



UNIVERSITI PUTRA MALAYSIA

**IMPLICATIONS OF GROTESQUE FEATURES OF SCIENTIFIC
CREATIONS IN MARGARET ATWOOD'S SELECTED SPECULATIVE
FICTION**

ONG LI YUAN

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By

ONG LI YUAN

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfillment of the Requirements for the Degree of Master of Arts**

February 2019

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DEDICATION

To my dear parents, siblings, friends, lecturers and fellow postgraduate comrades,

Thank you for your consistent moral support and inspiration,

You are

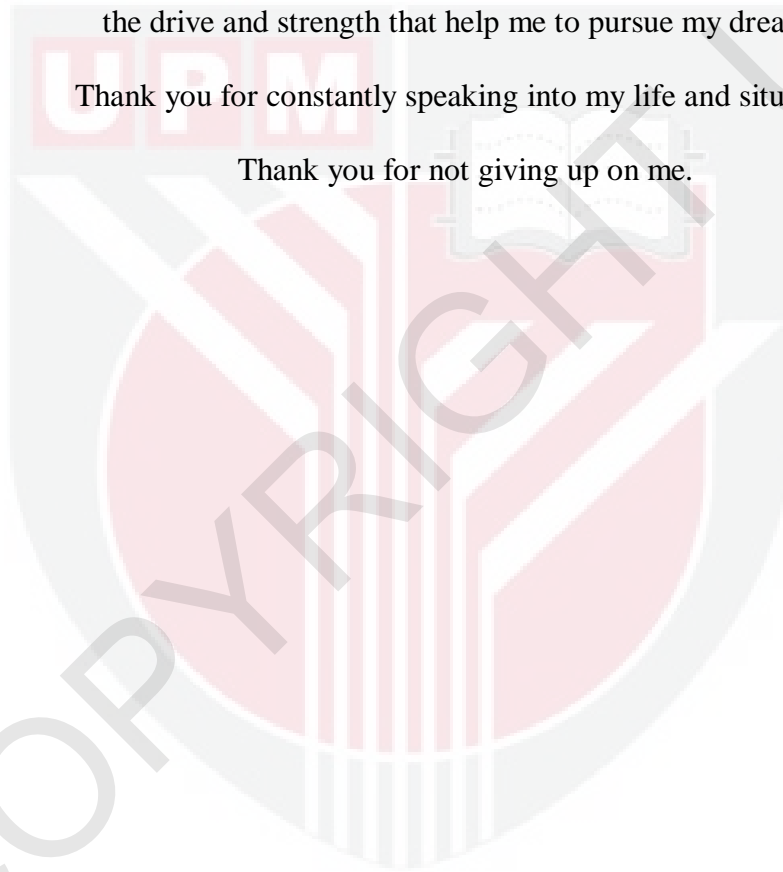
the anchors of my life,

my strong pillars in the middle of the storm,

the drive and strength that help me to pursue my dreams.

Thank you for constantly speaking into my life and situation.

Thank you for not giving up on me.



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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Arts

IMPLICATIONS OF GROTESQUE FEATURES OF SCIENTIFIC CREATIONS IN MARGARET ATWOOD'S SELECTED SPECULATIVE FICTION

By

ONG LI YUAN

February 2019

Chairman : Associate Professor Arbaayah Ali Termizi, PhD
Faculty : Modern Languages and Communication

Speculative fiction is a type of literary fictions, which consists of future speculations of the socio-political issues and set in a believable alternate setting. These speculations consist of exaggerating and hyperbolic features and patterns that induce fear, and uncertainties, and nauseating situation to the readers. Margaret Atwood's *MaddAddam* trilogy is such example, which portrays grotesque posthuman future, as the human survivors are no longer amazed by the scientific inventions. As they are no longer relying on the scientific inventions, they realise they have unknowingly accepted some of the inventions as normalcy or social norms. Atwood has cleverly demonstrated these conditions through a few examples of genetically modified animals and modern medications, which raised a sense of discomfort and uncanny among the characters. The study intends to examine the grotesque nature of the genetically modified animals and modern medications in Margaret Atwood's *MaddAddam* trilogy, via the conceptual framework of the grotesque proposed by Justin D. Edwards and Rune Graulund. In this study, the analysis employs two concepts, which are the concepts of the uncanny and monstrosity to study *MaddAddam* trilogy, especially *Oryx and Crake*, *The Year of the Flood* and *MaddAddam*. These three texts are analysed in order to highlight the grotesque features of the scientific creations and the characters' responses towards these creations. The analysis and discussion show that there is a number of physical features and functions that cause the characters to feel fearful and repulsed of them in Atwood's *MaddAddam* trilogy. Based on the conceptual framework of the grotesque, the concepts of the uncanny and monstrosity show the physicality of the scientific creations, which formed exaggeration, gruesome and monstrous features. As a result, this causes the characters and readers to experience disorientation towards the grotesque nature of the scientific creations due to the unfamiliar state of savagery in their social norms. The monstrosity of the creations is portrayed based on the violation of traditional binary oppositions, such as familiar and unfamiliar, human and non-human, culture and savagery as well as attraction and

repulsion. In conclusion, this study can increase the significance of the study by noting the grotesque realism of physical body and the acceptance of the grotesque realities of man's imperfect material life due to the awareness of the impossibility of awareness.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sastera

IMPLIKASI CIRI-CIRI GROTEKS DARI CIPTAAN SAINTIFIK DALAM FIKSYEN SPEKULASI MARGARET ATWOOD

Oleh

ONG LI YUAN

Februari 2019

Pengerusi : Profesor Madya Arbaayah Ali Termizi, PhD
Fakulti : Bahasa Moden dan Komunikasi

Fiksiyen spekulatif adalah sejenis fiksyen sastera, yang terdiri daripada spekulasi masa depan isu-isu sosio-politik, yang ditetapkan dalam latar tempat alternatif yang boleh dipercayai. Spekulasi-spekulasi ini biasanya digambarkan dengan cara-cara yang berlebihan dan hiperbola, untuk menimbulkan ketakutan dan ketidakpastian, serta menggunakan keadaan yang mengganggu pembaca. Trilogi Margaret Atwood yang berjudul *MaddAddam* telah menggambarkan masa depan pasca-kemanusiaan yang melampau, di mana mangsa-mangsa yang terselamat tidak lagi kagum dengan ciptaan sains. Apabila mereka tidak lagi bergantung pada ciptaan-ciptaan saintifik, mereka menyedari bahawa mereka tidak lagi menerima sebahagian daripada ciptaan saintifik sebagai normal ataupun norma sosial. Dengan kebijaksanaan Atwood, beliau telah memperlihatkan beberapa contoh haiwan yang diubahsuai secara genetik dan ubat-ubatan moden, yang menimbulkan rasa tidak selesa dan tidak semestinya dalam kalangan watak-watak. Kajian ini bertujuan untuk mengkaji sifat-sifat grotes dari haiwan-haiwan yang diubahsuai secara genetik dan ubat-ubatan moden di trilogi Margaret Atwood, iaitu *MaddAddam*, menerusi rangka kerja konseptual grotes dari Justin D. Edwards dan Rune Graulund. Dalam kajian ini, analisis tersebut menggunakan dua konsep, iaitu konsep “uncanny” dan “monstrosity” untuk meneliti trilogi *MaddAddam*, iaitu *Oryx and Crake*, *The Year of the Flood* dan *MaddAddam*. Ketiga-tiga teks ini dianalisis untuk menyorot ciri-ciri grotes yang dikenal pasti pada ciptaan saintifik dan maklum balas karakter terhadap ciptaan ini. Analisis dan perbincangan menunjukkan bahawa terdapat beberapa ciri dan fungsi fizikal yang menyebabkan watak-watak merasa takut dan jijik akan ciptaan saintifik dalam trilogi *MaddAddam*. Berdasarkan kerangka konseptual teori grotes, kedua-dua konsep “uncanny” dan “monstrosity” menunjukkan ciri-ciri fizikal ciptaan saintifik membentuk sifat keterlaluan, ciri-ciri yang mengerikan dan mengejutkan. Akibatnya, watak-watak dan pembaca mengalami ketidakpuasan terhadap sifat ciptaan saintifik yang disebabkan oleh keadaan kebencian yang tidak dikenali dalam norma sosial mereka. Ciri-ciri “monstrosity” yang terdapat pada ciptaan itu digambarkan

berdasarkan penyesuaian biasa dan luar biasa, kemanusiaan dan ketidakmanusiaan, keburukan dan kebudayaan serta penolakan dan tarikan. Secara kesimpulannya, kajian tesis ini meningkatkan kepentingan kajian dengan mengkaitkan dengan *grotesque realism of physical body* dan tahap penerimaan realiti grotesks konsep material manusia yang tidak sempurna, terutamanya sifat kewujudan grotesks akibat kesedaran mengenai kemustahilan kesedaran.



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This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Master of Arts .The members of the Supervisory Committee were as follows:

Arbaayah Ali Termizi, PhD

Associate Professor

Faculty of Modern Languages and Communication

Universiti Putra Malaysia

(Chairman)

Rosli Talif, PhD

Associate Professor

Faculty of Modern Languages and Communication

Universiti Putra Malaysia

(Member)

ROBIAH BINTI YUNUS, PhD

Professor and Dean

School of Graduate Studies

Universiti Putra Malaysia

Date:

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Signature: _____

Name of Chairman
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Committee:

Associate Professor Dr. Arbaayah Ali Termizi

Signature: _____

Name of Member
of Supervisory
Committee:

Associate Professor Dr. Rosli Talif

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CHAPTER 1

INTRODUCTION

1.1 Preamble

The introduction of this thesis includes the statement of the problem, justification of the selected texts, research objectives, and questions, research methodology, as well as the scope and limitation of the study. This chapter concludes with the significance of the study and the structure of the thesis as well as the definition of key terms, which determines the literature review, methodology as well as analysis of the present study.

1.2 Background of the Study

Speculative fiction is a category of literary fiction, which engages with “supernatural, futuristic, or imagined elements” to form future speculations of the replicated world¹. Originally, Robert Anson Heinlein coined spec. fiction as “science fiction”², which omitted fantasy, and focuses on “sociology, psychology esoteric, aspect of biology, impact of terrestrial culture on other cultures” of the setting in literary texts and socio-political issues (Heinlein, *The Saturday Evening Post* 152; *Grumbles of Grave* 49). For instance, literary texts like *More Than Human* (1953) by Theodore Sturgeon, *Childhood’s End* (1953) by Arthur C. Clarke, *Starship Troopers* (1959) and *Stranger in a Strange Land* (1963) by Robert Anson Heinlein, pointed out the importance of humanity, especially American liberty, instead of the implications of science and technology towards humanity (Oziewicz, *Speculative Fiction* 5; Robert, *Science Fiction* 293). However, Heinlein’s definition of spec. fiction raised numerous debates which SF scholars claimed his term was rather narrow and limited, which restricted the characteristics of SF, morally “unambiguous” and “didactic”, especially the sociopolitical issues and “oppressive status quo” in the patriarchal society (Oziewicz 5-6). As a result, Heinlein’s definition of spec. fiction was disused and replaced with hard SFs among fellow science fiction writers, which later consisted of three main genres like “fantasy, horror and another non-mimetic genre” (5-6).

In late 1960 until the 1970s, the SF writers contested the traditional SF and wrote pulp SFs, which “produce avant-garde, radical or fractured SF” during the New Wave Era (Robert, *Science Fiction* 334). For instance, Heinlein’s *Stranger* is an “avant-garde” SF as its religious and cultural contexts of drug addictions and sex exploitations among youngsters (337). This blurs the boundary between traditional SF and “fantasy fan-base” fiction (Thomas, *Science Fiction and Speculative Fiction* 25). This era also

¹ “Speculative Fiction”, *English Oxford Living Dictionary: British & World English*, Accessed 17 April 2018, <https://en.oxforddictionaries.com/definition/speculative_fiction>

² The term “speculative fiction” will be therefore referred as spec. fiction. The abbreviation “SF” denotes “science fiction”, not to be confused with “speculative fiction” (Thomas, *Science Fiction and Speculative Fiction*, 2013).

developed SFs, such as, into mass media such as “visual media, TV and film” (25). During the same era, female spec. fiction writers like Angela Carter, Carol Emshwiller, Judith Merril, Jewelle Gomez, Kate Wilhelm, Octavia E. Butler, Suzy McKee Charnas, and Ursula Le Guin, readapted the definition of spec. fictions as soft SFs during the New Wave Radical Feminist era (Oziewicz, *Speculative Fiction* 11). Soft SFs highlighted the social conditions based on feminist point of view and challenged the restrictions of patriarchal society and male-dominated linguistic writing styles, especially the “dominant status and its androcentric biases”, which eventually led to gender equality (11).

In *The Magazine of Fantasy and Science Fiction*, Canadian-American anthologist, literary scholar and critic, Judith Merril indicated spec. fiction was considered an “accurate generic marker” compared to SF during the New Wave movement from the 1960s until 1970s (Milner, *Does Speculative Fiction Exist*, July 2015). The Toronto Public Library archives and re-coins her literary texts as spec. fiction, which consists of “certain aspects of fantasy fiction satire, surrealist, and other speculative, future-oriented and conceptually experimental work in various literary studies”³. Besides Merril, scholars like Robert Scholes noted that spec. fiction consisted of “three forms of fabulation across several genres and forms time-consciousness” based on historical contexts and ideology in *Structural Fabulation: An Essay on the Fiction of the Future* (1975) (Oziewicz 12-3).

In the 20th until the late twentieth century, few scholars developed the definition of the spec. fiction. Noel Gough introduced spec. fiction as a different literary genre, which is different from SF, as it portrays social reality and the reflection of the “present world” (*Speculative Fiction* 11). The readers are able to deduce “what if” and be aware of the warnings, “moral exhortation” and “didactic instruction” towards environmental issues by the authors (Gough 11). For example, Rachel Carson’s *Silent Spring* (1962) and Frank Herbert’s *Dune* (1965) debate about the importance of environmental awareness, the implications of environmental pollutions and pesticides, and humans’ responsibilities in taking care of the environment in both political and educational level.

On the other hand, Heather Urbanski, Brian Attebery, Paul L. Thomas, and R.B. Gill studied spec. fiction as a genre. Heather Urbanski claimed that spec. fictions comprised of “cautionary tales” of nightmarish future and “terror of science and technology” towards humanity, especially the effects of war and nuclear bomb (*Plagues xvii-xviii*; 25). Brian Attebery pointed out that spec. fiction is a genre that has “a fuzzy set field of cultural production” and accommodated various literary subgenres to form a multicultural and realistic perception of the reality to the readers (7-9). On the other hand, Thomas and Gill discussed the application of spec. fiction in

³ Merril, Judith. “Agreement between Judith Merril and the Board of the Toronto Public Library, in “History of the Merril Collection,” 2018. Accessed 25 May 2018, <<https://www.torontopubliclibrary.ca/merril/history.jsp>>

mass media and other literary subgenres (*Science Fiction and Speculative Fiction; The Uses of Genres*).

In later studies, Carl Termini and Marek C. Oziewicz discuss the implementation of spec. fiction among students and young adults in pedagogical contexts (*The Bent Mirror*, 2015; *Justice*, 2015). Both scholars agree that spec. fiction enables both students and young audiences to enhance their critical thinking, especially determining the cause and effect of sociopolitical issues and predict the future social conditions (Termini, *The Bent Mirror*, 2015; Oziewicz, *Justice*, 2015). In *Justice in Young Adult Speculative Fiction: A Cognitive Reading* (2015), Marek C. Oziewicz proposes that spec. fiction used “derivatives of fantasy and SF or hybrids” to show the importance of “social and global justice”⁴ among young adults, especially in the field of education (15-7). Besides social justice, spec. fiction helps the young adult readers to think critically about the effects of science and technology, current socio-political conditions as well as environmental concerns towards humanity (Oziewicz, *Justice*, 2015).

Marek C. Oziewicz points out two main approaches of spec. fiction. Firstly, spec. fiction allows the reader to question the standard of the real world and “challenges materialist complacency that nothing exists beyond the phenomenal world” (Oziewicz, *Speculative Fiction* 22). It imitates the reality using various “non-mimetic genres” such as fantasy, SF and horror (2). These three main genres are combined with other “derivative, hybrids and cognate genres” like “gothic, utopia and dystopia, mythical and supernatural entities, apocalyptic and post-apocalyptic genre, strange fiction, superheroes and supervillains, alternative histories and fairy tales, steampunk, slipstream, and magical realism” (2). However, spec. fiction is not only a type of literary genre but also a “global literary landscape” which ables to “dismantle the traditional cultural bias in favour of literature imitating reality” (3-4). It helps the readers to think critically and deduce an “open-ended vision of the real” based on three of reality, that are real, factual, impactful and present in their sociopolitical issues (Gough, *Speculative Fiction* 11; Oziewicz, *Speculative Fiction* 4).

Margaret Atwood defines spec. fiction as literary texts that predicts the unknown future and does not necessarily consist of the intergalactic galaxy, spacecraft, extra-terrestrials, “chemicals and fictional creatures” (Watts, *Margaret Atwood 2*, Atwood, *In Other Worlds*, 2011). Despite Ursula Le Guin’s claims that *MaddAddam* trilogy is part of SFs, Atwood claims her trilogy is considered a spec. fiction as it investigates and discovers future speculations and hypothesis of the events or issues, which may occur in the future, instead of relying on scientific terms and facts. She claims that spec. fiction is “based on rigorously-researched science, extrapolating real technological and social trends into the future”, especially the possibilities of the current technologies and sociopolitical situation that will affect the future society

⁴ According to Oziewicz, social justice refers to “social, gender racial and other forms of discrimination and exclusion” on the national level, whereas global justice seeks to raise awareness of “the ills of profit-driven globalization, global racism, poverty and other issues” internationally wide, especially in environmental issues, cultural contexts and also technology advancement (*Justice* 15-7).

(Watts 2; Lanning, *Interview with M.A.* 2017). For instance, Margaret Atwood provides examples based on Jules Verne's literary texts, as she suggests and predicts the future possibilities of inventing modern vehicles such as train, airplane, hot air balloons and submarine in *Twenty Thousand League under the Seas* (1872) and *Around the World in Eighty Days* (1873) (*In Other Worlds*, 2011).

Based on the given examples, Margaret Atwood explores the dystopian aspects of the society, particularly on the environmental and humanitarian movements, especially female rights. As she is notably outspoken about the Canadian's socio-politics contexts, novels such as *The Edible Woman* (1969), *Lady Oracle* (1976), *Bodily Harm* (1981), *The Handmaid's Tale* (1985), *Cat's Eyes* (1988), *Alias Grace* (1996)⁵ and many more portrayed the theme of humanitarian rights as well as environmental awareness (Cooke, *Margaret Atwood*, 2004; Howells, *Cambridge Companion*, 2005). The scholars studied Atwood's novels using various literary theories such as the gothic, dystopian, post-apocalyptic, postmodern and historical genres since the early 1980s until the late 21st century.

There are three main characteristics of spec. fictions proposed by various literary scholars (Heinlein, 1947; 1988; Gough, 2003; Gill, 2013; Thomas, 2013; Termini, 2015; Oziewicz, 2015; Oziewicz, 2017). Firstly, spec. fiction allows readers to imagine future endeavours and socio-politic changes. According to Heinlein, spec. fiction writers use literary characters to project their perception and attitude towards social changes. Instead of focusing on the negative effects of utilising science and technology, spec. fiction helps the readers to empathise the characters' narrations and opinions of the future events and scientific developments in the alternated world (Heinlein, 1947; 1988; Gough, 2003; Termini, *The Bent Mirror*, 2015; Oziewicz, 2015). Therefore, this aids the readers to foresee how science and technology, humanitarian and political movements affect their present social condition based on general issues, cultural and races as well as human rights (Gill, 2013; Termini, 2015; Oziewicz, 2015).

Secondly, spec. fiction consists an alternated world, which is logically possible, believable and far-reaching to the readers' point of view regarding on the consensus reality (Lewis, *Plurality of the World* 2-3; Ronen, *Are Fictional World Possible* 354). This enables the readers to understand the context of the story plot using their imaginations through "sociotechnical thought experiment" (Gough, *Speculative Fiction* 3). This helps them to postulate various "interpretations and purveyors of values" for the readers by "reclaiming forgotten marginalized modes of engagement with reality" (Gough, *Speculative Fiction* 3; Oziewicz, *Speculative Fiction* 22). In relation to the sociotechnical thought experiment, spec. fiction also employs alternated world via the "interaction of estrangement and cognition", which overlaps with Darko Suvin's definition of SF in *The Metamorphoses of Science Fiction* (7). Suvin claims that SF portrays an alternated world using the framework of "interaction of

⁵ *The Edible Woman* (1969), *Lady Oracle* (1976), *Bodily Harm* (1981), *The Handmaid's Tale* (1985), *Cat's Eyes* (1988), and *Alias Grace* (1996) will be referred as *Edible*, *Oracle*, *Bodily*, *Handmaid's Tale*, *Cat's Eyes* and *Alias*.

estrangement and cognition” that is different from the literary writer’s time and setting (*Metamorphoses* 7). On the other hand, spec. fiction employs “actual chain of causes” or “the matrix of reality conditions” that replaces with other elements such as supernatural entities or fantastical elements (Gill, *The Uses of Genres* 73). As a result, these supernatural and fantasy elements form a sense of estrangement because of “unfamiliar, ambiguous and inclusive” world (*Metamorphoses* 7; Oziewicz, *Speculative Fiction* 22).

Moreover, spec. fiction consists of fantasy elements, which form imaginative yet unsettling story plot that is related to the context of the reality (Oziewicz, *Speculative Fiction* 18). This blurs the boundaries between fiction and reality in genre study based on questions and deductions and the “nature, causes and consequences of change” (Termini 1; Oziewicz 2). Based on Raymond Williams’ essay titled *Science Fiction* (2010), he proposes that historical contexts show the “dominant patterns and informed by a specific “structure of feeling” (15). Although the plot of the fiction is fictional, the literary writers are able to create a fuzzy setting that is “politically scrappy, cognitively empowering and affectively stimulating” the readers (Oziewicz 74).

Thirdly, spec. fiction consists of “non-mimetic narrative fiction”, which does not only restrict to novels and short stories, but also have expanded to different types of media such as “drama, radio, film, television, computer games, picturebook, comic book, graphic novel and poetry (Oziewicz 2,7). For instance, various spec. fictions, such as *Around the World in Eighty Days* (1873), *Lord of the Rings* trilogy (1954-1955), *Jurassic Park* saga (1990-2018), *American God* (2001), *Never Let Me Go* (2003), and other literary texts are adapted into various types of “modern storytelling” such as “printed, electronic, hybrid formats, and in all visual media” (22). There are “175,059 authors, 503,617 publications and 1,471,686 titles” under the literary genre of spec. fiction from the range of “SF, fantasy, horror fiction”, and other subgenres under these three categories⁶. Moreover, *The World without End* compiles 39 types of subgenres under SF, 19 types of subgenres under fantasy and horror fictions⁷ (*Science Fiction, Fantasy and Horror Subgenres*).

Besides, Penguin Random House lists out various genres under spec. fictions, which are “SF, fantasy, utopian and, dystopian fiction, magic realism, fantasy, voyages, ghost stories, and the Gothic with supernatural elements” (Gill 72). Besides, there are various “micro-subjects from apocalypse to steampunk” categorised under spec. fiction (72). The table shows the main categories under spec. fiction:

⁶ Internet Speculative Fiction Database. “ISFDB Statistics”, *Internet Speculative Fiction Database*. Accessed 14 January 2018, <<https://www.isfdb.org/cgi-bin/stats.cgi>>

⁷ “Science Fiction, Fantasy and Horror Subgenres”, *Worlds without End*, n.d. Accessed 17 April 2018, <https://www.worldswithoutend.com/resources_sub-genres.asp>

Table 1.1 : Examples of Literary Genres under Spec. Fiction

Types of Genre	Description	Examples
Science fiction	A type of genre, which involves future speculations and scientific inventions, such as spaceships, robots or artificial intelligence, mutants, extra-terrestrials, and future technological developments.	<ul style="list-style-type: none"> • <i>Necromancer</i> by William Gibson • <i>Fledging</i> by Octavia E. Butler • <i>Transformation series</i> by Neal Asher
Fantasy Fiction	A type of genre, which consists of imaginary figures based on mythology and magical elements.	<ul style="list-style-type: none"> • <i>Chronicles of Narnia</i> by Lewis Carroll • <i>The Golden Compass</i> by Philip Pullman • <i>Miss Peregrine's Peculiar Children</i> by Ransom Riggs
Horror Fiction	A type of genre that employs with dark, fearsome and horrifying beings, like monsters and ghosts, man-made monsters, dark fairy tales, demonic beings as well as satanic occults. Horror fiction triggers distress and bewilderment among readers.	<ul style="list-style-type: none"> • <i>Dracula</i> by Bram Stoker • <i>The Silence of the Lambs</i> by Thomas Harris • <i>Salem's Lot</i> by Stephen King
Utopia and Dystopia Fiction	<p>Utopia fiction portrays the ideal social conditions and settings in literary texts.</p> <p>Dystopia fiction shows the negative sides of the society, where the capitalists or powerful figures control the lower-class society through stringent rules and regulations, brutal punishments, and indoctrination.</p>	<ul style="list-style-type: none"> • <i>The Dispossessed</i> by Ursula K. Le Guin • <i>Hunger Games</i> by Suzanne Collins • <i>Maze Runner</i> series by James Dashner
Apocalyptic and Post-Apocalyptic Fiction	<p>Apocalyptic fiction is a type of genre, which prophesied the-end-of-the world via natural disaster, war or contagious plagues that wipes off human population.</p> <p>Post-apocalyptic fiction focuses on the aftermath of the-end-of-the world and humanity. The setting is set in a world without technology and the lifestyle of the pasts. This genre focuses only on the aftermath of the calamity, the survivors' psychological conditions, and recalling the forgotten pasts or myths.</p>	<ul style="list-style-type: none"> • <i>The Stand</i> by Stephen King • <i>World War Z</i> by Max Brooks • <i>Sea of Rust</i> by C. Robert Cargill

Alternate History Fiction	A type of genre, which recaps the historical events using imaginative features like magic or mythical creatures	<ul style="list-style-type: none"> • <i>Ninety Eighty-Four</i> by George Orwell • <i>Fatherland</i> by Robert Harris • <i>The Years of Rice and Salt</i> by Kim Stanley Robinson
Superhero Fiction	A type of genre that focuses on superheroes as the main protagonist, who aim to defeat the main antagonist, or also known as super-villains. This genre usually includes either SF, fantasy or both of the genres	<ul style="list-style-type: none"> • <i>The Adventures of Superman</i> by George Lowther • <i>Watchmen</i> by Alan Moore • <i>Wild Cards</i> by George R. R. Martin
Steampunk	A type of genre that focuses on the Victorian setting in the 19 th century, where the characters use steam-powered machinery, that is inspired by Jules Verne's and H.G. Wells' literary works	<ul style="list-style-type: none"> • <i>The Strange Case of Dr. Jekyll and Mr. Hyde</i> by Robin Louis Stevenson • <i>The Golden Compass</i> by Philip Pullman • <i>The Goblin Emperor</i> by Sarah Monette

Based on the *Science Fiction and Fantasy Research Database*, spec. fiction has expanded over “thirty-one thousand eight hundred and sixty-one items literary texts based on subgenres, such as gothic, bedtime stories and fairy tales, fan fiction, post-apocalyptic zombie invasion, romance, Afrofuturist eco-dystopia, posthuman urban fantasy” (Oziewicz 22).

Thus, the present study examines the implications of grotesque features of scientific creations in Atwood's selected spec. fictions using the conceptual framework of the grotesque, especially *MaddAddam* trilogy. In the trilogy, Jimmy's father, Crake and other fellow scientists have invented grotesque creatures and modern medications, which interfered the natural order to the environment by modifying their genetic structure and disrupting their natural procreation using modern science technologies. The depiction of the grotesque creatures and modern creations serve as warnings to raise the readers' awareness of the sinister future and the consequences of the obsession of playing God among the scientists. As mentioned by Sharon Hengen, Margaret Atwood foresees the extinction and destruction of nature and the scientists would regret of inventing scientific creations that are not as perfect as the original creations (72). In a report by *Agricultural Biotechnology: Strategies for National Competitiveness*, the field of biotechnology improves the agricultural crops and animal agriculture. However, there is evidence of monstrous deformities due to the above and Lynn White Jr.'s proposes that “anthropocentric arrogance and dominating attitude” as one of the causes of deformities as well as a man “playing God” (White, *Ecological Crisis* 8). Ku's idea of “*homo faber* (man, the tool maker)” is also considered as the causes of deformities in the trilogy (Ku, *Of Monster and Man* 111). Besides humans' dominating nature, scientists' obsession motivates them to conduct “reckless experimentation”, “unwise medical tests”, “the dissection of living tissues and meddling with nature” which resulted in the portrayal of monsters that threatened

humanity based on the Gothic literary texts from the 19th century until the late 20th century (Edwards, *Technogothics 2*). In addition, Edwards notes that the meddling with nature in gothic literary texts created grotesque monsters that claim to transgress the natural order of the environment and threatens humanity based on anthropocentric position (*Technogothics*, 2015).

According to recent scientific discoveries in 2017, the scientists have successfully invented the embryos of hybrid human-chimera from cloned pigs and sheep, which does not display any signs of “genetic disease” (Park *Pig Organ*, February, 2018,). Despite of the clarification, this invention raised various controversies and ethical issues among society as well as the fear of inventing a hybrid creature, which can behave like humans (Park *Pig Organs*, February 2018; Greshko *Sheep Human*, February 2018). As speculated by Margaret Atwood in *MaddAddam* trilogy, the scientists continued to experiment on various creatures in the hope to increase the probability of organ transplants for humans⁸. In the pasts, Alessandra Potenza points out the scientists have transferred genetically modified mice’s pancreas to cure diabetes among the mice⁹. On the same year, the scientists develop “lab-made tadpoles” to substitute human livers and hearts, to increase the probability of human organ transplants¹⁰. On the other hand, the scientists from the Salk Institute create human-pig, as they possess the same genome as humans and a longer lifespan than genetically modified mice¹¹. Nevertheless, the scientists claim the human-hybrid animals are still under the experimental stage to understand the process of creating functioning human organs¹². Hannah Devlin points out the concerns of inventing “spectre of intelligent animals with humanized brains” as well as “to be accidentally to be released into the wild”¹³. Based on the newest discoveries of human-pig ‘chimera’ and other genetically modified animals like sheep human hybrid, these creations develop future threats to humanity because of the ethical concerns of genetic engineering, which evoke sinister effects and fear among humans (Greshko, *Sheep Human*, February, 2018). As portrayed in Margaret Atwood’s *MaddAddam* trilogy, these speculations of human-animal chimeras are developed and roamed freely in the post-apocalyptic society.

⁸ Park, Alice. “Why pigs organs could be the future of transplants”. *Time Magazine: Health*. February 16, 2018. Accessed April 11, 2019. <<https://time.com/5159889/why-pig-organs-could-be-the-future-of-transplant/>>

⁹Potenza, Alexandra. “Mice cured of diabetes”, *The Verge*, January 25, 2017, Accessed 17 April 2018, <<https://www.theverge.com/2017/1/25/14383222/diabetes-study-mice-rat-interspecies-organ-transplant-cure>>

¹⁰ Potenza, Alexandra, “Lab-made Tadpole Cyclopes”, *The Verge*, January 26, 2017. Accessed 17 April 2018, <<https://www.theverge.com/2017/3/30/15115198/tadpole-grafted-eyes-innervation-human-transplants>>

¹¹Blakemore, Erin. “Human-Pig Hybrid”, *National Geographic*, January 26, 2017. Accessed 17 April 2018, <<https://news.nationalgeographic.com/2017/01/human-pig-hybrid-embryo-chimera-organs-health-science/>> January 26, 2018. Accessed April 17, 2018.

¹² Ibid.

¹³Devlin Hannah. “First human-pig 'chimera' created in milestone study”, January 26, 2018. Accessed April 17, 2018, <<https://www.theguardian.com/science/2017/jan/26/first-human-pig-chimera-created-in-milestone-study>>

Besides this, modern medication is also another concern expressed in Margaret Atwood's *MaddAddam* trilogy. According to Paul Offit, scientists from the University of Minnesota discovered that vitamin supplements lead to prostate cancer, heart-related illness, decrease humans' lifespan and allergies (*The Vitamin Myth*, 2013, July 19). National Institutes of Health states that painkillers decrease the level of fertility among male users (Scutti, *Ibuprofen linked to male infertility* January 9). This leads to Atwood's concern by exaggerating the death of humanity through the representation of *BlyssPluss* pills.

With all the above information, the grotesque and monstrous features of the transgenic animals and modern medications will be studied in this thesis using the concepts of the uncanny and monstrosity. According to Justin D. Edwards and Rune Graulund, the concept of the uncanny is known as the awareness towards familiarity and de-familiarity that resulted in "emotive responses that is uncomfortable and disconcerting" (146). The disturbing and unsettling emotions cause repulsion of strange and eccentric beings, which are beyond comprehension. On the other hand, the concept of monstrosity associates to corporal "combination of human and non-human or animalistic characteristics body parts and even plant forms" (36). By relating the concept of the uncanny and monstrosity, the repulsiveness towards the scientific creations brought the "experience of fear mixed with disgust" among the literary characters (38).

1.3 Statement of the Problem

The present study intends to address the gap of the study, especially on the implication of the grotesque features of scientific creations in Margaret Atwood's *MaddAddam* trilogy, especially *Oryx and Crake*, *The Year of the Flood* and *MaddAddam*. Previous studies have not given attention to the grotesque aspects of the scientific creations. As discussed earlier in the background of the present study, many scholars debated the negative effects of genetic engineering towards humanity (DiMarco, 2005; Ku, 2006; Warkentin, 2006; Sanderson, 2012; Mosca, 2013).

The study intends to highlight the grotesque features of the scientific creations as a focal image and style. The study of the grotesque establishes a history of artwork, figurines, and architectural buildings in the seventeenth century, particularly Vitruvius during the Italian Renaissance (Bakhtin, *Rabelais*, 1965; Barasch, *The Grotesque* 25). Other scholars, such as Arthur Clayborough, Frances K. Barasch and George Harpham have expanded the understanding of the grotesque into other fields such as psychology, philosophy, theology, and literature. Despite the scholars have claimed that the grotesque is as meaning, structure and focal image, there is a limited study of the grotesque theory done in spec. fictions. This selected spec. texts are possible to study the implications of the grotesque of scientific creations using the conceptual framework of the grotesque. The outcome of the study intends to show the characters' emotional response towards the creations based on two concepts of the uncanny and monstrosity by Justin D. Edwards and Rune Graulund.

This trilogy also points out how scientists have misused scientific developments to produce eccentric animals and modern medications (Howells, *Cambridge Companion* 2005; Warkentin, *Dis/integrating*, 2006; Dunlap, *Eco-Dystopia*, 2012). Ann Coral Howells (2005) points out how scientists like Crake and Jimmy's father, misuse scientific knowledge without any moral consideration in creating new inventions in *Oryx and Crake*. Consequently, they invented various transgenic monsters and humanoid creatures in a post-apocalyptic scenario closer to traditional SF (Howells, *Cambridge Companion* 163). As documented by Nathalie Cooke, Margaret Atwood's writing style focuses not only historical fiction but also satirical and comic as well as utopian and dystopian society to show the terror of the Frankenstein effects towards the society (Margaret Atwood 2004). The study proposes that scientific creations possess inherent grotesque features, through the characters' point of view. Their existence has distorted the balance of nature and are represented as a form of "environmental degradation", that is "simultaneously ridiculous and terrifying" to the readers' viewpoint (Bouson, *We're using up the Earth* 2009; Huggan and Tiffin 2009; Mosca, *Crossing Human Boundaries*, 2013; Northover, *Strangers in Strange Worlds* 122). Jessica Cora Franken addresses the consequences of ignoring morality and ethical considerations among scientists by relating to the grotesque features of the scientific creations, which is beyond the readers' comprehension about scientific knowledge in Atwood's *MaddAddam* trilogy (*Children of Oryx*, 2014). Due to the scientists' ignorance or lack of environmental awareness, the study addresses the implications of the grotesque that distort the physicality of the scientific creations and repulsion to the characters in the *MaddAddam* trilogy.

My study intends to highlight the characters' emotive response and experiences with genetically modified animals and modern medications, which induced them to undergo disorientation towards the exaggeration and goriness of the scientific creations. In addition, the scholars did not attempt to debate the normalisation of utilising both genetically modified animals and modern medications via the exaggerating depictions of the grotesque. There are limited studies applying the uncanny and monstrosity concepts in Canadian literary fictions, especially Margaret Atwood's *MaddAddam* trilogy. This is because Atwood's writing style produces hyperbolic effects, irony and macabre, which resulted in irresolvability tension between the normal and the abnormal. Thus, it is significant to justify the elements of exaggeration and goriness via conceptual framework of the grotesque proposed by Justin D. Edwards and Rune Graulund.

In addition, previous studies have extensively debated the environmental issues occurs in *MaddAddam* trilogy, using ecocriticism theory to depict the negative consequences of abusing natural environment as well as violating the boundaries between natural and artificial, especially genetically modified animals (Cooke, 2004; Hengen, 2005; Howells, 2005; DiMarco, 2005; Ku, 2005; Dunning, 2006; Warkentin, 2006; Bergthaller, 2010; Glover, 2009; Canavan, 2012; Dunlap, 2012; Noogheem, 2012; Sanderson, *Pigoons*, 2013; Bahrawi, 2013; Botta, 2013; Ganz, 2013; Bhalla et al, 2014; Franken, 2014; Frew, 2014; Ruzek, 2014; Faure, 2015; Northover, *Ecological Apocalypse*, 2016; Northover, *Strangers in a Strange World*, 2017). Besides debating about the negative consequences of abusing natural environment, there are scholars

who have studied on the genetically modified food or artificial food, which raise uncertainties and fear among the citizens as they are speculated to be humans' future food consumption in the society (Parry, 2009; Sasame, 2010; Botta, 2013).

Previous studies also asserted about the consequences of intercepting the natural order of the environment and violation of boundaries between human and animals, artificial and natural as well as normal and abnormal (Howells, 2005; Cooke, 2006; Warkentin, 2006; Glover, 2009; Canavan, 2012; Dunlap, 2012; Schmeink, 2016). Various scholars highlighted the morality and the ethics of applying scientific knowledge, which surpassed the normal features of domestic animals as well as medications in *MaddAddam* trilogy via posthuman concepts (Galbreath, *(un)natural Bodies* 28-39; Mosca, *Crossing Human Boundaries* 38-52; McKeever, *Posthumanism* 57-80). Warkentin remarked a significant point which showed transgenic animals as part of "technoscience" and "bio-machines" in humans' daily life for organ transplants, reducing food shortage and animal extinction, via the concept of mechamorphism and binary opposites, such as "natural and artificial, contamination and purity, integrity and fragmentation and mind and body" that contaminates the natural environment (*Dis/integrating* 82). Mosca highlights the existence of the genetically modified animals had developed an unnatural posthuman relationship between humans and animals as well as transgressing the natural order of society (*Crossing Human Boundaries*, 2013). Based on the previous scholars' justification, my study aims to unravel the uncanny and monstrosity aspects of unknowingly normalising and accepting the genetically modified animals as commodities, which were generally justified by the scholars, using the characters' emotive responses via conceptual framework of the grotesque.

Futhermore, the previous studies encompass the satire aspects of Margaret Atwood's trilogy. Brooks Bouson emphasised the concepts of satire and comic in three different previous studies. She employed the concept of satire and the comic as "laughing mechanism" to criticise the dysfunctional, violent and corrupted society via dehumanising online games, like *Blood and Roses* and *Extinctathon*, the massive killings among the painballers as well as human's greed and cruelty in destroying the natural environment (Bouson, *It's game over forever*, 2004; *We're using up the Earth*, 2009; *A "joke-filled romp"*, 2015). These instances portrayed the Corporation's corruption and manipulation as well as "culture of violence" as "barbaric, cannibalistic world of human cruelty and predator" (*We're using up the Earth*, 2009; *A "joke-filled romp"* 4).

In recent studies by Elizabeth Faure, the study shows anthropocentric principles such as, inventing hybrid animals, manipulating and exploiting the balance of the natural environment with scientific developments and technologies, have contributed to human overpopulation and environmental destruction, as portrayed in *Oryx and Crake* (*A Necessary Change* 8-14). She emphasised the importance of practicing "ecocentric attitude" as the key to saving the environmental condition if the characters are aware of "the relationship between humans and nature in the natural ecosystem" in *Oryx and Crake* (24-6). Faure provides examples of ecocentric attitude in *The Year of the Flood*,

whereby the God's Gardeners, practice recycling used items, use natural remedies and alternative medications to recuperate the sick, as well as adapting "radical vegetarianism" (*A Necessary Change*, 2015).

Furthermore, Alan Northover and Reinhardt Fourie claims that the future post-apocalyptic society becomes strange and eerie future setting as it has reverted from posthuman society into the Stone Age era (*Strangers in Strange World*, 2017). This caused the characters to experience the sense of uncanny as the result of abusing nature and animals. Previous scholars have established studies on the theme of "man playing God" or "man as the tool maker" in *Oryx and Crake* (Ku 111). Danette DiMarco and Ku Chung-Hao have identified the negative effects of a man being obsessive in inventing new scientific creations based on the theme of man playing God (*Paradise Lost*, 2005; *Of Monster and Man*, 2005). The consequences of man playing God had destroyed the dystopian society into a post-apocalyptic society. As a result, the transgenic animals populate and humans become fearful and threatened by their species (*Paradise Lost*, 2005; *Of Monster and Man*, 2005). This has shown a transition of the anthropocentric position from a man playing God to the other (Ku, *Of Monster and Man*, 2005).

Moreover, Marcy Galbreath, Margaret Kathleen Telligman, Shoshannah Ganz and Jane Bone reveal the relationship between the hybrid animals as well as the characters. Galbreath highlighted the posthuman features of the genetically modified animals in *Oryx and Crake ((un)natural Bodies*, 2013). However, Galbreath, Telligman added on both posthuman aspects and ecological ethics in *Oryx and Crake*, as well as *The Year of the Flood*, highlighted the dire consequences of "capitalism and consumerism" done towards the natural environment as well as humanity in forms of estrangement ("*Imagining Boundaries*" ii). Ganz mentions of humans' fears towards the Crakers, as monsters, in ecogothic perspectives based on the interrelationship between gothic bleak environment and the characters in *Oryx and Crake* as well as *The Year of the Flood* (*Margaret Atwood's Monster*, 2013). However, Bone emphasised on the posthuman aspects of monstrosity via the concepts of "childhood and monstrosity and influenced constructions of childhood" in *Reith Lecture's Managing Monsters* (1994) by Marina Warner (Bone, *Monstrous Child* 3). Science and technology have caused sinister and grotesque effects towards the natural environment as the result of the playing God. However, the grotesque features did not just cause a bleak future but also considered as one of the main factors that portrayed deformities to these scientific creations. The grotesque animals and modern medications eventually turned against humanity. From these aspects, the current study intends to present the grotesque elements of the genetically modified transgenic animals. Hence, the expected finding is to highlight the grotesque features of transgenic animals.

On the other hand, Margaret Atwood also points out the uses of modern medications in both *Oryx and Crake* and *The Year of the Flood*. Stephen Dunning, Danette DiMarco, Katherine Labudová and Sarah Appleton debate on the negative effects of the *BlyssPluss* pills, which supposed to control sexual desires and transmission of sexual disease (*Power, pain and manipulation*, 2010; *Corp(Se)mocracy*, 2011).

However, there are significant grotesque features exhibited through the method of the experimentations are considered as grotesque and monstrous. Beth Irwin and Micheal Spiegel trace the exploitations of consumerism via brand products and capitalism. Irwin and Spiegel analyse capitalism's manipulation towards society by using their power and status to control society (*Global Capitalism*, 2009; *Post-National World*, 2010). However, Michael Spiegel applies the concept of neomedievalism to show how the multinational companies manipulated the society into buying and accepting the brands, they have produced using genetic engineering (*Post-National World*, 2010). In addition, Dunlap highlights the different position between the Compound society and pleeblands using the ecotopianism through differentiating the aristocrats and proletariats (*Eco-dystopia*, 2012).

Katherine Labudová, Barbara Lyrd, and Marinette Grimbeek analyse on the compound words and linguistic features, which influenced the consumerism (*Power, pain and manipulation*, 2010; *Egg full of Words*, 2016; Grimbeek, *Wholesales Apocalypse*, 2016). Labudová show how Crake uses languages, through postmodern concepts of the conflict of the real and the fictional, the real and the virtual by Jean Baudrillard's *Simulacra and Simulations*, to manipulate and control Jimmy and Oryx, who do not have a grasp of scientific knowledge, especially the *BlyssPluss* pills (Labudová, *Power, pain and manipulation*, 2010). At the same time, Jimmy, who experience emotional death, control the Crakers by instilling words that showed dominance towards them. However, Lyrd uses Micheal Halliday's functionalist theory of language to show how manipulation in language happened when Jimmy indirectly manipulates the society with his linguistic competency in promoting the *BlyssPluss* pills as well as the time he converses with the Crakers (*Egg Full of Words*, 2016). On the other hand, Grimbeek suggest the uses of coinages in their brands are proven to exaggerate and contradict to what is intended to be for humanity (*Wholesale Apocalypse*, 2016). These coinages produce satire effects to three main issues, especially environmental degradation, abusing consumers' rights and finally the death of human species (*Wholesale Apocalypse*, 2016). Their study concludes that the brand products produced by CorSeCorps lead to death and destruction of humanity because of selling pills for profits.

Although the studies cover few aspects such as social, consumerism, political and mythology and cultural contexts, dystopia and apocalypse, my study examines the effects of the scientific creations, particularly, the genetically modified animals and modern medications. Limited studies discuss modern medication as Stephen Dunning examines the terror of the modern medications, which was due to Crake's psyche and fear of dysfunctional relationships as well as his vengeance towards humanity (Dunning, *The terror of the therapeutic*, 2006). In addition, scholars such as Katherine Labudová, Barbara Lyrd and Marinette Grimbeek highlighted the language discourse as a form of manipulations, which affected the characters' understanding towards the Corporations' medical and beauty care products (Labudová, *Power, pain and manipulation*, 2010; *Egg full of Words*, 2016; Grimbeek, *Wholesales Apocalypse*, 2016). On the other hand, *The Year of the Flood* points out the uses for alternative medications to remedy current medical treatments in (Davies, *Florality*, 2013; Faure, *A Necessary Change*, 2015; Richard, *Wiping the Slate*, 2016).

In conclusion, the present study intends to address the implications of the grotesque features of scientific creations, which are altered into grotesque entities, due to “dangerous experimentation, unethical medical tests and interference of the natural environment”, and repulse both of the audiences and also the characters in the trilogy that is set in the late twenty-first century (Edwards, *Technogothics* 2).

1.4 Justification of the Selected Texts

The grotesque study primarily focuses on the physicality of images, compositions, and structures of aesthetic artworks, buildings and statues. From the eighteenth to the nineteenth century, the grotesque theory has elaborated from aesthetic values to other fields, such as philosophy, psychology, theology, literature and many more. Arthur Clayborough uses psychological aspects of the grotesque in artworks to show how the literary writers’ attitude towards the environmental and social conditions during their time in a form of a focal image (*Grotesque in English Literature*, 1965). Nahid Moghadam points out that the grotesque theory can act as a “focal image which represents the grotesque at a pictorial or metaphoric level” (197). In other words, the connection between literature and science played an important role in spec. fiction by unravelling the “cautionary tales” of sinister future and the negative implication of scientific development if it is not well used in the science community via grotesquery “pictorial or metaphorical level” (Urbanski 25).

I propose to study Margaret Atwood’s *MaddAddam* trilogy using the conceptual framework of the grotesque because there are limited studies, which employ the grotesque into this particular trilogy. Based on the literature review, the scholars claim that Atwood’s trilogy is portrayed as gothic, dystopia and post-apocalyptic fictions. However, Alan Northover has recently proposed that Margaret Atwood’s *MaddAddam* trilogy comprises of elements of estrangement and uncanny because of the reversion from a modern society into Stone Age. As a result, the present study aims to highlight the degrading effects of the grotesque nature which brings disorientation and bafflement to the characters in the post-apocalyptic society due to the exaggeration and goriness of the scientific creations. As Atwood’s selected spec. fictions also comprise ethical concerns of applying scientific knowledge in science community, the intellectual pleasure of genetic engineering and modern medications, earned by the scientists, turn out to be a source of danger to humanity, as nature becomes monsters and cause a mixture of fear and disgust among the characters in Atwood’s selected spec. fiction, especially *MaddAddam* trilogy.

Secondly, the purpose of the study is to unravel the grotesque elements of the scientific creations in Margaret Atwood’s *MaddAddam* trilogy. The selected texts will be analysed using the conceptual framework of the grotesque in *Grotesque: The New Critical Idiom* (2013) by Justin D. Edwards and Rune Graulund. The conceptual framework utilises the concepts of the uncanny and monstrosity to elaborate further about the grotesque elements of scientific creations, especially genetically modified animals and modern medications. Atwood’s spec. fictions are chosen also chosen for the present study as there are subtle strains of grotesque elements in the novels besides

gothic elements, which was proposed by Nathalie Cooke (*Margaret Atwood*, 2004). Despite Cooke's claim that Atwood's first book, *Oryx and Crake*, consists of gothic strain due to the bleakness of the future, this selected spec. fiction also consist of transgenic animals and modern medication, which are uncanny and monstrous to the characters' point of view (Cooke, *Margaret Atwood*, 2004). Hence, these inventions indicated strains of grotesque, especially the degrading physical bodies of the scientific that serve as reminder and warning to both readers and science community of the impacts of science of technology, current socio-political conditions as well as environmental concerns towards humanity (Oziewicz, *Justice*, 2015).

Atwood's spec. fictions consist of relationship between literature and science. As Earl Ingersoll and mentioned of the separation between science and literature, Margaret Atwood's *MaddAddam* trilogy also poses possibilities of how humans will survive and co-exist with grotesque scientific creations in the post-apocalyptic setting. Liza Yaszek pointed out that spec. fictions explored how humans cope or anticipate with the sense of "alienation" from themselves and their world, particularly in "urban disaster novels" such as *The Drowned World* (1962) and *Crash* (1973) by J.G. Ballard (392). Consequently, this triggers the readers to reconsider whether to rely on science and technology for their daily life. Despite being established as post-apocalyptic novels, the anticipation of encountering both pre and post-apocalypse in the near future triggered not just fear but also disorientation and bafflement towards the grotesque scientific creations, particularly in *MaddAddam* trilogy. Thus, it is essential to revisit the historical contexts of genetic engineering as well as modern medications in order to understand Atwood's concerns and perspectives regarding the characters' struggles in co-existing with the grotesque scientific creations.

Furthermore, the present study will explore the scientific knowledge based on the historical context and the application towards society instead of analysing the scientific procedures. In relation to the controversies and ethical concerns of inventing transgenic animals and modern medications in the earlier section, the conceptual framework of the grotesque is suitable to applied as a literary tool to raise "discrepancy of the impossibility of awareness of the grotesque nature of existence" of the scientific creations, as proposed by Justin D. Edwards and Rune Graulund (2013) (Blackmore, 2017; Potenza, 2017; Devlin, 2018; Park, 2018). Besides, the Thus, the conceptual framework utilises the concepts of the uncanny and monstrosity to further elaborate the grotesque elements of the scientific creations, especially genetically modified animals and alternative medications. Due to the ongoing scientific discoveries in the science community, Sharon Hengen points out that Margaret Atwood predicts the scientists will undergo various questionable ethical concerns which may bring unsettling emotions in the society, especially hybrid human animals and man-made plague (72). Hence, these justify my present study to examine the implication of scientific creations affecting the characters' emotions in *MaddAddam* trilogy though the conceptual framework of the grotesque.

1.5 Research Objectives

There are two main research objectives which I intend to cover in Margaret Atwood's selected spec. fictions:

- i) To reveal the characters' emotional responses towards genetically modified animals and modern medications in Margaret Atwood's *MaddAddam* trilogy through concepts of the uncanny and monstrosity by Justin D. Edwards and Rune Graulund (2013).
- ii) To examine the features of genetically modified animals and modern medications in Margaret Atwood's *MaddAddam* trilogy through concepts of the uncanny and monstrosity by Justin D. Edwards and Rune Graulund (2013).

1.6 Research Questions

There are two main research questions, which I intend to discuss in the present study, which are:

- i) How do the characters respond towards genetically modified animals and modern medications in Margaret Atwood's *MaddAddam* trilogy by Justin D. Edwards and Rune Graulund (2013)?
- ii) How are the features of the genetically modified animals and modern medications described in Margaret Atwood's *MaddAddam* trilogy through concepts of the uncanny and monstrosity by Justin D. Edwards and Rune Graulund (2013)?

1.7 Scope and Limitation

The current study intends to examine the features of the scientific creations using the conceptual framework of grotesque theory based on scholars, like Wolfgang Kayser (1963), Arthur Clayborough (1965), Frances K. Barasch (1971) and Philip Thomson (1972). They point out the main characteristic of the grotesque as the realm where the natural order of the "plants, animals and humans" as well as "shapes and proportion" are deformed into strange entities (Kayser 21). This subsequently evokes the idea of "ridiculous, distorted, and unnatural" to the audiences as they regarded the strange elements as "socially reprehensible", "excessive", "preposterous" or the representation of "a repulsive image and indeterminable world" (Clayborough 6; Barasch 164). So, the grotesque theory is employed to examine the grotesque elements of the scientific creations in Margaret Atwood's selected spec. fictions, especially the physical features of genetically modified animals and modern medications. The conceptual framework is further elaborated using the uncanny and monstrosity concepts proposed in *The Grotesque: The New Critical Idiom* (2013) by Justin D. Edwards and Rune Granlund.

These two concepts are used to analyse the physical appearances and characteristics of the transgenic animals as well as the modern medications' recuperative processes. Therefore, this research proposes textual analysis, which requires collections of text excerpts from the Margaret Atwood's *MaddAddam* trilogy, which consist of *Oryx and Crake*, *The Year of the Flood* and *MadAddam*. In addition, the study also focuses on the effects of the scientific creations towards humans as well as how the characters reacted in disgust and fear. The present study is limited to the characters' emotive responses of fear and disgust to grotesque scientific creations, which are the main essence of the present study that explores in Atwood's selected spec. fictions. Hence, the study explores the processes of scientific developments and modernisation in a grotesque manner, which affect the characters significantly in the *MaddAddam* trilogy.

1.8 Methodology

The study investigates and analyses the grotesque features of scientific creations via textual analysis of Margaret Atwood's *MaddAddam* trilogy, which are *Oryx and Crake*, *The Year of the Flood* and *MaddAddam*. This trilogy will be analysed using the conceptual framework of the grotesque by Justin D. Edwards and Rune Graulund. The physicality of the grotesque features is discussed based on two main concepts, which are the concepts of the uncanny and monstrosity. These two concepts will elaborate on the grotesque features of the inventions, which induce a combination of horror and amusement, attraction and repulsion, exaggeration, gruesome and monstrous features. The text excerpts are analysed based on the characters' point of view and responses towards the scientific creations after they have unknowingly recognised them as part of social norms. As a result, this causes the characters and readers to experience disorientation, especially towards the grotesque nature of scientific creations based on the unfamiliar state of savagery occurred in their social norms. The portrayal of the scientific creations is depicted based on the violation of traditional binary opposites, such as familiar and unfamiliar, human and non-human, cultural and savagery as well as attraction and repulsion, via the concept of monstrosity. The present research will be studied using both main and secondary references. The main references are Margaret Atwood's *MaddAddam* trilogy. The secondary resources are the library journal databases, author's background as well as reference books on literary criticism of the grotesque. The study will analyse and discuss the text excerpts found in Margaret Atwood's *MaddAddam* trilogy, especially the grotesque features of scientific creations, in Chapter 4.

1.9 Significance of the Study

The present study aims to establish a better understanding of the grotesque and monstrous scientific creations in Margaret Atwood's selected spec. fictions, especially the *MaddAddam* trilogy. By understanding the degrading effects of scientific creations, the conceptual theory of the grotesque for the present study helps to identify the grotesque physical appearances of scientific creations, which are distorted by heavy practices of scientific knowledge in both biotechnology and medical field in the science community via the study of the grotesque theory. The grotesque theory enables

the readers to realise “the discrepancy of an awareness of that which we cannot aware of”, particularly the “non-thought of existence”, such as the possibility of inventing human hybrid animals, man-made plague, re-acknowledging alternative medications as part of social norms (Edwards and Graulund 142).

Despite its well-presented dystopian, apocalyptic and gothic genre, the present study intends to explore Atwood’s selected novels through the grotesque theory in order to identify the characters’ initial repulsive reactions towards the scientific products, which eventually developed their fear and repulsion behind their bleakness. The conceptual framework of the grotesque is employed to analyse the grotesque features of the scientific creations through genetic engineering and modern medications. This helps the readers to realise the abnormality of these creations, which are normalised by the trilogy’s settings, major and minor characters’ point of view. This results in the transgression of the normal and abnormal that affected the characters’ point of view towards scientific knowledge in the late 21st century. The concepts of uncanny and monstrosity are used to identify the uncanny and monstrous scientific creations, which possibly created by scientists. Due to humans’ inability to control and abuse animals and nature, the study reveals the confusion of the heterogeneous features of genetically modified animals and medications, which lead to irresolvability of conflicts toward the characters’ point of view towards them. Thus, the physical features of scientific creations trigger bafflement towards unfamiliarity via motifs of exaggeration, gory and monstrous of in *MaddAddam* trilogy, which added into the significance of the present study. These grotesque creations will be addressed as warnings and portrayal of the sinister future and the risks of conducting scientific knowledge without ethical consideration among the scientists to the readers via Atwood’s selected spec. fictions.

1.10 Structure of the Thesis

The structure of the thesis consists of Chapter 1 as an overview of the present study. This chapter comprises of the preamble, the background of the study, research problem, research objectives, scope and limitations, the overview of the research methodology and conceptual framework, the significance of the study, the structure of the thesis and the definitions of terms. Chapter 2 reviews the previous studies done in Margaret Atwood’s *MaddAddam* trilogy by various literary scholars, the overview of the grotesque theory, as well as the cursory traces of the genetic engineering and modern medications. Chapter 3 explains the research methodology, theoretical framework as well as the concepts, which are employed in the study. Chapter 4 discusses and analyses Margaret Atwood’s selected spec. novels, *MaddAddam* trilogy, according to the proposed conceptual framework of the present study. Chapter 5 forms the overall conclusion of the present study and provides recommendations for future studies.

1.11 Definition of Key Terms

Defamiliarization: It is a concept that portrays “something familiar in an unfamiliar artistic form” to highlight new perception (Edwards and Graulund 144). Defamiliarization is also a concept, which allows both literary and artistic scholars to “take a common or everyday object and force the audience to see it from a strange perspective” (144).

Grotesque: Wolfgang Kayser (1963) defined the grotesque as “a specific ornamental style suggested by antiquity, understood not only something playfully gay and carelessly fantastic, but also something ominous and sinister in the face of a world totally different from the familiar one- a world in which the realm of reanimate things is no longer separated from those of plants, animals, and human beings, and where the laws of statics, symmetry, and proportion are no longer valid” (Kayser 21). This caused a “disorderly array of things that are odd in themselves gives the whole the appearance of an unfamiliar world” (Kayser 200). The grotesque resulted in “sense of the radical alienness of the world” in forms of “its “estrangement” from man” as well as “absurdity” (Steig 253).

Human-animal hybrid: It is known as “chimera” or “half human and animal” (Macintosh, *Chimeras, Hybrids and Cybrids* 188). These hybrid animals are formed via hybridisation by combining various embryos and sperms (199).

Hybridity: It refers to the “basic sense to mixture”. “The term originates from biology and was subsequently employed in linguistic and in racial theory in the nineteenth century (Edwards and Graulund 145). The grotesque in visual culture and literature often includes hybrid forms in which animalistic characteristics are merged with humanoid forms” (145).

Macabre: It is a concept that relates to “death as its subject and can comprise or include a personalized representation of death” (Edwards and Graulund 145). This grotesque term leads to frightening and dismay on the part of the reader due to the apparition as well as the uninviting situation (Edwards and Graulund, 2013).

Monstrosity: It is a concept that showed “the unnatural combination of animal species” as well as “monstrous creatures with grotesque humanoid features” (Edwards and Graulund 36-7). This concept shows how hybrid forms such as “human attributes of grotesque figures” being merged “with distorted and disproportionate qualities of forms that incorporate animalistic or...vegetative life forms” (37). This resulted in contradictory emotive responses, such as “fear mixed with disgust” or bewilderment, towards the corporeal combination of animals and humans (39). Thus, monstrosity depicts a “fluid transformation from civilization to barbarism” towards the violation of natural order (38).

Uncanny: It is “the experience of seeing something that is simultaneously familiar and unfamiliar. To Sigmund Freud, using the German word *unheimlich*, the uncanny mixes the foreign with the familiar, resulting in an emotive response that is uncomfortable and disconcerting. The experience is one of an eerie strangeness that arises out of the cognitive dissonance of the paradoxical nature of being repulsed by and attracted to both familiar and unfamiliar” (Edwards and Graulund 146).



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BIODATA OF STUDENT

Ong Li Yuan is a Master candidate specialising in Canadian Literature, in the Faculty of Modern Languages and Communication, Universiti Putra Malaysia. She was graduated from the same institution in 2015 with a Bachelor of Arts in English Language. Her research interests include the study of the settings in dystopian, gothic and grotesque fictions as well as the characters' psychological conditions.



LIST OF PUBLICATIONS

- Ong, Li Yuan, Arbaayah Ali Termizi, Shahbazi Moghadam, Nahid & Rosli Bin Talif. "Maggot Therapy and Monstrosity: The Grotesque in Margaret Atwood's *The Year of the Flood*". Spec. issue of *PERTANIKA: Journal of Social Sciences and Humanities*. 26(2). 2018. ISSN: 0128-7702.
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