SHOULDER SHOT - INT. BACK OF DR. BRUCE'S SHOULDER

> Remo is seen playing in the spaceship as it flies across the camera.

5. Dr. Bruce stared and confirmed the direction the spaceship flew in. He ran to his right, leaving the camera angle.

6. TRACKING SHOT

> Dr. Bruce rushes down the stairs.

7. Dr. Bruce rushes to two different rooms looking for something.

8. Dr. Bruce pulls out a laser gun.

9. EXT. DR. BRUCE'S FRONT DOOR

Dr. Bruce stomps out from his front door, looking up to the sky. He starts shooting laser beams to the sky.

10. WIDE SHOT – FLYING ACROSS THE SKY.

Remo tries to escape being shot at by lasers, unfortunately unsuccessful.

11. Remo's spaceship gets hit and begins to fall down onto Dr. Bruce's front lawn.

12. CUTAWAY SHOT

Witch Lola goes to her window and peaks out. She does not see anything special so she goes back inside and continues to cook.

13. CLOSE-UP SHOT – DR. BRUCE'S FACE

Dr. Bruce is very impressed "uu! Shu~~~" he says, and runs out of the camera shot.

14. Dr. Bruce runs towards the direction where the spaceship landed. He then sneaks from tree to tree.

15. MID SHOT OF REMO

Remo climbs out of his spaceship and begins to crawl forward on the ground.

16. EXTREME CLOSE UP OF REMO

Remo slowly raises his head, revealing a frightened expression.

17. REMO POINT-OF-VIEW SHOT (POV)

Remo looks up and sees Dr. Bruce's gun pointed at him.

18. TWO-SHOT – A SHOT OF DR. BURCE'S AND REMO, FRAMED SIMILARLY TO A WIDE SHOT

19. OVER THE SHOULDER SHOT OF DR. BRUCE'S

Remo stands up and runs, Dr. Bruce follows Remo and begins to chase.

20. BIRD EYES VIEW – OVERLOOKING DR BRUCE CHASES REMO AROUND WHILE SHOOTING

Witch Lola looks over to the forest seeing trees falls down and the sound of the laser gun.

21. TRACKING SHOT

Dr. Bruce continues to chase after Remo, who manages to run out of Dr. Bruce's front lawn and into the forest.

22. TRACKING SHOT

While Dr. Bruce continues to chase and shoot Remo, he manages to shoot down some branches.

23. INT. LOLA'S HOUSE

Lola fills a test tube with liquid from the pot. Then she walks to the table, and picks up pebbles.

24. CUT IN SHOT

Lola places the pebbles into the test tube; the pebbles create a bubbling effect and the liquid changes colour.

CAMERA PANS OUT

Lola grins as she has fulfilled herself. Right at that moment Lola hears some glass smashing; Lola is shocked and looks towards the window.

TRACKING SHOT

Lola sees that one of the window is broken.

She does not see anything special so she heads back inside and continues to cook.

25. OVER-THE-SHOULDER SHOT – LOLA'S SHOULDER

Lola looks out to the window and a shot of light flies past; some tiles begin to fall down. Lola looks up and sees that her house has been hit again. She quickly covers her head to avoid being hit.

26. EXT. LOLA'S HOUSE PANS INTO A MID SHOT OF LOLA

27. Lola places down the test tube and walks towards her front door.

28. Lola accidently trips.

29. Lola loses her balance and fall forward.

30. Lola stands up and sees her dress is ripped.

31. TRACKING SHOT

Lola was upset. She then tears the dress apart. She takes out her umbrella by saying a spell.

32. Lola forces the vines to split into a path, allowing her to walk towards the forest.

33. EXTREME CLOSE UP – A MOTORCYCLE WHEEL

34. CUT AWAY SHOT

Ken is riding on his motorcycle, he then reaches down into his pocket and pulls out some photos.

35. KEN'S POINT OF VIEW

He looks at the photos he is holding, he then tries to look towards Lola's house and he sees trees begin to fall below the hill. He starts his motorcycle and begins to ride it down the hill.

36. CAMERA PANS OUT

Dr. Bruce shoots at and continues to pursue Remo. Lola stands in front of Dr. Bruce and Remo assuming they are the ones who are causing the trouble. She begins to cast a spell and tries to stop them both. Remo sees what has just happened and becomes more frightened and runs in another direction.

37. TRACKING SHOT

Ken sees an alien running towards him and does not break in time and crashes.

38. CUT AWAY SHOT

Ken stops rolling down the hill while he is holding Remo in his arms. Ken sits up and realizes he is holding Remo. Remo get even more frightened and begins to panic. Remo then accidentally lifts away Ken's hoodie.

39. Ken then sees the moon and is transformed into a werewolf.

40. Remo freaks out and tries to escape from the werewolf's hand.

41. When Wolf has fully transformed into a werewolf, he looks at Remo angrily and throws Remo away from him.

42. Remo is thrown to Lola and they are both knocked back into a tree collapsing down to the ground.

43. Lola puts down Remo and stands up running towards Wolf and they begin their battle.

44. Lola's attack fails and she gets knocked back into the tree. Dr. Bruce runs towards Wolf and tries to shoot him with his laser gun.

45. Wolf manages to dodge all the laser shots. Dr. Bruce tries to use this moment to take him down in close range. Wolf's reaction is very powerful and he manages to avoid Dr. Bruce's counter attack and kicks him away.

46. Remo gets angry and rushes towards Wolf.

47. Remo jumps and tries to counter attack Wolf as well. Wolf stops Remo single handedly.

48. Lola also uses this opportunity to run up to Wolf.

49. Lola tries to jump and Wolf stops this with his other hand.

50. Dr. Bruce slowly stands up and he once again runs up to wolf.

51. While Wolf/Ken is dealing with Remo and Lola, Dr. Bruce manages to knock wolf down on the ground.

52. CLOSE UP SHOT

     All four character's close-up shot.

     They all rush towards each other.

53. All four characters jump up high from the ground showing that the moment of a potential fight is about to begin.

54. BLACK SCREEN – THE END

PS: Script as before amended at the end to matched back to the final production.

Unless otherwise indicated, all images are the property of JianKun Chen.

Animation and Game Environment Maps
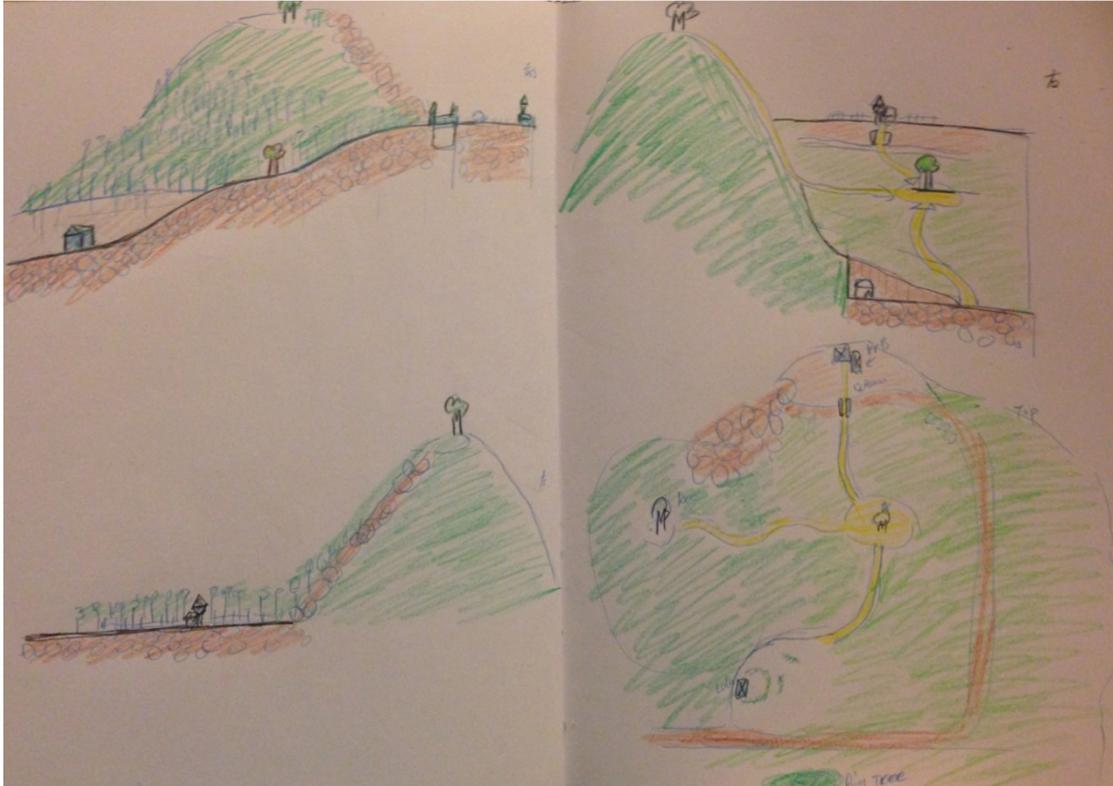
Dr. Bruce's House
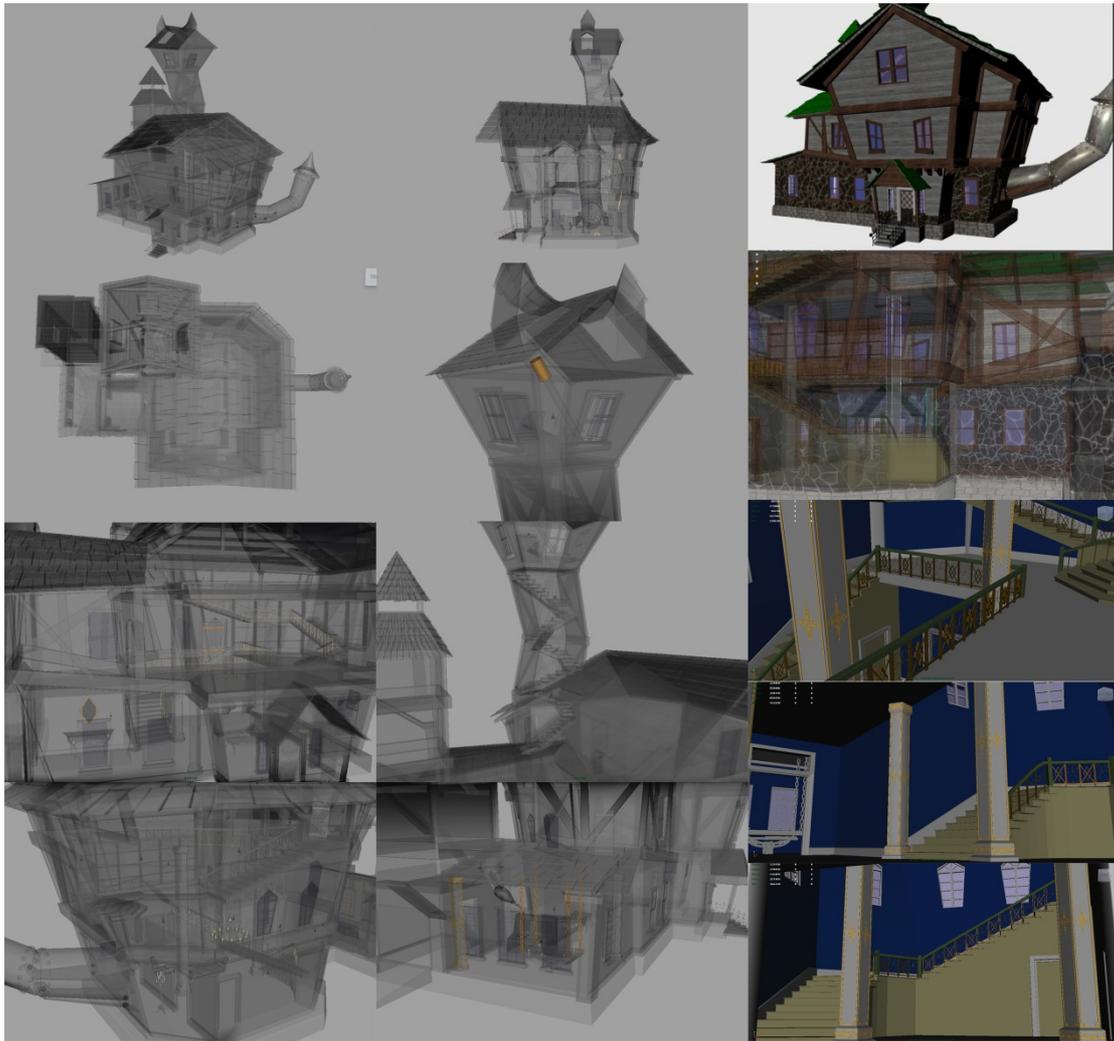
Dr. Bruce's House Furniture's drawn and creates 3D models

Ken Motorbike, Enemy-snake and Star game model
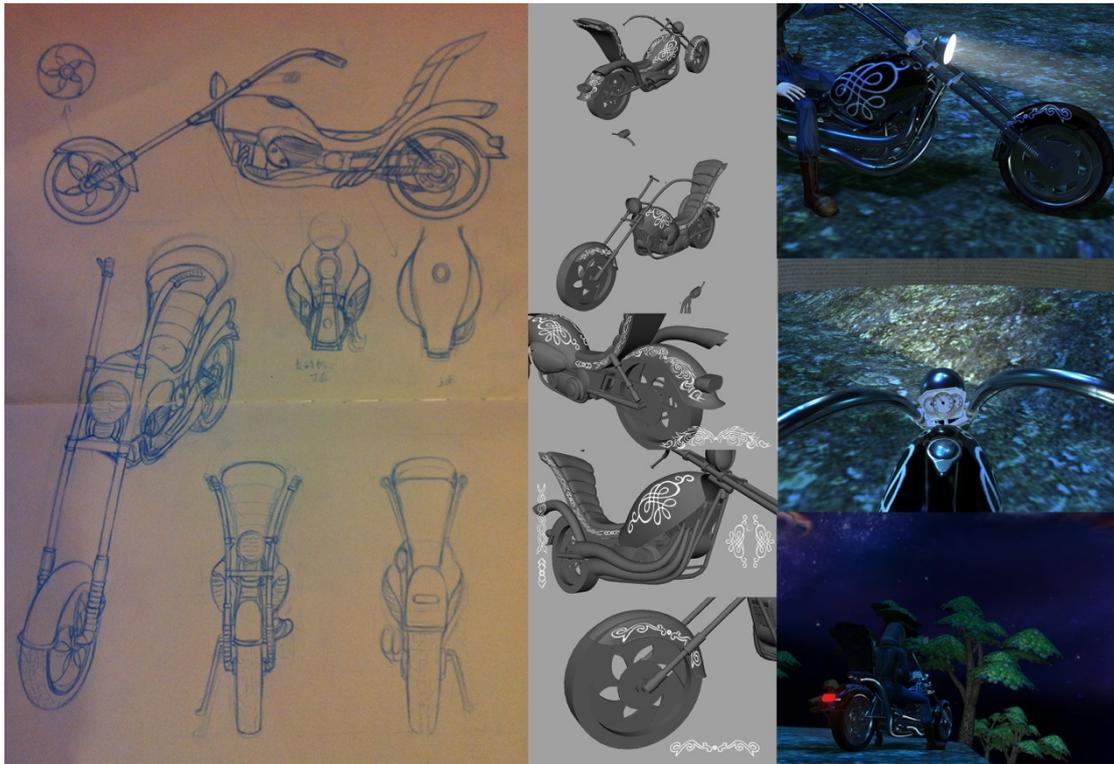
Concept drawing

3D model
and
Pattern design

Final Animation Model

Final Game Model
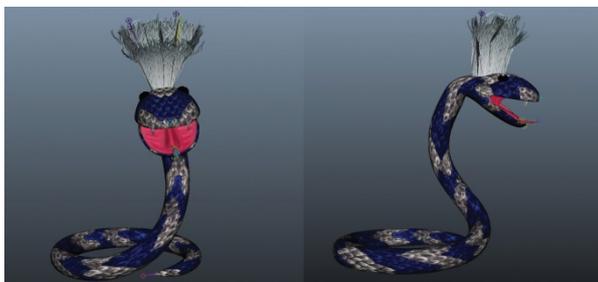
Enemy - Snake modal

Star modal

Reference list

Bernhaupt, Regina. *Evaluating User Experience in Games: Concepts and Methods.* London: Springer-Verla, 2010.

Blade & Soul, *"Blade & Soul Wiki,"* Curse Inc, (2010 - 2011).
http://www.bladeandsouldojo.com/. (accessed June 10, 2013).

Cameron, James. *Avatar,* United States: 20th Century Fox. English. December 18, 2009.

Chen, Jiankun. Crazy Catch: Customizing new narrative and gameplay. AUT, 2012.

Civardi, Giovanni. *The art of drawing book from Drawing Portraits Faces and Figures.* UK, Tunbridge Wells, Kent: Search Press, 2002.

Durham University. *"Attitudes Towards Sexual Relationships Can Be Judged From Photos Of Your Face."* ScienceDaily.
www.sciencedaily.com/releases/2008/04/080408202048.htm (accessed April 16, 2014).

Eden, Dan. *"What Exactly Is "Beauty"?".* viewzone.com.
http://www.viewzone.com/whatisbeauty.html (accessed April 16, 2014).

Elliott, Lee. *"The science of sex appeal, A range of studies brings us closer to finally understanding the mysteries of sexual attraction".* Theguardian.com
http://www.theguardian.com/education/2001/jan/15/highereducation (accessed April 16, 2014).

Favreau, Jon. *Iron Man,* United States: Paramount Pictures. English. May 2, 2008.

Federal Reserve Bank. *"Good-looking people tend to make more money than their plain-Jane counterparts".* CNN Money.
http://money.cnn.com/2005/04/08/news/funny/beautiful_money/#TOP (accessed April 16, 2014).

Fullerton, Tracy, Jacquelyn Ford Morie and Celia Pearce, *"A Game of One's Own: Towards a New Gendered Poetics of Digital Space,"* lcc.gatech.edu,
http://lcc.gatech.edu/~cpearce3/PearcePubs/LudicaDAC07.pdf (accessed March 01, 2012).

Fischer, Xavier, Coutellier D. *Research in Interactive Design: Proceedings of Virtual Concept* 2005. Springer, 2006.

Galloway, Alexander R. *Gaming: Essays on Algorithmic Culture*. Universityof Minnesota Press, 2006.

Graner Ray, Shei. *Gender Inclusive Game Design: Expanding the Market.* Charles River Media Inc., 2004.

Huizinga, Johan. *Homo Ludens: a study of the play element in culture*. Boston, The Beacon Press, 1955.

Huang, Michael. "*Épater L'Otakusie! Meditations on Aku no Hana's Aggressive "Ugliness"* ". Anime Diet. (10 April, 2013): http://animediet.net/reviews/anime-reviews/epater-lotakusie-meditations-on-aku-no-hanas-aggressive-ugliness (accessed November 01, 2013).

IGN, "Magna Carta 2," IGN, 22(October 2009): http://au.ign.com/games/magnacarta-2/xbox-360-773918. (accessed April 23, 2013).

Ingres, Jean Auguste Dominique*. "La Grande Odalisque* 1814". Web Gallery of Art. http://www.wga.hu/frames-e.html?/html/i/ingres/05ingres.html (accessed November 01, 2013).

Jeong, Juno. *Junography – Juno's Illustration Work Collection Book 1998-2010.* (Korea: Viel Books, 2010). 32-35.

JingMing, Guo. *Tiny Times 2.0.* China. Mandarin. August 8, 2013.

Kinect, Micosoft. http://www.xbox.com/en-US/kinect. (accessed November 01, 2013).

Red Riding Hood, common sense media (January 3, 2011): http://www.commonsensemedia.org/movie-reviews/red-riding-hood-0. (accessed June 01, 2013).

Laurel, Brenda. *Design Research: Methods and Perspectives* The MIT Press MA 2003.

Laurel, Brenda. *Computers as Theatre.* 8. MA: Addison-Wesley Publishing Company Inc., 1993.

Laurel, Brenda. *"Why didn't girls play videogames?" TED Conferences* (March 2009) http://blog.ted.com/2009/03/02/why_didnt_girls/ (Accessed March 1, 2013).

Lent, John A. *Themes and Issues in Asian Cartooning: Cute, Cheap, Mad, and Sex.* Bowling Green, OH: Bowling Green State University Popular Press. *1999.*

Levy, Shawn. *Real Steel,* United States: Walt Disney Studios Motion Pictures. English. October 7, 2011.

Lijima, Takashi. *Action Anatomy: For Gamers, Animators, and Digital Artists*. New York: Harper Design, 2005, 102.

Lineage II. "R Grade Hell Armor : Goddess of Destruction Lineage2," Lineage II New, 9(October 2011): http://elliebellynet.blogspot.co.nz/2011/06/r-grade-hell-armor-goddess-of.html. (assessed November 7, 2013).

Mitchell, Richard. *"Fable II game of the year edition for XBOX 360"* joystiq.com. http://www.joystiq.com/2009/08/28/fable-2-game-of-the-year-edition-confirmed/. (accessed June 01, 2013).

Madge, Leila. Capitalizing on "Cuteness" The Aesthetics of Social Relations in a New Postwar Japanese Order. Scribd.com. http://www.scribd.com/doc/102090176/Capitalizing-on-Cuteness-Leila-Madge-JS9-Madge. 155. (accessed June 01, 2013).

McNiff, Jean, Whitehead, Jack. *Action Research: Principles and Practice*. Routledge, 2002.

McVeigh, Brian J. *How Hello Kitty Commodifies the Cute, Cool and Camp: 'Consumutopia versus 'Contral' in Japan* 5:225. The Journal of Material Culture 2000.

Michael Buckwald David Holz. Leapmotion, Leapmotion, Inc. (2010): https://www.leapmotion.com/. (accessed November 01, 2013).

Michelle, *"Blade & Soul AD Kim Hyung Tae Interview Before 2nd CB,"* mmosite.com, 8(November 2011): http://news.mmosite.com/content/2011-08-11/blade_and_soul_ad_kim_hyung_tae_interview_before_2nd_cbt,1.shtml. (assessed November 1, 2013).

Microsoft. *"Bill Gates: Microsoft CEO Summit 2008: The Next Wave of Business Productivity".* Microscft.com. *(*May 14, 2008): http://www.microsoft.com/en-us/news/exec/billg/speeches/2008/05-14ceosummit.aspx. (accessed November 01, 2013).

Mistry, Pranav. *Pranav Mistry: The thrilling potential of SixthSense technology.* TED Conferences, LLC. (November, 2009):

http://www.ted.com/talks/pranav_mistry_the_thrilling_potential_of_sixthsense_technology.html. (accessed November 01, 2013).

Ninagawa, Mika. *"Helter Skelter (Herutā Sukerutā)"*. Japan, Japanese. July 14, 2012.

Nusz, Jeff. *"The V Motion Project"* AssemblyLtd. (April 2012): http://www.assemblyltd.com/work/v-motion-project. (accessed November 01, 2013).

Nusz, Jeff. "*The v motion project part ii*". Custom-logic.com. http://www.custom-logic.com/blog/v-motion-project-part-ii-the-visuals/. (accessed November 01, 2013).

Nusz, Jeff. "*The v motion project - the instrument*". Custom-logic.com. http://www.custom-logic.com/blog/v-motion-project-the-instrument/. (accessed November 01, 2013).

Norman, Donald A, *Emotional design* Part II: Design In practice; Three level of design: Visceral, Behavioral, and Reflective. 21. New York: Basic Books, 2004.

Norman Donald. A. *Emotional design: Why we love (or hate) everyday things*. 21- 24. New York: Basic Books, 2004.

Norman, Donald A. "*The Design of Future Things; CHAPTER THREE: Natural Interaction; Responsive Automation*". Trilemon.com. (November, 2013): http://www.trilemon.com/wp-content/uploads/2013/11/The-Design-of-Future-Things.pdf. (accessed November 01, 2013).

Norman, Donald A. "*The Design of Future Things; CHAPTER SEVEN:The Future of Everyday Things; The Science of Design".* Trilemon.com. (November, 2013): http://www.trilemon.com/wp-content/uploads/2013/11/The-Design-of-Future-Things.pdf. (accessed November 01, 2013).

Okami. *Okami Official Complete works*. (Canado: Udon Entertainment Corp. 2006).

Park, Amy. "Juno Jeong," prezi.com, 7(October 2013): http://prezi.com/ozfsmgrl9b3v/juno-jeong/. (assessed November 1, 2013).

Salen, Katie, Zimmerman, Enid. *Rules of play: Game design fundamentals*. MIT press, 2004.

Sheffield, Brandon. *"The Art Of The Form: Hyung-Tae Kim Speaks"* gamasutra.com, (March 29, 2010) :

http://www.gamasutra.com/view/feature/132698/the_art_of_the_form_hyungtae_kim_ .php?print=1. (accessed April 05, 2013).

Sianne, Ngai. *Our Aesthetic Catagories: Zany, Cute, Interesting*. Cambridge, MA. Harvard University Press, 2012.

Steparu, *"The War of Genesis 4 Online,"* steparu.com, 24(May 2013): http://steparu.com/previews/mmo-rpg-previews/1226-the-war-of-genesis-4. (accessed June 6, 2013).

Taptara, Xia. *"Hyung Tae Kim's Character design tutorial."* idrawgirls.com. (February 6, 2012): http://idrawgirls.com/tutorials/2012/02/06/hyung-tae-kims-character-design-tutorial/. (accessed November 01, 2013).

TED Blog. "*Why didn't girls play videogames? Brenda Laurel on TED.com"*. TED Conferences, LLC. (March 2, 2009): Retrieved from: http://blog.ted.com/2009/03/02/why_didnt_girls/.(accessed March 01, 2012).

Tel Aviv University. *"Computer Taught To Recognize Attractiveness In Women."* ScienceDaily. www.sciencedaily.com/releases/2008/04/080404122139.htm (accessed April 16, 2014).

Thomson, Rosemarie Garland. *Freakery: Cultural Spectacles of the Extraordinary Body,* New York: London, New Yorl University Press. 1996.

Wake Forest University. *"Rating Attractiveness: Consensus Among Men, Not Women, Study Finds."* ScienceDaily. www.sciencedaily.com/releases/2009/06/090626153511.htm (accessed April 16, 2014).

Weston et al. *"Facial attraction and evolution"*. Natural History Museum. http://www.nhm.ac.uk/about-us/news/2007/august/news_12230.html (accessed April 16, 2014).

Will, Ben. *How can I adopt manga-style elements into my portrait art?* 43. UK: ImagineFx. May 2013.

Vartanian, Ivan. "*drop dead cute; the new generation of women artists in Japan* Chicho Aoshima". 32. Chronicle Books. 1997.

ZigFu, Motion Arcade Inc. (2013-2014): http://zigfu.com/. (accessed April 05, 2013).