Airship, Automaton, and Alchemy: A Steampunk Exploration of Young Adult Science Fiction

A thesis submitted in partial fulfilment

of the requirements

for the Degree of Master of Arts in English

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2012

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Acknowledgments

I wish to express my gratitude to Dr Anna Smith who has been a mentor to me, for her perspicacious insight, good humour, and timely encouragement, and for reminding me on more than one occasion, "As you're writing your thesis, you're bound to come across something that you think is more interesting and worthwhile. It's all an illusion," which turned out to be true after all. I would like to thank Dr Daniel Bedggood for his academic expertise, positive attitude, and sound advice, and for his estimable assistance in the editing of my thesis.

I would also like to thank my parents for believing in me, and for their patience and loving kindness; my mom, whose passion for stories became my inspiration; my dad, for telling me, in his attempt to find common ground between our different fields, "Doctors heal the physical wounds of the body, but stories heal the hidden wounds of the heart, mind, and soul." *Touché.*

A very special thank you to Vanessa Read, my kindred spirit and anti-depressant personified, for cheering me on with coffee, amusing anecdotes, and comforting, honest words; Elisha Wang, who looked at what I was doing and thought it was "cool"; and Hui-Yin Chueh, for making me watch *Fullmetal Alchemist*, which was the beginning of all of this.

Abstract

Steampunk first appeared in the 1980s as a subgenre of science fiction, featuring anachronistic technologies with a veneer of Victorian sensibilities. In recent years steampunk has re-emerged in young adult science fiction as a fresh and dynamic subgenre, which includes titles such as *The Girl in the Steel Corset* by Kady Cross, *The Hunchback Assignment* by Arthur Slade, and *Mortal Engines* by Philip Reeve. Like their predecessors, these modern steampunk novels for teens use retrofuturistic historiography and innovative mechanical aesthetics to dramatize the volatile relationship between man and technology, only in these novels the narrative is intentionally set in the context of their teen protagonist's social and emotional development. However, didactic conventions such as technophobia and the formulaic linearity of the bildungsroman narrative complicate and frustrate steampunk's representation of adolescent formation. Using case studies of *Leviathan* by Scott Westerfeld and *The Alchemy of Stone* by Ekaterina Sedia, retrofuturism and technological hybridity are presented as defining features of steampunk that subvert young adult science fiction's technophobic and liberal humanist traditions. The dirigible and the automaton are examined as the quintessential tropes of steampunk fiction that reproduce the necessary amphibious quality, invoking new expressions and understanding of adolescent growth and identity formation that have a distinctly utopian, nostalgic, and ecocentric undertone.

Introduction

Science fiction, the literature of wonders, is no longer just a dream of the golden age of progress or an extrapolation of alternate pasts and futures. American writer James Gunn concedes, "I read science fiction because I was born into a world which contained remnants from World War II. For me, learning about the real world entailed constantly colliding with a past realm--a world not my own--which often barged in upon my present" (4). The mingling of history, violence, and modern technology has left an indelible mark on how we live, who we are, how we understand ourselves, and how we imagine our future. So when the reader opens a book of science fiction, he or she is not simply escaping from the paltry, mundane reality of the present; the reader is entering the story as a frontier explorer of the world of tomorrow and a collector of scientific experiment notes that contain prophecies that are being or will be fulfilled. While most science fiction are driven by a future-oriented consciousness to foretell what the future holds, Steampunk fiction rebels against chronological linearity, leaping into retrofuturistic time to find a more authentic, nuanced vision of technology and human living. The first issue of *Steampunk Magazine* published in 2006 defines steampunk as a technological aesthetic movement that presents a "re-envisioning of the past with the hyper-technological perceptions of the present" (The Catastrophone Orchestra and Arts Collective 4-5). It distills the essence of Victorian mechanical aesthetics[1] and re-invents the history of technology, placing it in a favourable position

1 Steampunk's aestheticism stems from its Neo-Victoriana background, but it is also suggestive of what Elizabeth Outka sees as the commodified aesthetics in postmodernity, a union between aesthetic refinement and commercial possibility. Outka explains that it can soothe the friction between elitist desires to escape the marketplace and the gravitational force it holds with its alluring bounty, fulfilling the modernist's dream of possessing an autonomous sphere of aesthetics separate from the mass market while critiquing this separation (5).

to explore alternative means to portraying the relationship between technology, society, and the future in science fiction.

The rise and popularity of steampunk in the last decade or so should be perceived as the second wave of steampunk since the word was coined much earlier by K. W. Jeter in a letter to *Locus*, describing a literary trend[2] in the 80s: "Personally, I think Victorian fantasies are going to be the next big thing, as long as we can come up with a fitting collective term for Powers, Blaylock and myself. Something based on the appropriate technology of the era; like 'steampunks,' perhaps" (qtd. in Gross 57). However, it was not until much later when literary critics began recognizing the trio as the founding fathers of steampunk who, each in his own style, wrote novels that paid homage to the Wellsian/Vernian spirit of progress and contained technology powered by steam or clockwork in alternate Victorian England (Sterling 37). So while earlier literary works by Ronald Clark, Christopher Priest, Philip Jose Farmer, and Michael Moorcock are also redolent of the steampunk's aesthetics of artistry, and showmanship, only Jeter's *Infernal Engines*, Powers's *The Anubis Gates* and *The Stress of Her Regard*, Blaylock's *Homunculus*, and William Gibson and Bruce Sterling's *The Different Engine* are hailed as the great epic novels that form the literary canon of steampunk.

Steampunk writers carefully select and refine significant narrative, thematic, and stylistic elements and use them in a playful, self-reflexive fashion, as opposed to blatantly reproducing the aesthetic details of Wellsian/Vernian novels in a modern setting. It is not unusual to see steampunk writers targeting Verne since he could easily

2 Another strand of early literary steampunk can be found in the context of American pulp fiction. In Nevins' introduction to *Steampunk,* she refers to the Edisonade genre as a prototype of American steampunk that is primarily characterized by "technological optimism, exploitative capitalism (via the acquisition of wealth that is usually owned by native peoples or exists on their land), juvenile daydreams (the brilliant boy or teenager, with adult men serving him, becomes the master of the adult world and is acclaimed and respected), and the various exercise of bigoted fulfilment" (9).

be identified as the prototypical steampunk enthusiast of his time. For example, the technologies in Verne's novels were not even up to date but they were able to affect the illusion of progress in spite of its retrospective gaze (Unwin 8-14). Allen A. Debus similarly notes that like other steampunk writers Verne uses a mix of the real and the fantastic to create scientific plausibility with a veneer of heightened fantasy (405). In the new generation of steampunk writers, however, it is interesting to see Amal El-Mohtar hoping to see a different fate in the technology of steampunk:

> I want retrofuturism that plays with our assumptions and subverts our expectations, that shows us what was happening in India and Africa while Tesla was coiling wires, and I want it to be called steampunk. I want to see Ibn Buttuta offered passage across the Red Sea in a solar-powered flying machine of fourteenth century invention, and for it to be called steampunk. ("Toward a Steampunk Without Steam")

This kind of aspiration is not uncommon in steampunk. After all, it is a genre that prides itself on being creative and versatile. But as a genre that is still finding its own limit and boundaries, the integrity and efficacy of the steampunk imagination can easily be jeopardized by its own insistence on being creative as it seeks to accommodate experimental technologies purely for the sake of proving and distinguishing itself as a hybrid genre.

In spite of such a major pitfall, twenty years after Jeter first published *Infernal Devices*, steampunk has miraculously resurfaced. *The Hunchback Assignment* by Arthur Slade, *Soulless* by Gail Carriger, *Boneshaker* by Cherie Priest, *Fever Crumb* by Philip Reeve, and *The Iron Thorn* by Caitlin Kittredge are just a few of the novels published within the last decade that have re-appropriated steampunk allegories, myths, and tropes which originally appeared in the novels of Jeter, Blaylock, and Powers. So even

though the second wave of steampunk fiction is noticeably different from what Jeter, Blaylock, and Powers were trying to do[3], the more recent steampunk novels exhibit the same steampunk zeitgeist and obsession with nostalgia, history, and technology. Using playful, self-referential techniques such as historiographic hybridization, pastiche, and anachronism, steampunk writers fabricate imagined pasts and futures that are inspired by real historical events, the potential of which is manifold: it invites a historical exploration of the mercurial space between poles of freedom and determinism, which is consolidated by self-referentiality "that culminates in a kind of inescapable infinite regress" (Jagoda 63); it continues cyberpunk's[4] narrative tradition of treating posthumanism as a teleological force, reconfiguring and improving the mechanisms of human relationship (Pecoraro 3); it liberates the individual from the hegemony of commodified mass culture[5] and rebels against the present by accessing the positive values of the material world of the nineteenth century (Onion 138); it is a force of revision, resisting the modern man's attempt to separate the domain of science from that of humanities (Forlini 73); and by assaulting the historical past, it provides critical lessons that are not about the past but about becoming aware of the transience, liminality, and obsolescence of our own time (Yaszek 13; Ferguson 48; Sterling 13).

Though steampunk has re-emerged as an avant-garde genre known for its

3 See James P. Blaylock's interview in *Locus,* in which he differentiates between the novels written in the 80s and the more recent novels.

4 It is not simply the aspect of posthumanism that steampunk has borrowed. Carl Abbott explains that steampunk's tendency to focus on stylistic details is also influenced by cyberpunk novels that pay careful attention to the details of daily living and how they are affected by technology (124). This in turn is manifested in steampunk's mechanical aesthetics that perceive technology as closely related to the living and lifestyle of the character. For example, in Carriger's *Soulless* the parasol is not just a parasol; it can be transformed into a weapon.

5 See also Cherie Priest's definition of steampunk in the SLJ talk and Tim Aker's article in *Locus* that emphasize steampunk's redemptive function. Even though Steffen Hantke interprets steampunk's play with history as a restorative measure against the degradation of historicity for the benefit of contemporary society, Rosario Arias and Patricia Pullman, building on Lowenthals' argument of post-nostalgia, perceives steampunk as a way to expose past iniquities and thus redeem the past from the written history", which seems to contradict steampunk's deliberate attempt to fictionalize history (14).

innovative qualities, it has also become a victim of its own popularity. The result is a contentious, on-going dispute concerning the definition of steampunk as the integrity of the genre is tested by the unpredicted proliferation of steampunk novels on the market:

> As of summer 2011, the term has become an intense semantic and philosophical battleground, albeit one whose combatants have little time for or interest in their opponents. The combatants are the prescriptivists, who maintain that only the Jeter/Nicholls definition is the correct one, and the descriptivists, whose preferred definition of the term is far broader than Jeter/Nicholls and reflects its current (shambolic) status rather than its past (traditional) use...The descriptivists are winning. “Steampunk” appears as a designation for everything from the Western-flavored space opera *Firefly* (2005) to pseudo- Edwardian colonialist high adventure anime, from the industrial dance music of the band Abney Park to the current alternative fashion of mock-Victorian clothing. (Nevins, "Prescriptivists vs. Descriptivists" 513)

In other words, it is near impossible to find one conclusive definition of steampunk or a single aspect of the genre that could appropriately anchor its critical analysis. It is partly due to steampunk's ambivalent association with Neo-Victorianism, which tends to exclude any text that plays with histories outside the Victorian time frame (Bowser and Coxall 1). It is a claim should be abandoned because novels like Cherie Priest's *Boneshaker* and Scott Westerfeld's *Leviathan,* which play with other historical periods while maintaining the essential steampunk features, are obvious signs of the genre's mutation. Furthermore, bold, stylistic innovations, which are are produced by blending and integrating thematic and narrative styles and elements from other genres such as western, fantasy, alternative history, hardboiled and noir, and postmodern satire, make

drawing generic boundaries impractical and pedantic with little usefulness to critical analysis and discussion of steampunk texts.

If any examination of steampunk is to ensue, it is necessary to simply admit defeat and proclaim steampunk as a hybrid genre that resists definition. Therefore, it seems that it is more sensible to focus on self-reflexive hybridity as steampunk's most significant trait and valuable asset. There are two distinct discourses that reproduce steampunk's unique hybridity: firstly, it is the trajectory that is retrospective yet futuristic; and secondly, it is steampunk's conception of technology as something that is mechanical yet organic. In my thesis, I examine how hybridity is constructed on a textual level using thematic tropes. Chapter one lays the theoretical foundation by delineating key features of young adult science fiction such as the bildungsroman model, the use of technophobia for didactic purposes, and the necessity of a future-oriented consciousness. Then to set up steampunk as an anachronistic, hybridized genre, the rest of chapter one looks at concepts and techniques that are frequently associated with steampunk's representation of half-mechanical, half-living technology and hybridized historiography, such as Linda Hutcheon's postmodern historical metafiction, Walter Benjamin's historical materialism, and posthumanism. Chapter two is a case study of Scott Westerfeld's *Leviathan* and its bio-engineered dirigible as a form of hybridized technology. It involves an overview of alternative history's utopian forces that form steampunk's ecotopian dimension, which inspires rather than moralizes about environmental issues in relation to technological progress. Situated on the border between the natural and the artificial, the eponymous airship exposes significant didactic impulses behind young adult science fiction's use of technophobia. It also establishes a new paradigm of biocentric growth that abolishes the pedagogical institution of fear. Chapter three examines Ekaterina Sedia's *The Alchemy of Stone,*

which uses the automaton figure to contest young adult science fiction's use of bildungsroman conventions. The automaton's clockwork imagination formulates an alternative model of development that reconfigures power and non-identity, necessitating a new bildungsroman trajectory treats nostalgia, a form of temporal play, as the coming-of-age marker. The automaton's bildungsroman also questions young adult science fiction's rhetoric of hope, insinuating that it is more effective to portray hope as a movement instead of a way of finding closure. Using the dirigible and the automaton as the focalising agents, the steampunk imagination can thus be perceived as a way of revitalising young adult science fiction's representation of adolescence through its hybridized, retrofuturistic re-imaginings of technology, history, and progress.

Chapter One

> Any sufficiently advanced technology is indistinguishable from magic.
>
> — Arthur C. Clarke, *Profiles of the Future: An Inquiry Into the Limits of the Possible*

Young Adult Science Fiction

It has been suggested that there is a special kind of affinity between teens and science fiction because adolescence is the age "when young readers either abandon the imaginative titles that captivated them as children or become avid readers of SF, gobbling up every 'what if' tale in sight" (Herald 633). In these stories the reader encounters impossibilities that have materialized and been made real, and the reader "knows this without knowing that he knows it, and he finds the world in which he meets 'slow glass' and 'body shields' and 'space skimmers' and ‘hyperdrives' as realistic in its own way as the worlds of Emile Zola and Frank Norris are in their own ways" (Robert 89). This suggests that young adult science fiction is precariously and tactfully located at the juncture of rational extrapolation and intuitive imagination so that it could stretch and test the limit of the adolescent's imaginative and cognitive capacity.

While it is not so difficult to apprehend the imaginative potential of young adult science fiction, the definition and function of the wider genre are much more problematic due to young adult science fiction's didactic tendencies. Gary Westfahl maintains that science fiction cannot be defined because in doing so it would override

its impulse to evolve and be unique, which he believes is intrinsic to the genre. Instead he proposes that the best way to understand science fiction is to filter the text through a generic description that is inclusive of anything that "describes scientific facts, or explain or reflect the processes of scientific thought, but does not depict any unrealistic phenomena" (*The Mechanics of Wonder* 294). Alternatively, Diana Trixier Herald in *The Continuum Encyclopedia of Young Adult Fiction* provides an impressive assemblage of definitions by Peter Nichols, Standey Schmidt, John Clute, and Kathryn Cramer, among which recurring ideas emerge and can be summarized as thus: young adult science fiction is a genre of fiction written for teens[6] that is informed and driven by futuristic thoughts about human potential and change, according to which technology represented as an integral part of the plot so that without it the story would collapse. Because of its fictitious, fantastical elements, young adult science fiction has been treated by critics as a subversive genre that is more radical and dangerous than anything that J. D. Salinger ever wrote (Weber 149). At the same time, due to the remarkable, augmented sense of fantasy in a genre that is grounded in scientific rationales, *The Oxford Encyclopedia of Children's Literature* refers to science fiction as "fantasy stories whose fantastic elements can be seen as resulting from unusual scientific phenomena, whether real or imagined" (Levy 417), blurring the line between fantasy and science in the reader's imagination.

Because of young adult science fiction's insistence on differentiating itself on grounds of readership and thematic relevance, it naturally gravitates towards the bildungsroman structure that enables the writer to detail the teen protagonist's social, emotional, and psychological development through normative socialization (Levy 417).

6 For the novel to be classified as young adult science fiction, it must make itself thematically appealing to the intended readership by referring to issues and events that are relevant to the youth culture of its period (Sanders 442-3).

This creates a didactic dimension that is absent in science fiction for the general readership, which causes science fiction for teens to align the future and progress of society with that of the teen protagonist in order to present important questions and issues about growing up. The plot usually frames the teen protagonist's development in an enclosed environment to confront ideas of power, progress, and freedom, thus highlighting the teen protagonist's role as a symbol of faith (Nodelman 287). In other words, young adult science fiction purposely engages the adolescent reader in a dialectical contemplation on the future of society, shaping it into the instructive literature[7] "that can best prepare the reader for the future by exposing them to a variety of possible futures and by giving them some fictional experience in dealing with the new, the unusual, and the challenging" (Sullivan 3). So even though some critics have claimed that science fiction for young readers is not so different from those written for adults since they contain the same themes and situations[8], the belief that young adult science fiction serves a unique purpose is still held and protected by writers and theorists of young adult science fiction.

While such ideals and expectations persist in theory, they often fail to be practically appropriated into narrative plots because of the discernible presence and influence of technophobia[9]. This is especially perplexing and frustrating because young adult science fiction is a body of fiction that claims to inspire and prepare the reader for the future, yet it paradoxically portrays dystopic visions of the future that terrify rather than inspire. Tracing the history of science fiction for children from the 60s to the present day, Kay Sambell mourns the alarming increase in nightmarish landscapes

7 See also L'Engle 106.

8 See Frederik Pohl's positional piece that asserts reading any kind of Sf requires more mental work, so the only difference between science fiction for children and those for adults is that young adult science fiction does not contain f*** and sex.

9 Agnes Heller identifies technophobia as the dominant imaginary institution of science in postmodernity (*A Theory of Modernity* 71).

dystopia[10], prefiguring a hopeless future filled with anxiety and despair (173). Dystopian novels like Suzanne Collins's *The Hunger Games*, Veronica Roth's *Divergent*, Neal Shusterman's *Unwind*, and Lauren Oliver's *Delirium* abound on shelves in the young adult fiction section of bookshops and libraries. While these novels are particularly concerned with how their teen characters navigate futuristic, dystopian societies, dealing with issues such as self-identity, individuation, exercise of autonomy and agency, and relational dynamics between individual and society, they also express a viral fear of technology as a threat to mankind (Dinello 6). In young adult fiction, technophobia can have inimical effects on the representation of adolescent development because "it disempowers the young readers by reinforcing adults' agenda that the technologies these readers are likely to depend on in the future are potentially dangerous rather than beneficial" (Applebaum 15). Farah Mendlesohn similarly criticizes this degeneration of science fiction in the hands of young adult writers who portray the future as a frightening and hostile place for didactic purposes, teaching young readers that "innovation, new technology platforms, genetic engineering, and birth control would all rot their minds, sap their human spirit, and turn them into soulless and uncaring vegetables" ("The Campaign for Shining Futures" 157). She also expatiates on the damage that technophobia causes, arguing that it is limiting scientific exploration[11] in young adult science fiction through its didactic obligation and "a perceived need to reassure children that the universe is stable, safe, and just" (286).

10 Kimberley Reynolds has invented a taxonomy of young adult dystopian fiction. She delineates three frameworks that purposely induce fear in the adolescent reader: Prometheus stories, in which humans learn too much, the Frankenstein myth, in which technology and machines become too powerful, and hyper-technological dystopia, in which humans become too dependent on technology (166).

11 Dr. Robert Oppenheimer fearlessly testified to the role of science in the development of the atomic bomb in 1945 before a Congressional Committee, which certainly brought doubt as to whether technological progress would always be for the improvement of humanity: "When you come right down to it, the reason that we did this job is because it was an organic necessity. If you are a scientist, you cannot stop such a thing. If you are a scientist, you believe that it is good to find out how the world works; that it is good to find what the realities are; that it is good to turn over to mankind at large the greatest possible power to control the world" (qtd. in Annas 139).

When writing for children and young adults, it is inevitable that the writer feels burdened by ethical and educational considerations, but this also means that it is risky for young adult writers to duplicate the dystopian model of Aldous Huxley or George Orwell without compromising the coming-of-age convention (Sambell 173). As a result of young adult science fiction's technophobic condemnation of scientific progress and new technologies, the genre has become too conflicted to be effective and closure is rendered the same as acceptance of reality, diluting the apparent didactic messages of these novels (Nodelman 290-1). This produces self-contradiction and ambivalence that compromise the relationship between technology and the teen protagonist, on which young adult science fiction is founded.

At first it seems that only the representation of technology is being undermined by technophobia, but the efficacy of young adult science fiction's bildungsroman[12] model is also being threatened by its own normative conventions. Novels that deal with ideas and themes of adolescence are naturally drawn to the bildungsroman structure because it formulates the protagonist's reconciliation between his or her ideals and the external, empirical reality sustained by sociopolitical institutions. It traces the intellectual and social development of a central figure, who enters the world to experience both defeat and triumph and comes to a better self-understanding and a general affirmative view of the world (Hardin 11-5). The bildungsroman framework is regulated by the liberal humanist tradition of bildungsroman, which instills anthropocentric values through normative methods of socialization, so by appropriating these bildungsroman ideologies and conventions, young adult science fiction has also inadvertently inherited its liberal humanist ideologies (Levy, "Science Fiction" 114-5).

12 Bildungsroman, also known as the novel of youth, initiation, education, adolescence, and apprenticeship, presents a youth as the "necessary and sufficient definition" of heroes and the qualitative "meaning of life" (Moretti 3-4).

This means that the protagonist's rebellion is usually treated as a part of the liberal humanist schemata of social development, causing young adult fiction writers to use the teen protagonist's transgression and rebellion to valorize intersubjective responsibility and legitimize normative function of socialization[13] (McCallum, *Ideologies of Identity* 122). Under the influence of liberal humanist notions of growth, young adult science fiction has thus consolidated a tradition in which "society catches up with the protagonist, depicted in transition from being oppressed to becoming an oppressor" (Nikolajeva 15). Social development is subsequently depicted as a linear, normative, and arbitrary process, through which rebellious characters are punished and forced to reform and accept social and cultural norms as they enter adulthood so that they end up reproducing the same institution of oppressive power that they have been subjected to.

Though technophobia and liberal humanism are treated as mandatory conventions of young adult science fiction, scholars, critics, and writers are becoming more vocal in their concern and dissatisfaction with the current state of genre. For example, Elaine Ostry disparages these formulaic representations and trends in young adult dystopian novels ("Clones and Other Formulas" 188). Scott Westerfeld sees an urgent need to reassess dystopian fiction for young readers because imagining a world where power is tested is one thing, but imagining a world "in which those authorities are utterly gone is another" ("Teenage Wasteland"). As a writer who is recognized for his contribution to the genre of dystopian fiction for children, Philip Reeve asserts that there should be more utopian fiction for young adults because a generation of successful inventors and engineers grew up reading and consuming utopian visions of the future that served as inspirations for scientific invention and exploration ("The

13 See also *Disturbing the Universe: Power and Repression in Adolescent Literature* by Roberta Seelinger Trites; *Power, Voice, Subjectivity in Literature for Young Readers* by Maria Nikolajeva. They also discuss how adult normativity governs the pattern of development in young adult fiction.

Worst Is Yet to Come"). So even if deep down teen readers know that the world is filled with injustice, they also need fragments of hope and optimism. Using grim, violent, speculative visions of the future to awaken the adolescent reader to technological horrors is one way of preparing the reader, but it should not be the only way.

How to Build a Steampunk Time Maze

Steampunk emerges as an alternative to dystopian chaos and nightmares, addressing this need of revision by interrogating and subverting technophobia and normative socialization in a retrofuturistic, and often utopian, environment. It challenges young adult science fiction's institution of fear and linear development by playing with ideologies of history[14] and progress and underscoring the concept that it is crucial to turn to the past before the reader can be propelled into the future (Bodley 30). Driven by the desire to unwind and unfold time and history, steampunk delves into the gap between fantasy, the material condition of the time, and historical change, generating tension between fantasy and fact. However, playing with the past has its risk. Jason B. Jones cautions against downplaying steampunk to a matter of style and aesthetics by overloading the narrative with Victorian references that "freeze the period's memory" and turn the story into a game of allusion-hunting (101). In spite of the risk temporal play entails, steampunk remains stubbornly committed to its own historiographic fictionality. When examining steampunk as a curious case of historiographic mutation, Noam S. Cohen observes that because steampunk is "a culture that venerates the creations of imaginative and creative individuals, it is, in fact, heavily

14 Even though Neo-Victorian novels also exhibit the same tendency to play with different historical periods, Louis Yates differentiates the two by highlighting how Neo-Victorian novels use the nineteenth century texts as a point of departure to translate old traditions, while steampunk novels use history to make the novel rich in meaning and ambiance (202).

invested in the notion of history as an imaginative construct. It not only understands, therefore, but delights in and celebrates the fictional nature of its nostalgia" (161-2). In other words, to understand the significance and role of nostalgia in steampunk is to reveal the impetus that drives steampunk to simulate, complicate, and undermine its relationship with the past.

The term "nostalgia" was coined in 1688 by Johannes Ofer by combining the Greek words *nostos* (home) and *algos* (pain), referring to an acute, disabling longing for home. At the time it was considered to be a medical disorder but since then nostalgia has escaped its medical origin and moved into the realm of cultural practice, personal pleasures, comfort, and political rhetoric (Bonnett 5-7). Susannah Radstone provides a comprehensive list of definitions[15] of nostalgia derived from various sources. It exemplifies the versatility and usefulness of the term in personifying and encapsulating what Frederic Jameson calls the "crisis in historicity", in which the postmodern substitutes real history with falsified historicism to assuage their need for history and the past (8). As steampunk plays this "crisis in historicity" it simultaneously begins to qualify as what Jameson would see as a "post-nostalgia statement" that "instead of submerging its readers in the historical past, it distances them from it. Eliminating the factor of emotional investment in the fictional past, this strategy of distancing generates a type of self-reflexive allegory" that embodies postmodernity (Hantke 252). Due to the post-nostalgic nature of steampunk's temporal play, treating it as a product of postmodernity[16] is not unreasonable since the formation of

15 To Svetlana Boym, it is a symptom of our age, a historical emotion, and above all, the alter ego of progress; to Norman Denzin, it is associated with the postmodern anxiety; to David Lowenthall, it is to do with seeking refuge from turbulence in an invented and false representation of the past; critics like Le Goff Debord associate nostalgia with falsity; to Hobsbawn and Ranger, it is a form of invented tradition that substitutes and exemplifies a lost sense of continuity with the past; and to Deborra Battaglia the anthropologist, nostalgia is a vehicle of knowledge (112-115).

16 Postmodernity evinces a prevailing disbelief of progress and ambiguously a need to excavate and examine the past, all the while emphasizing the hidden permanence and avoiding the notion of temporal linearity (Habermas and Ben-Habib 6). See also Christian Gutleben's interpretation of

postmodernity instinctively involves the technological and historical imagination,

> which is characterized by the accumulation of knowledge...It is rooted in the self-understanding of the moderns, self-understanding as being historical...This is also the self-understanding of the repeated movement of turning to face the past in order to decipher it, entering into a conversation with the past, cherishing the past, making the past constantly present. (Heller, *A Theory of Modernity* 72)

Even though postmodernity may seem like no more than a refusal to accept the requirements of linear time[17], when it is translated by steampunk into a form of temporal hybridity, postmodern nostalgia takes on the narrative function of recreating what Linda Hutcheon has termed "postmodern historical metafiction". In *Politics of Postmodernism*, Hutcheon introduces a type of postmodern narrative that is an amalgam of parody, metafiction, and politics. It uses the dominant forms of the past to speak to a society from within the historical context of that society while questioning and subverting it, the purpose of which is to disorient its reader on the level of its narration and temporal structure all the while self-consciously transcending temporality (12). For example, Patrick Suskind's *Perfume* exposes the impoverished state of language but it simulates the period's olfactory world and its historical context using language (15). This kind of postmodern irony destroys and creates the illusion of critical distance, circumventing the dangerous impulse in deconstructionist historical fiction that either ignores or trivializes historio-political questions.

Steffen Hantke identifies Hutcheon's postmodern historical metafiction as the most practical technique in the construction of steampunk's fictional historicity, calling attention to its penchant for irony and absurdity (248), but in comparison Shannon Lee

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cyclicality in postmodernity, Couze Venn and Mike Featherstone's history of modernity, and Linda Hutcheon's *Politics of Postmodernism*.

17 This may lead some to infer that there is in fact nothing to be nostalgic about (Tester 78).

Dawdy favours Walter Benjamin's historical materialism. Like other theorists of postmodernity, Dawdy perceives the linear perception of time as a political ideology that is being challenged by anti-modern experiments. But instead of superfluously exploiting history through parody, which stretches the critical distance between the past and the present, Dawdy believes what we need today is a recycling of history, emphasizing the desire "to revolve" not "to evolve" because "re-invention means revolution, the root of which is to revolve--to return to an earlier possibility before time splintered into antiquity and modernity" (769). As opposed to Hutcheon's theory that treats steampunk's time experiment as a map of historical references and ironic associations, historical materialism evokes the past using layers of dialectical images that provoke involuntary memory in a more spontaneous, intuitive way. It creates a magnetic bond with the past that supplies imaginative resources, illuminating the "poetry of the future" and creating "a consciousness of the present that explodes the continuum of history" (Benjamin qtd. in Harootunian 69). Historical materialism, in short, is a way of seeing the past as a photomontage and simultaneously performing it, the purpose of which is to bring together the historical fragments into a constellation, making history present through performance.

Though Hutcheon's historical metafiction and Benjamin's historical materialism evidently differ, it is also possible to take a more general combinational approach to steampunk's juxtaposition of past and future using the theoretical discourse of anachronism[18]. Anachronism denies the possibility of objectivist historicism, privileging the creative, and sometimes abusive, multiplicity that is derived from

18 Anachronism is especially relevant to the study of children's and young adult literature because in these stories the characters have an ambivalent relationship with time due to the transient nature of their developmental stages. Concentrating on this particular characteristic of drawing on the image of the child as a boundary object, Alice R. Bell uses the aesthetics of anachronism as a cogent focalizer in her exploration of anti-technology futuristic fiction for children and young adults (18).

chronological intersubjectivity (Aravamudan 352). This discourse is subversive by nature because it contains the potential to reveal the presence of the strange and the unfamiliar, which challenges and overturns the viewer's concepts of the norm "to create the illusion, as potentially arresting as it is evanescent, that one can write oneself out of a temporal context and thereby question the apparently inexorable claims made by time and the material condition" (Luzzi 82). Anachronism also has the advantage of accentuating the author's intent and default position because "[f]or the novelist to speak on behalf of the mind of a character is akin to any of us speaking on behalf of the dead, for neither the fictional nor the deceased can qualify or edit our words" (83). Therefore, unlike Hutcheon's postmodern historical metafiction that simulates an illusion of historical distance or Benjamin's performative historiography, anachronism is a technique of reading fictional history as a falsified record of chronological misplacement and errors, which intensifies the authorial intent and presence in the retrofuturistic text.

Certainly all three historiographic techniques have their own unique characteristics: Hutcheon's postmodern historical metafiction is comparably more redolent of steampunk's cynicism toward futuristic technologies and notions of linear progress, but Benjamin's historical materialism allows steampunk to safely and playfully reproduce history that is subsequently superimposed on the present, while anachronism is capable of explaining and recreating the rhetorical distance between fantasy and fact that is ever-present by highlighting the author's position and responsibility in sustaining the narrative's fictionality. Regardless of which technique is considered more appropriate for presenting steampunk's techno-manifesto, the product is always the same: a dynamic chronological loop of past and present that can be

identified as retrofuturism. Retrofuturism is a subversive force[19], undermining and critiquing positivistic progressivism and cultural modernity by presenting them as epochal failures:

> While retrofuturism is frequently figured through representation of past iconic visions of the future, it is more than just a stylistic merging of past and future or a manifestation of Frederic Jameson's postmodernism as pastiche and anachronistic historical styles. Retrofuturism can function as a rhetoric in which the past and future become vehicles for working through problems of the present and for creating visions of how things might have been and might still be. (Sharp 26)

Through the retrofuturistic lens of steampunk, the Victorian age is presented as "the analogue of our time, as a moment of choice between a panoptical disciplinary use of the intelligent machine and the enhancement of intelligence and creativity through the fusion of the machine and the human" (Sussman 20). In other words, steampunk's desire to return to the past is not simply driven by postmodernity's sense of being deprived of historical authenticity; it is most acutely motivated by nostalgia for a technological aestheticism that is more diverse and pragmatic as opposed to the sleek, homogenized designs of existing technologies that seem to expand the divide between machine and human.

Steampunk and Posthumanism

The unification of machine and human that steampunk desires does not stem from the study of posthumanism directly, but the humanization of the machine does

19 Regrettably retrofuturism has also been criticized as no more than a regressive cultural impulse, a form of bad faith, and a way of sheltering the present from the spectres of the past (Latham 341-3).

seem to evoke certain aspects of the posthuman body. Posthumanism documents radical estranging features of contemporary society, claiming that the gap between fiction and fact is being bridged by technoscientific realities such as cosmic exploration, genetic engineering, cloning, xenotransplanation, artificial birth, bionics, robotics, and eugenics. In these technoscientific realities, the body is rendered vulnerable and undefinable and intersubjectivity is heightened to such an extent that it erases the "essence" of humanity, creating "a near-sublime experience of vertiginous existential challenge" (Hollinger 269). Donna Haraway sees the posthuman body, "a hybrid of machine and organism, a creature of social reality as well as a creature of fiction", as crucial to our survival as a technologically advanced "cyborg" race (315). The posthumanist stance in the cybernetic age embraces information science as a new mythology of human-ness, re-evaluating the definition of being human[20] in the context of fast-forwarding into a hyper-technological future (Porush 3). As a result, abandoning the self is increasingly becoming the defining feature of posthuman society since it is perceived as the only way humans can escape the degradation of nature and environment (Foster 3). After all, it seems almost like self-denial to turn away from the posthuman vision when one is surrounded by uncanny, scientific phenomena such as embryo intervention, artificial limbs, and virtual realities.

The posthumanist approach to body politics and intersubjectivity has been criticized as hazardous and destructive. Scott Bukatman reckons that the nonhuman's invasion of the human causes the physical body to become irrelevant because

> it has become a cyborg body, one element in an endless interface of bio-technologies. The SF text stages the superimposition of technology upon the

20 Because posthumanism is ontologically critical, it is not just another humanist experiment, even though admittedly reading posthumanism requires reading humanism in a certain way (Badmington 19-21).

> human in all its effects: the computer alone has been figured as a prosthetic extension of the human, as an addictive substance, a space to enter, as a technological intrusion into human genetic structures, and, finally, as a replacement for the human in a posthuman world. (98)

Consequently, as individuals of the posthuman society seek to upgrade and modify themselves into a new sub-species of trans-human, or by endorsing the belief that technologies will improve our species, certain aspects of human living will deteriorate and eventually become obsolete (Dinello 9). In spite of the threat it engenders, posthumanism remains a key aspect of science fiction that characterizes it as a literature of estrangement[21].

While such techno-fantasies of self-abandonment and intersubjectivity are the stuff of cyberpunk, steampunk has managed to re-appropriate cyberpunk's fusion of human and non-human for the purpose of enacting its technological hybridity. Though steampunk's technological hybridity also involves testing the distinction between human and non-human, the trajectory of its technological discourse works counterpoint to cyberpunk's posthumanism. In steampunk fiction, instead of finding ourselves more machine-like and thus strange to ourselves, the machine is humanized so that it becomes a familiar mirror of our own mortality and fallibility. The Catastrophone Orchestra proclaims:

> Steam technology is the difference between the nerd and the mad scientist; steampunk machines are real, breathing, coughing, struggling and rumbling parts of the world. They are not the airy intellectual fairies of algorithmic mathematics but the hulking manifestations of muscle and mind, the progeny of sweat, blood,

21 Posthumanism is what makes us strange to ourselves. It questions the efficacy of human-ness and notions of intersubjectivity so that new reality rules can be established in place of the old order (Flanagan 41).

> tears and delusions. The technology of steampunk is natural; it moves, lives, ages and even dies. (4)

In science fiction technology is either demonized as the plague of humanity or it is hailed and deified as the saviour that will bring paradise to earth. Steampunk is an attempt to bridge these two sentiments, hoping to establish a collaboration between machines and humans, ushering society towards a more harmonious vision of plants, rivers, animals and machines co-existing, and thus "return to an age, when, they believe, machines were visible, human, fallible and above all, accessible" (Onion 145). Driven by its insistence to aestheticize and humanize the machine, steampunk creates innovative ways to confront ideas of fallibility and ecocentrism in order to reformulate the relationship between technology, nature, and human in young adult science fiction.

Chapter Two

> Thank God, men cannot as yet fly, and lay
> waste the sky as well as the earth!
> ― Henry David Thoreau

Though we live in the modern age where the sky is populated by satellites, cosmic waste, and commuting aeroplanes, to see the world from above is not an insignificant matter. Michel de Certeau believes that in order to be immersed in the liberating aerial panorama, one has to be able to see from within "the true eye", through which the viewer filters and distinguishes what is "lived" and what is "perceived" from what can be "conceived", while James C. Scott maintains that the aerial view is analogous to the synoptic perspective of the statist planner who is also the master mind (Adey 86). In other words, aerial transportation offers more than scenic views, especially considering that the image of flying airships is iconic of the glorious, triumphant empire of Victorian England, defying laws of gravity using the sheer forces of science and technology as they disappear into the horizon.

Leviathan by Scott Westerfeld, an alternate history steampunk novel featuring a dirigible in the form of a flying whale, serves as an example of how in response to the growing discontent with technophobia and the lack of ecocritical messages in futuristic settings, steampunk proposes that the illuminating answer may be found in the imagined past. Alternate history, allohistory, uchronia[22], counterfactual, or parahistory,

22 The word was coined by Charles Renouvier in 1857, meaning "a utopia of past time". See also

is

> a form of SF in which an alternative locus (in space, time, etc.) that shares the material and causal verisimilitude of the writer's world is used to articulate different possible solutions of societal problems...It subsumes but transcends, and eventually supplants, the classical utopian (and anti-utopian) form of static anatomy--pure wish dream or pure nightmare. (Suvin 149)

As a phenomenon, alternative history is not exactly new: ancient historians such as Thucydides and Livy speculated how their societies would have been different if the Persians had defeated the Greeks or if Alexander the Great had waged war against Rome (Rosenfeld 91). But as a modern literary genre its appearance is much more recent, originating in 1836 when Louis-Napoleon Geoffroy-Chateau published *Napoleon et la conquete du monde 1812-1832, Histoire de la monarchie universelle*, which speculated what would have happened if Napoleon had won the war. Alternate history writers play with history not out of disdain but rather out of respect for history as a force. It is a concept that seems to contradict its own narrative mode, since alternate history tends to rupture linear movement and encourage readers to imagine how and why society has become what it is (Hellekson 4-5). Therefore, it is a critique of the metaphors we use to discuss history as well as a way for readers to foreground the "constructedness" of history and the role that anachronism plays in that construction, combating the hegemony of teleological determinism[23].

In addition to the sub-genre's temporal distortion that transcends narrative

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Elizabeth Hands, Karen Hellekson, Mads Mordhorst, and Brian Stableford.

23 Mads Mordhorst finds fault with alternate history's critique of determinism, arguing that despite its claim, alternative history reproduces determinism since the very possibility of an alternate past or future requires a deterministic teleology. He proposes instead that alternate history is counter-narrative because "the central term is not movement but development and change over time. Narratives are bound to a mechanical metaphor but can for example, use a metaphor of living organic bodies, which develop, transform and correct themselves. This implies a drastic change in the relationship between necessity and contingency" (10).

conventions, its self-reflexive play with the past invites a different future that is usually optimistic in presenting a beneficent path of technological progress that is different from our own (Alkon 132). This means that if science fiction is to remain as "the literature of the present that can best prepare readers for the future by exposing them to a variety of possible futures and by giving them some fictional experience in dealing with the new, the unusual, and the challenging" (Sullivan 3), it is necessary and crucial to examine alternative visions of the past. *Leviathan* may just be able to provide the prescribed dosage of utopian potential in the form of a re-imagining of technological progress. Steampunk, which is generally set in a hyper-technological alternate Victorian London, has been the most dominant and influential contributor to the exploration of alternate history. Although it retains a degree of conservatism[24] in its extrapolation and narrative construction, what marks steampunk as unique and distinct from other forms of science fiction is its "anything goes" attitude (Stableford 83). To examine how steampunk undermines technophobia's influence over young adult science fiction, this chapter confronts the Frankenstein myth, the rhetorical framework that consistently perpetuates technophobia. It also explores how steampunk incorporates the ecocentric utopian imagination of technology and humanity to subvert the institution of fear that inspires the demonization of teens, thereby revitalizing the discourse of growth and development in young adult science fiction.

24 That is not to say that alternative history is hopelessly conservative because it is more than capable of offering pleasures of newness with a safety valve of recognition that the present is as it is. It is a comfort food for the Western soul. It may seek to reassure the reader that it does not live in the worst possible times (e.g. if Hitler's invasion of Britain had succeeded), but it may also possibly be meaninglessly romantic and idyllic in offering the Other against which the Self can be defined (Ransom 260-3).

The Frankenstein Myth

The vivification of the nameless creature in *Frankenstein* by Mary Shelley is the quintessential embodiment of dystopian hopes and fears surrounding artificial life and the technology used to produce it. In the novel Victor Frankenstein laboured relentlessly to create the highest order of life using scientific and technological means. Willingly and fervently, he submitted himself to the sovereignty of the scientific spirit of progress in the hope of bringing mankind to a transcendent realm of knowledge, enlightenment, and existence. The creation was to be his and humanity's magnum opus—that which completed him and signified perfection. Yet when he had finally collected "the instruments of life" and thus infused that spark of being into the "thing" that lay on the dissection table, his dream of beauty and fulfilment was replaced by "breathless horror and disgust" (97). He turned away from "the miserable monster...the demoniacal corpse to which [he] had to miserably given life," and bitterly bemoaned his fate, finally realizing that the fruit of his labour was nothing but a diabolical delusion of what science and progress held for mankind (98-9). While the moral of the message may be arresting and vivid, the story of Frankenstein is not simply a parable that condemns technology when it exceeds the ethical limit of humanity, nor can it be reduced to a gothic rendition of the consequences of technophilia when compounded with the politicization of human hubris and ignorance.

In contemporary society the Frankenstein myth is exceptionally striking because it has immortalized the fear of usurpation and annihilation at the hands of that which is artificially and unnaturally produced by mankind. It portrays the fear of human creation when it is capable of becoming independent, autonomous, powerful, intelligent, and unpredictably rebellious. What was only possible in the gothic imagination of the early

nineteenth century is made imminent by bionics, stem cell research, embryo selection, nano-technology, and cybernetics. Producing artificial life may not be a reality, but it has presented itself as an impending possibility that is too real and immediate for society to ignore. The "instruments of life" are anything that threatens humanity by manipulating and reproducing the very biological make-up of humans, in other words, anything that makes human unnatural, causing human creation to be treated as anything manufactured by humans, whether it be artificial intelligence made in labs or the natural, biological child of humans.

In children's literature and young adult fiction, the Frankenstein myth functions less as an allegory of the all-consuming violence of bio-terrorism than the very paradigm that necessitates the myth of the innocent child and the demonic teen. Disturbing and uncanny parallels between the demonic teen and the nameless creature are used to establish young adult science fiction's repressive institution of adolescence, in spite of the fact that adolescence[25] is understood as time of learning and exploring. Therefore, due to the volatile nature of this transitional stage of development, adolescents are often exploited and demonized[26]:

> No longer seen as crucial social investment for the future of a democratic society, youth are now demonized in popular media and derided by politicians looking for quick-fix solutions to crime. In a society deeply troubled by their presence, youth prompts in the public imagination a rhetoric of fear, control, and surveillance...Trust and respect now give way to fear, disdain, and suspicion.

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25 The concept of adolescence is fairly new. It was only toward the end of the nineteenth century that adolescence began to separate from childhood and adulthood as a distinct phase of growth and development (Graham 13-8). Adolescence is when the individual tries to negotiate and find a place in society as he or she explores his or her potential in order to create a society that is different in some significant ways (Reynolds 72). See also Hunt; Bahr and Pendergast; and Cox.

26 See also Tell "Generation What? Connecting with Today's Youth" and Graham's *The End of Adolescence.*

(Giroux xvii)

Even the rhetoric of neuroscientific studies legitimizes the practice of demonizing and alienating adolescence. In October 2011 *National Geographic* published an article of neuroscientific research[27] that uses examples from surveys, and major literary works to highlight the modern trend to marginalize teens in both the public imagination and family spaces. Even though the objective is to explain why teenagers act fickle, awkward, volatile, and inconsistent, their language implies that this "neural gawkiness" is enough evidence to justify adults' perception of adolescents as defective, frightening, and mutinous mini-tyrants (Dobbs, "Teenage Brains"). Therefore, due to the adult's own fears and regrets, the innocent child is constantly set up as an object of desire, the site upon which utopian hopes and dreams are realized (Rose 10), while the adolescent is alienated, feared, and despised. This convention exemplifies how young adult science fiction functions as a didactic institution regulated by adult-oriented ideologies to allay the adult's own anxiety and fears of youth and usurpation. Whether it is young adult fiction or scientific writings about adolescence, the entire body of young adult texts continues to reproduce the same institution that it seeks to overthrow because the fear of adolescence cloaked in the Frankenstein myth has assimilated and embedded itself into the very fabric of young adult science fiction, which is damaging and antipathetic to notions of adolescent growth.

Steampunk provides the alternative that young adult science fiction needs by portraying the anti-technology rhetoric of the Frankenstein myth in a self-reflexive critical way so that it can contest the ideological boundaries that have been established by the Frankenstein myth from within. *Leviathan* uses the Clankers vs. Darwinists conflict to reveal that technophobia, which is intrinsic to the Frankenstein myth and the

27 See Gopnik for a similar article on adolescent's neurological development.

ideological construction of adolescence, is not the fear of the nonhuman or its invasion but the fear of that which is unnatural, or the possibility of becoming unnatural. By focusing on the natural and artificial binary as opposed to the human and nonhuman dichotomy, *Leviathan* liberates the concept of adolescence by introducing a denaturalized paradigm of development that is organic, versatile, sustainable, and characteristically anti-normative. *Leviathan* achieves the subversive denaturalization of adolescence and technophobia by framing the adolescent's growth with three maxims of the rhetoric of the monstrous and the unnatural. It reconstructs the ontology of adolescence as distinctively post-natural rather than posthuman, paving the way for a more biocentric realization of adolescent development.

In the alternative universe of *Leviathan*, ever since Darwin discovered the method of extracting life strands and began using them to fabricate artificial creation, these genetically engineered Promethean life-forms, also known as "beasties", have formed the backbone of England's military and economy. Inhabiting the same sociopolitical space are the opposers—the Monkey Luddites—who are afraid of the Darwinist creation and obsessed with the superstition that artificial life is a sacrilegious taboo (31). The idea that biological modification is unnatural and thus profane is voiced by the non-human population as well as the humans. When the flying whale *Leviathan* lands in the middle of London, the animals in the London zoo protest with agitated howls and stampedes possibly because they feel threatened by the gigantic beastie that looms overhead like "a giant predator coming to gobble them up" (151). This fear of the unnatural, rooted in the nonhuman landscape, sets up ethical concerns and issues that reject artificial life as unnatural, profane, and intolerable. As a result of the strenuous relationship between artificial life and natural life, which shows that anything artificial is bound to be rejected, the half-technological, half-biological dirigible evokes the first

maxim of the Frankenstein myth, that "[t]here are certain things that humans were not meant to do" (Rollin 71). The animals' disapproval and the Luddites' sedulous slander uncover the radical extent to which the Frankenstein myth has permeated the very framework of a society that is ironically founded on the bio-technology and fabricated beasties.

Friedrich Nietzsche reaches a similar conclusion in *The Birth of Tragedy* from observing how society is becoming incapable of dealing with the its own paradoxical attitude toward science and technology, which are becoming a sort of quasi-manifestation of God to man. He warns against the modern man's impulse to achieve complete knowledge or absolute truth through technological means (4). Nonetheless, it has become obvious through observing the atmosphere of fear that it is irrational to reject technology when it has already consumed both human and nonhuman. The *Leviathan*, the artificial entity that functions much like a self-regulating ecosystem, has already assimilated all the members of the British Air Force on board the ship as well as the fabricated beasties into its very biological and ecospherical make-up. In other words, the Frankensteinian fear is not a fear of perfectibility or how it would alter the essentialist definition of humanity; it is the fear of the consequence, the fear of being utterly consumed by the other. *Leviathan* reveals that it is precisely because bio-technology and eugenics[28] are perceived as a taboo that the fear of being consumed invokes the need to have surveillance and regulation in place as preventive measures. But in an enclosed ecosystem such as the one that the airship typifies, when everything "is connected to everything else in a physical space in a vast and seamless web, when 'distance is dead' and zero friction has brought cause and effect into a dangerous

28 Eugenics was already an ethical concern before it was coined by Francis Galton, appearing as early as 1611 in *The City of the Sun* by Tommaso Campanella and later proliferated during the nineteenth and twentieth centuries. Most authors saw both positive and negative aspects eugenics, but today it is perceived almost as a taboo topic (Sargent 366).

embrace, nothing can be controlled unless everything is controlled" (Sager 251). So as much as society would prefer to see technology as the hope of a better future, finding safety in the triumphant sign of "biology as destiny" that is manifested in the Human Genome Project with its promise of perfectibility of the human body in what Arthur Kroker calls "third-wave eugenics" (6), the reality is that humans are still unprepared for their dreams of perfectibility that are about to be fulfilled, causing them to fear the consequence and to set up ethical regulations as self-protective measures.

The fear of being overtaken by half-machine half-monster creations can be translated into the adult's fear of being subverted and usurped. Just as genetically modified creatures demands attention and regulation in order to contain it within a web of surveillance for self-protection, Westerfield's teen protagonists Deryn and Alek are portrayed as those who require supervision and direction to prevent them from surpassing the limit of political and parental authority. Prior to Dr Barlow's arrival, Dr Busk informs the crew that they would be re-evaluating the midshipmen because of the ship's aero-static nature, which needs to be maintained at an exact equilibrium with the air surrounding it, rousing the youths to compete against one another in a rather Darwinian fashion for their place on board (145). The military framework and atmosphere on board the ship is relentlessly authoritarian, with mandates and protocols in place for the safety of the passengers and the discipline of the midshipmen, raising the issue of whether adolescents are the ones at risk or perceived as the risk (190). This need to control the flow and movement of adolescents, using discipline and schedules as well as a thoroughly analytical approach to their abilities, behaviour, morals, and performance, reveals that parental and political authority is intrinsically related to the perception of youth as a threat. Consequently, the fear of things or individuals that have deviated from the norm drives the institutionalization of adolescence, which is

perpetuated and overseen by the writers themselves (Applebaum 42; Nikolajeva 204). By drawing a parallel between the Frankenstein myth and the institution of adolescence, what *Leviathan* has uncovered is that the normative impulse of young adult science fiction is translating the fear of adolescents into the need to socialize and control the degree of their growth. In spite of dwelling in a post-theoretical space, young adult fiction has remained governed by the normative conventions that arbitrarily and ineffectively socialize young adult characters (Nikolajeva 15). As a result, the coming-of-age narrative, which is supposed to emphasize autonomy, free will, and the idea of developing oneself, has become no more than a socializing agent exploited by writers to acclimatize the protagonist to social standards within a conservative, deterministic model of growth, making young adult fiction too ambivalent to be effective.

Furthermore, the terror of genetically engineered beasties as the product of a distorted subjectivity invokes the second maxim of the Frankenstein myth, which is the idea that genetically modified beings are monstrous and grotesque (Rollin 71-2). When Alek first sets his eyes on the fallen and injured beasties, he is consumed by an irrational fear that transforms the artificial ecosystem into an image of fiendish wastelands. The scene is profusely evocative, saturated with ambient lights and colours with an emphasis on the contrast between the ship's "featureless white" flesh and the green aura of tiny lights that buzz about the ship, presenting a scene, reminiscent of Dante's hell, that is occupied by "godless beasts...the spirits of demons...*pure evil given flesh*" (230 with original emphasis).

It is the pivotal moment when the viewer sees the nonhuman returning its gaze that truly inspires fear and awe of biological atrocities. Before Alek perceives the existence of the airship, he appears comparatively rational, able to internalize the

horrors of war violence that is caused by pursuing stormwalkers and other Clanker machines. But after seeing the eye, through whose gaze he becomes objectified, he spontaneously begins to hysterically and compulsively demonize the living beast and henceforth refers to it as a godless abomination. This shows that when the artificial is operating within the subjective consciousness of the viewer, it is no longer merely physically harmful because it has the potential to be psychologically intrusive and dangerous, transforming and distorting the artificial into the monstrous. Ignacio L. Götz interprets this psychological, transmutative response as man's inability to confront technology, forcing him to conform and operate under technological principles and imperatives, so that we see our worst traits in our perception of the monstrous technology as "we catch sight of our images in the mirror of the machine" (SherryTurkle qtd. in Götz 15). Therefore, what humans attempt to exorcise is not the nonhuman itself, but the image of man that is reflected back to the viewer. This reveals that the fear of the monster is no more than the result of the unnatural's gaze, altering the viewer's self-perception and rendering the viewer as unnatural as the object of his or her gaze.

This method of transforming the artificial into the monstrous through the viewer's perspective is similar young adult science fiction's method of confronting and thus demonizing the young adult figure. The posthuman fear of bio-errors highlights the demonization of adolescents as the consequence of adults fearing to see their worst traits manifested in the younger generation (Crew 214-5; Nikolajeva 89). There are two aspects to this fear: one is the fear of teens turning self-destructive when driven by the adult's protective tendencies; the other is the fear of teens as a risk to others, which is related to the adults projecting their own fears, anxieties, and vulnerability onto the adolescent figure as an ideological construct. Under the control of his guardian, Alek's

situation is transparently symptomatic of the ambivalent political dynamics derived from empowerment and excessive care. Volger's steely, condescending tone and discipline emphasize Alek's status as a child, someone who is without a fully-formed notion of subjectivity or the right to exercise his independence and agency (123). Yet when their party is escaping the Austrian forces, Volger's action and behaviour toward Alek seem to imply his acknowledgement of Alek's status as an adult figure, someone who is capable of functioning independently and autonomously and whose decisions are valued in the context of the future of their nation (168). This paradoxical attitude demonstrates how control and surveillance of teens are prompted by fear: on the one hand, it is the fear of Alek acting irrationally and therefore endangering himself and others, causing Volger to treat Alek as a child that requires constant supervision; and on the other hand, it is the fear of not preparing Alek for his inheritance and future position in the Empire, compelling Volger to alter his tone and behaviour toward this young boy who is the embodiment of their nation's hopes and future.

The political tensions between Volger and Alek not only underscore the exploitative nature of the power paradox that robs the adolescent of his agency and subjectivity, they also portray the adolescent as a sociocultural projection of the adult's own guilt and anxieties, which is the typical function of the adolescent figure as an ideological mirror:

> Even though adult writers may try to liberate themselves from their experience, "to give a voice" to the child protagonist, "speak in the child's name," still we mainly hear the adult voice and the adult values leaking through the young protagonists' deliberately naïve perspective. It implies that in the obvious fear of the future in contemporary children's and young adult fiction, we see the reflection of adults' own fears and their own feeling of guilt. (Nikolajeva 89)

By unraveling the young adult figure as an embodiment of adults' own inconvenient aspects, vulnerabilities, past and future, and contradiction of selfhood, it can be deduced that in young adult science fiction, adulthood always comes first and adolescence second, since to adults the adolescent figure is the equivalent of a supplanter. Furthermore, since children's and young adult literature are fundamentally related to the representation of memory, Valerie Krips believes that this fear may not be the only selfish motive at work. Childhood and adolescence are lost as soon as they are completed, so entrusting society's future to the next generation is practically the same as treating and exploiting them as sites of memory, dreams, and aspirations that reproduce the adult's own sense of continuity (6). Therefore it is out of unjust necessity that adult writers perpetuate and preserve the cultural institution that demonizes teens. As long as young adult fiction is underwritten by the adult's own experience of vulnerability and guilt, the adolescent figure will remain constrained by ideologies and pedagogies that manifest as regulations and patronizing yet protective behaviours.

Because of adults' fear of usurpation and being rendered unnatural, any form of denaturalization is treated as a transgressive taboo. There is a turning point that deconstructs the dichotomy by fusing nature and science to substantiate its denaturalization. This occurs when the reader encounters biological weapons and heavy machinery as devices that dissolve the boundary between the natural and the technological. For example, in the aerial collision between Clankers and Darwinists, the genetically-modified combatant hawks resemble lethal machines that turn and wheel in robotic formation, catching the aeroplane in their net and releasing fabricated spider acids that burn through the wings, while the Clanker machines move and struggle as if they were alive (202). The focus is thus shifted from the boundary that separates human and nonhuman to the natural and artificial divide, creating a biological dystopia in

which there is nothing natural left:

> The wreck looked like a corner of hell bubbling up through the snow. Flocks of winged creatures coiled around hollows in the wilting gasbag. Crewmen moved across the great beast's skin, accompanied by bizarre double-snouted, six-legged dogs that sniffed and pawed every bullet hole. The green lights he'd seen from the castle covered the creature. They were crawling, like glowing maggots on dead meat. And the stench! Rotten eggs and cabbage, and a salty smell disturbingly close to the fish he'd had for dinner. Alek wondered for a moment if the Germans were right after all. These godless beasts were an insult to nature itself. Perhaps the war was worth in ridding the world of them. And yet he couldn't take his eyes from the creature. Even lying wounded it looked so powerful, more like something from legend than the work of men. (232-3)

Alek's experience of the subliminal horrors and Westerfeld's use of stylistic language bring to the foreground vivid details of chimerical monsters and putrescent smog pollutant, forming a Dantesque biological hellscape. This collage constructed to embody the viewer's fear of bio-terrorism is an expression of the modern man's cognitive impassivity of perceiving "created nature" as something other than unnatural. Language, when used to capture, describe, and substantiate nature, simultaneously occupies three symbolic spaces that organize nature into a host of other concepts[29]. It is a norm against which deviation is measured, but it is also a "Pandora's box" that represents an infinite series of fantasy (Morton 14-6). This means that nature can never be represented as something empirical, but it also prevents any form of abstract thinking about nature since it transforms nature into an illusion as soon as a concept is

29 Kate Soper refuses to accept this idea as a pillar of ecocriticism, strongly advising against playing with language to revitalize contemporary debates surrounding our ecosystem, because "it is not language that has a hole in its ozone layer; and the 'real' things continues to be polluted and degraded even as we refine our deconstructive insights at the level of the signifier" (124).

formed.

While the science-myth language persists in maintaining an irrational fear of bio-terrorism, ironically it is also language that is used to subvert the technophobic traditions in the discourse of the unnatural, establishing denaturalization as a beneficial method of dealing with adolescent growth and identity formation. For example, polyphonic expressions of bio-technology are used to undermine scientific norms. This idea is effectively articulated through the figure of Tazza, a Tasmanian tiger that is kept as a pet. It appears more strange and abnormal than anything Deryn has ever seen, even though to the reader this animal is probably the only identifiable creature in the entire novel (155). It is an example of Bakhtinian dialogism, "an orientation toward a specific conceptual horizon, toward the specific world of the listener", which creates new territory of language that allows the writer to introduce new elements to his discourse (Bakhtin 282). Consequently, when the reader attempts to grasp his or her subjectivity in a reading of his or her own world, he or she is simultaneously experiencing the norm as a conceptual system that produces the utterance. As the discourses of the constructed world and the reader's reality intersect the reader's sense of estrangement rises, the language reveals that what is disturbing is not the deviation of artificial life but their own stubbornness and prejudice, fearing that by encountering the other in a denaturalized realm, they might become just as abnormal.

By interrogating the notion of what is natural or artificial in an biocritical context, steampunk's technological hybridity can therefore invoke a more critical reflection and reconstruction of nature. This is because to realize that it is the language that blinds society to the predicament of nature is to realize what it is that humans fear —becoming unnatural ourselves. This typifies the third maxim of the Frankenstein myth, producing "the plight of the creature" that is pandemic to the bio-terrorist climate

of contemporary society (Rollin 72). First of all, the essentialist view of nature that propounds nature as "what is not made" or "never the stuff of labor and the reproduction of life" (Adorno 82) needs to be abandoned because the artificial cannot remain a projection of humanity's worst fears of itself. Looking at survey conducted during the 1980s and 1990s, Adrian Franklin discovers that the society at the time was captivated by a fear that

> modern societies were no longer able to control, regulate or even identify (sense by whatever means) the risk it routinely created through new and technologies...Subsequently, this triggered a whole 'natural' food revolution that denounced any food that has been processed and refined as unhealthy and artificial. (198-9)

If no one knows what one is eating, whether the substance being ingested is natural or unnatural, then one inevitably loses the certainty of what is one's self and risks becoming artificial, unnatural, and thereby monstrous. In the end the preservationist approach that attempts to restore nature to its pure and primitive state does not rescue man from the fate of monsters and mutants. Ironically through their attempt to rediscover and preserve what is natural and essential, they are actively reproducing the monstrous by demarcating and excluding it from the realm of nature. Therefore, as opposed to what the essentialists believe, their concept is actually at its most dangerous when it separates technology and nature into two individual paradigms[30] because it prevents society from perceiving technology as a part of humanity's natural climate, in which each life, whether technological or natural, can grow and adapt.

30 Stefania Forlini shows that steampunk is essentially a techno-manifesto that redeems modern society from this fate in order to portray and realize a more nuanced understanding between persons and things using the affirmative values of histories, objects, and persons of the nineteenth century (73). This means that integral to the exploration of technology in steampunk is the resistance against this particular moment of bifurcation in history.

Just as the preservationist approach toward nature is inadequate and deeply flawed, young adult fiction's preservation of innocence suffers from a similar fate. The image of the innocent child demands to be protected and deified, causing young adult fiction to demonize adolescence in order to maintain the integrity of childhood (Applebaum 42). The innocent child thus ensures that adolescence would be distinguished as a stage during which the individual would deviate from the norm and rebel against the authority in a power struggle, marking the loss of innocence and the act of subversion as signifiers of adolescent development (Feng 48). This is especially troubling because

> [i]f not represented as a symbol of fashion or hailed as a hot niche, youth are often portrayed as a problem, a danger to adult society or, even worse, irrelevant to the future. This is particularly evident in the slew of Hollywood films about youth that have emerged in the last 20 years such as 187, Black and White, Gummo, Jawbreakers, Buffy, Traffic, and Murder by Numbers. Young people in these films are seen as either dangerous, mindless addicted to drugs, or socially irresponsible, and almost always crassly immature. (Giroux xiv-xiv)

In order to contain their own fear and anxiety by objectifying and alienating the adolescent figure, measures and agents of socialization are put in place to eliminate natural and childish behaviours so that teens conform to social codes and expectations. The result is a representation of adolescence that is conventional, normative, teleological, deterministic, and anthropocentric. This needs to be revised because development is a lifelong process through which individuals try on roles and modify their own behaviours accordingly, seeking to understand social phenomena and codes (Walter 43). Consequently, these conventions of portraying adolescent as a stage in which one becomes unnatural and rebellious form the critical flaw that denies the

adolescent character the opportunity to develop his or her innate potential, since any performance of natural instinct is rendered the same as a display of childish conduct that needs to be corrected or suppressed.

Leviathan subverts these conventions by abolishing the ideal of nature from a biocentric perspective. Traditionally children's literature is fiercely committed to the bildungsroman genre that perpetuates an anthropocentric approach to identity, and thus neglects the potency in ecocritical discourses (Bradford et. al 9). While anthropogenic may be the dominant approach, in the end it is ecogenic, the identification with non-human others, that has the most potential in expanding the conception of identity, allowing one to see oneself in the context of larger environmental issues and thus embrace a non-anthropocentric moral outlook so that we can be open to choose who we are becoming or who we want to become (Kronlid 148). The denaturalizing ecocritical discourse frees the adolescent from the established convention of socialization by contesting the preconception that growth is an arbitrary, socializing process, through which the adolescent abandons natural innocence. In its place, the post-natural discourse formulates a paradigm of adolescent development that is more biocentric[31], organic, versatile, and creative, capable of compelling the protagonists to interrogate what is natural in him/herself and the environment.

This denaturalizing interrogation of identity predominantly takes place through cultural conflict, forcing the protagonists to confront nature as a system of cultural signifiers that is, as they will discover, easily overthrown. When Alek first enters the ship's guts he professes to feeling disgusted, but Deryn reminds him, "but the skins of

31 Related to the notion of biocentrism is biophilia. Biophilia, the human affinity to life or the belief that there is a universal human propensity to respond positively to nature life has been criticised and rejected as "essentialist" and "reductionist" by social/cultural constructivist nature-skeptics. But Wilson, author of *Biophilia* provides a counter-response, arguing that if 'nature is nice' is too obvious, then it is because it bears profound significance since the question that we have to ask ourselves eventually is, "Do we love life enough to save it?" (Love 80-1).

your zeppelins are made of cattle gut. That's like being inside an animal, isn't? And so is wearing a leather jacket" (265). Then Alek points out that a zeppelin is made with dead cattle skin while the *Leviathan* is alive, to which Deryn feelingly replies, "being inside a dead animal is much more awful if you think about it" (266). While in posthumanist young adult science fiction, this kind of cognitive estrangement functions as a socializing agent, the denaturalizing rhetoric of technology serves more as an inspiration, a catalyst, or a query. Using humour and wit, Deryn and Alek instantiates a form of cognitive estrangement that displaces their subjectivity and subsequently prompts a shift of perspective. Although their immediate responses are spontaneous and directed by egocentric sentiments and tendencies, Alek and Deryn begin to move away from egocentrism and toward a more biocentric vision of their society. They question the nature, mechanisms, and consequences of their respective technologies and cultures, demonstrating the efficacy of the post-nature discourse that differs from the post-human by placing the emphasis on the definition of nature rather than the human and non-human divide.

Unlike the posthuman that posits a human and non-human binary, which inadvertently produces the anthropocentric, liberal humanist discourse that prevents the adolescent's movement toward a broader panorama of the self and the world, the ecocritical post-natural approach always situates the individual within a larger ecosystem. As a result, the post-natural paradigm of adolescent development is perceived as the more beneficial model that encourages expansion of mind and intellect. It enables the protagonist to perceive him or herself as a construct, composed of elements that are natural and genetic and ideologies that are socially or culturally assimilated. As a result, growth is no longer normative; it becomes an organic process of self-interrogation and learning, raising questions such as, "What behaviour is

considered natural or acceptable in this environment?", "What part of me is inherited through genetics and what part is developed?", and even, "Is the state of this world as it has been and should be?". With this realization, the adolescent character is thus empowered to confront the self as an autonomous agent that is situated within a larger framework, expunging signs of egocentric thoughts and limiting ideologies, revising the young adult fiction's approach to growth to establish the innovative, biocentric model of development.

Ecotopia

Even though the common solution to the degradation of posthuman society is to abandon and surrender oneself to the progress of machines and the all-mighty sovereignty of technology (Leavis and Thompson 76), within young adult fiction the defeatist impulse is in direct opposition to the aim of the bildungsroman[32] project, which emphasizes growth as a developmental process that involves constant "revision, continued cultivation, re-education," through which the individual comes to be acknowledged by his or her peers and community as an adult (Martini 9). This means that in order to subvert young adult fiction's liberal humanist and anthropocentric conventions, ecological utopia that precipitates an ecocritical consciousness and portrays maturation as deeply biocentric is necessary. Broadly speaking utopia is a genre of imaginative projection of an ideal society, which might perform certain cognitive, educative, anticipatory, or causal functions in its narrative and framework of

32 *Bildung* originally refers to the external form or appearance of an individual, connoting redemptive conformity to the image of God, but in the late eighteenth century it acquired a new meaning that is still applicable and relevant today, that is, humans are not passive recipients of a pre-existing form, but are capable of developing the self and his/her potential through experience, making the individual the product of his or her environment (Kontje 2). See also the preface to Jerome Buckley's *Season of Youth*.

ideological critique (Levitas 101). The purpose[33] of utopia can range from negative critique of the real to positive inspiration of the better-than-real, and the nearer the fictional work is to the latter, the great will be its attempt at existential plausibility (Milner 344). In recent years, however, critics have observed a depreciation of utopia: Frederic Jameson acknowledges that utopia is no longer legitimate as it undergoes a spatial shift in postmodernism, through which utopias are translated and projected onto "the vision of place and landscape, including the human body" (qtd. in Fitting 12); Levitas and Sargisson see utopia as inadequate due to pluralism, which means that "it is impossible to ignore the fact that all knowledge and all aspirations emanate from specific standpoints, that others will see things differently" (15); in a mediated dialogue between Ernst Bloch and Theodor W. Adorno, Bloch attributes the depreciation of utopia to material fulfilment realized through capitalist consumerism (2); lastly, using Hobbes's *Leviathan*, Locke's *Two Treatises of Government*, and schemes of social reformation such as the French and the Industrial Revolutions, Krishan Kumar argues that utopia has ended due to the decline or death or utopian theory (556). Yet curiously, these critics, fully aware of how utopia is becoming obsolete, are also the ones who argue that we need utopia more than ever.

Bloch believes that in order to alleviate the burden that consumption and exploitation of resources have created, there is an urgent need to imagine an ecotopia that encourages the reader to philosophize the co-productivity between mankind and nature (989). In *Leviathan*, ecological utopia, or ecotopia[34], is an allegorical dimension that functions as a navigational compass rather than a manual, or a propaganda, or even

33 See also Sargent 11 that identifies utopia as an expression of fundamental human desires.

34 The term first appeared in Ernest Callenbach's *Ecotopia* (1975) that portrays a small state that is an environmentally-aware form of capitalism. It was received as a response to the environmental technologies known when Callenbach was writing with the intent to change the future, distancing it from wishful thinking or romantic visions of nature/ecology. In my thesis I use it more loosely to denote utopia that operates on principles of deep ecology.

some kind of penitence for the havoc mankind has wreaked on earth. Technotopia[35] tends to emphasize technological progress and the sheer marvel and aesthetics of modern machinery, but in an ecotopia technology and nature are in harmony. This is achieved by treating the artificial and the technological as a part of the natural landscape, combining the myth of invention and science with the preservation or improvement of environment (Unwin 333-335). There is definitely a sort of affinity between the pastoral and ecotopian living because both posit that a fulfilling and sustainable way of life should be rooted in nature. However, the Arcadian mode of the pastoral is "ahistorical, escapist, simply stultifying...deeply entwined with the pastoral vision of a countryside enduring out of time, pre-modern yet eternal, a symbol of stability and permanence in a ceaseless changing world" (Garforth 405). On the other hand, ecotopia is driven by the futurist consciousness to improve the relationship between nature, technology, and mankind. Marius de Geus claims that ecological utopia is useful because it does not foreclose other utopian possibilities by providing an exact blueprint of an ideal state; instead it functions like an ideological compass that points the reader in the direction of a sustainable future, inspiring rather than educating the reader (187). Therefore, it could be said that the value of ecological imagination lies in its creativity. The ecotopia may never be feasible but it functions nonetheless as a useful and challenging stimulus, taking on the task of conceptualizing plausible scenarios of a clean, ecologically balanced society.

Leviathan's ecotopia is based on the concept of deep ecology that hinges on the relational approach to the totality of biospherical nets and fields, recognizing the interdependence that subsists between human and nonhuman (Buell 107). In *Leviathan*,

35 Technological utopias are based on faith of technological progress and the benefits of industrial revolution, as opposed to ecological utopias that are the "opponents of abundant production and consumption" and where advantages of a simpler life in harmony with nature are emphasized (De Geus 190).

the notion of ecospherical interrelatedness invariably endows adolescent development with a more biocentric approach, characterizing growth as a developmental stage of learning through relational dynamics. It also enhances naturalistic qualities such as versatility, mobility, spontaneity, and self-sustainability, subverting the traditional anthropocentric tendencies in young adult science fiction. As the foundation of *Leviathan*'s biocentric imagination, deep ecology[36] arbitrates in an eco-friendly lifestyle. Because ecocriticism[37] is still deeply rooted in the imagination of plant and animal communities co-existing, it sets itself up as an obstacle to technologies that manipulate and corrode nature such as biological and embryonic research (Phillips 81). But in reality we are constantly hybridizing the planet and creating dramatic conditions of scientific progress, which induce a total abandon of the Edenic nature and a new thesis of ecology that is relevant to the artificial and the technological as well as the natural. Technology is not just a social form of life. It should be perceived as having a form that is social as well as natural in the sense that "technological objects either are alterations of natural things, transformation of natural things into artifacts, or reworkings of artifacts already derived from nature" (Schatzki 92). Therefore, what *Leviathan* demonstrates is science fiction's capacity to realize a totalizing, ecospherical perspective that encompasses both human and nonhuman on a global scale. Even though *Leviathan* does not explicitly associate itself with the Wellsian imagination[38], by

36 Ecology, coined by German morphologist Ernst Haeckel in 1966, is a departure from older ways of studying natural history that focused on microcosms and equilibriums. Its prose is particularly seductive, using analogies such as the "web of life" that describe every phenomenon interacting and affecting one another, leading to a mechanistic approach to nature and making it difficult for ecologists to comprehend phenomena such as instability and constant motion (Philips 77).

37 Eco-criticism, the study of literature that encompasses nonhuman as well as human contexts, is relatively new. It first momentum during the 60s and 70s among anxieties surrounding Cold War nuclear annihilation, water and air pollution, toxic wastes, deforestation, species extinction, global warming, and urbanization. The term is first coined by William Rueckert in 1978 (Love 3-4).

38 Even H. G. Wells, who is mostly known for his futuristic visions of post-apocalyptic earth, is careful to include various aspects of ecotopia in his works as according to the principle that "humanity has no right to ignore the essential inhumanity of the cosmos" (Davidson 46).

employing significant Wellsian themes and types such as genetic mutation, travel, and man's conflict with nature, *Leviathan* strategically aligns itself with the ecotopian thought that human and technology are just a part of the planetary panorama.

In recent years air travel has become synonymous with the new global order, especially with the increase in accessibility of remote places, more leisure time, and cheaper package tours, but statistics show that long charter flights are still in conflict with the goal of achieving environmental sustainability (Lassen et al. 887). *Leviathan* provides an alternative form of eco-friendly and sustainable energy that is embodied in the ecotopian airship. The energy ecosystem may not be realistically feasible, but as a form of hybridized technology in alternate history, it indicates that literary history is beginning to focus on things that have gone wrong in the past rather than what will happen in the future (Cohen 172-3). *Leviathan* the airship is one of the largest fabricated beasties on the continent, featuring a self-sustaining ecosystem that produces fuel without any contaminant as the by-product. It runs on a natural fuel microcosm, which consists of bees, which gather the nectar and distill it into honey, and bacteria in the beastie's guts that consume and process the honey into hydrogen, which is used to fuel the ship (192). The airship *Leviathan* is a creative alternative system of energy that promotes sustainability, leading the reader toward a new kind of living that is eco-friendly, fuel-efficient, sustainable, and comparably more organic than what present technologies can offer.

It is also important to note that while the system is entirely a technological fabrication, it possesses an unmistakable biological dimension that characterizes the steampunk technology as eco-friendly and hybridized. The ecotopian microcosm exists to inspire contemplation of alternative sciences and technologies rather than action. The ecotopia is an origin of cognitive thinking rather than a foreseeable destination, which

is indicative less of critical subversion than the desire to inspire a new kind of living that bridges the distance between mankind, technology, and nature so that they coalesce into one single microcosm.

While the utopian imagination is supported by the image of an energy relational network that is neither natural nor technological but both, within the potential of an eco-friendly lifestyle, there is also the possibility of a new paradigm of adolescent growth. For the adolescent protagonist, it demonstrates a fulfilling and empowering way of living that is rooted in the rhythms and cycles of nature. Gernot Böhme defines such eco-aesthetics of living as "a self-aware human reflection on one's living-in-particular-surroundings" according to which "humans should no longer maintain a distance from nature, but should seek to participate in the natural life cycle that engages all of its faculties" (Bergmann 13). This is mostly realized through Deryn's biocentric activities that incorporate the rhythms of the ecosystem. Over time as she becomes more synchronized to the movement of the airbeast, her experiences reveal that she is not merely embracing the ecotopian vision, she is also actively participating in and enacting a shift toward the aesthetics of eco-criticism. When she lays her hand on the surface of *Leviathan*, she is able to sense the warmth of the beastie and the cilia pulsing and rippling through the ropes and reaching her fingers:

> The membrane felt taut and healthy, with no hydrogen leaking out. The older officers said the hum of the membrane could tell you everything about an airship. The *Leviathan*'s skin vibrated with the thrumming of the engines, the shuffling of ballast lizards inside, even the voices of the crew around her. (99)

Since the airship is essential to the survival of the crew and plays a key role in the war between Clankers and Darwinists, Deryn's sensing of the airship's rhythm and movement is not merely a gesture of becoming aware of her surroundings. To Deryn the

act of sensing the ship's movement can be perceived as a leap towards a biocentric realization of the self and the world, signifying the intensely experiential capacity of flight and aerial mobility to foster ecocentric awareness.

It could be said that *Leviathan*'s eco-living is characterized by kinetic dynamics and fluctuations that reflect the unpredictable, irregular pace of adolescent growth, because

> When nothing moves there is nothing to which one can respond: at such times--as before a storm, or during an eclipse--the experienced traveller can lose his bearings even in familiar terrains...life is not contained within things, nor is it transported about. It is rather laid down along paths of movement, of action and perception. Every living being, accordingly, grows and reaches out into the environment along the sum of its paths. To find one's way is to advance along a line of growth, in a world which is never quite the same from one moment to the next, and whose future configuration can never be fully known. Ways of life are not therefore determined in advance, as routes to be followed, but have continually to be worked out anew. And these ways, far from being inscribed upon the surface of an inanimate world, are the very threads from which the living world is woven. (Tim Ingold qtd in Kronlid 128-9)

As a form of resistance against the tradition of pastoral utopia, which suppresses growth in a cornucopian state of bliss and perfection, *Leviathan* upholds a much more subversive, revisionary utopian principle that exemplifies a new eco-critical concept of adolescent development. It transpires in a way of growth and living that revolves around the movement and dynamics of nature, harnessing and factoring in the kinetic energy of the environment into the adolescent development and identity formation, and thus characterizing it as a process that is in fluctuating, continuous, organic,

spontaneous, and dynamic.

Furthermore, it shows that steampunk's hybrid technology has the ability to personify and highlight the biocentric consciousness as the catalyst that compels the adolescent to expand his or her awareness, because when the protagonist inhabits the ecotopic space, his or her "body is sensitive to the rhythms lying outside of it, the multiple and diverse rhythms that are captured by the senses, and also performs in accordance with the various rhythms and situations it faces" (Jiron 140). This reveals *Leviathan*'s biocentric paradigm as one that portrays the adolescent protagonist's living and growth as intricately related to the future of his or her environment. This is especially significant in young adult science fiction because it empowers the adolescent to understand and discover his or her innate potential to influence and impact the future. As a result, ecotopia creates a new paradigm that requires the adolescent to understand him/herself as not simply an individual unit of nature's ecosystem, but more importantly, an agent who is capable of sensing the fine changes of his or her surrounding and is thus responsible for sustaining and improving the relational mechanisms of his or her environment.

As much as the airship *Leviathan* reflects the eco-aesthetics of kinetic energy and harmonious living, it also interrogates the ramifications of a biocentric, totalizing approach to the protagonist's subjectivity using the idea of the sublime[39]. The airship presents the sublime as that which locates the individual within an ecospherical reality. It serves as an example of how dominant concepts[40] of ecocriticism can be conveyed to

39 Certainly *Leviathan* as a colossal airbeast bears resemblance to Edmund Burke's image of the sublime as "Whatever is fitted in any sort to excite the ideas of pain, and danger, that is to say, whatever is in any sort of terrible, or is conversant about terrible objects, or operates in a manner analogous to terror, is a source of the sublime; that is, it is productive of the strongest emotion which the mind is capable of feeling" (36). However, it could be said that the airship is more redolent of the Kantian sublime that possesses overwhelming immensity and absoluteness, and touches and charms the very mien of humanity that is expressed through visible mirth (16).

40 Lawrence Coupe gathers various concepts of ecocriticism and qualifies them in a model of pragmatics, serving the single purpose to challenge the logic of industrialism, the complacent

the child reader through language while effectively drawing him or her into a reflection of his or her own environment through subliminal experiences of surprise, fascination, awe, and astonishment, or simply emotions that might inspire epiphanies (Reid et al. 439). This is most effectively typified by Deryn's flight and her awareness of the beastie's movement. When she flies, the somatic experiences of aerial mobility expose her to the subliminal vastness of the perfect sky in oblivion, endlessly stretching in all directions and full of immensity, ushering her into a global consciousness that is unified by her aerial gaze (77). The aerial sublime is a new spatial experience that consumes her, transforming her into a member of an entity that is her immediate environment and inviting her to connect to an aesthetic mode of biocentrism. This form of the eco-aesthetic sublime is opposed to the traditional sublime, which is described as a "flight of fancy" that reinforces the notion of nature's otherness, creating a separation between the human and nonhuman realms by portraying nature as that which is under the dominion of man (Hitt 603-11). Therefore, while the traditional form of the sublime humbles the subject to inculcate a sense of a duty toward the nonhuman that valorizes man's superiority, steampunk's aerial sublime subdues the viewer's subjectivity only in order to simulate the global, transcendent experience of oneness with nature through the individual's mobility.

In addition to revitalizing her biocentric subjectivity, the sublime, which has been incorporated into the genesis of Deryn's biocentric development, has also triggered a new phase of adolescent growth. The totalizing space of the sublime establishes a dialectic relationship between her subjectivity and her immediate surroundings, revealing to her changes, vibrations, and dynamics in the ecosystem where everything

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culturalism that renders other species subordinate to humans, and the validity of treating nature as something that is produced by language, with the intent to produce a biocentric consciousness that is resistant to planetary pollution and degradation (4).

is held together relationally with an emphasis on fluidity and mobility. This is contrary to the dominant schemata of adolescent fiction that imposes essentialist control mechanisms and boundaries to preserve the teen protagonist's unique human-ness or to cultivate his or her social identity. *Leviathan* reveals that it is not by acknowledging and adopting social and cultural codes and conventions that one learns to improve oneself. Rather it is by responding in an instinctive, spontaneous way to one's environment, whether it be human or nonhuman, that growth is fostered. For example, it is only when Deryn can be completely attuned to the movement of the airbeast that she is recognized as a member of the community:

> The topside of the airbeast was alive with activity. The ratlines flickered with electric torches and glowworms, and Deryn felt the membrane tremble from distant footsteps. She closed her eyes, trying to *feel* the airship‘s totality, its hundred species tangling to make one vast organism. (104 with original emphasis)

The teleological impulse of socialization is thus reduced to a minimum, and growth is portrayed as a creative, organic, and versatile process that emphasizes the benefits of becoming more aware of the self-world relations. Eco-living therefore typifies the revisionary model of denaturalized development, in which the adolescent's action and behaviour are rendered organic, spontaneous, subliminal, and instinctive, thereby suggesting that adolescent should not be marginalized or demonized but should instead be recognized as an essential component to his or her sociopolitical landscape. Consequently, steampunk's hybridized technology defines adolescence as a stage where one learns to respond instinctively to one's environment and perceive oneself as a part of a totality.

From recognizing this new organic paradigm of adolescent formation that is

characterized by creativity, spontaneity, sustainability, and versatility, there are two outcomes that are significant pertaining to the advantages of a biocentric model of growth. First of all, by recognizing the adolescent as an individual that is also part of a self-sustaining ecosystem, the biocentric paradigm of adolescence inevitably lends the adolescent the right and freedom to grow and improve him or herself reflexively and creatively; and secondly, deep ecology's relational approach to development serves as a reminder to the adults that because they are also a part of the ecosystem, their role is to learn how to respond and adjust to the changes that are taking place as opposed to imposing rules that limit the adolescent's growth.

Usually an ecological imagining in children's literature tends to revolve around human survival within a global ecological system, conveying warning and caution through a dystopian filter with an ecocritical emphasis (Hammer 37). Otherwise, it creates a virtual space where taboo is permissible, reproducing the cultural myth of ideal childhood to be passed on and accepted. Consequently, it maintains that transgression is merely a licensed form of escapism that offers momentary reprieve, while consolidating rules to establish subjectivity without violating existing social codes and structures (McCallum 122). These conventions tend to exaggerate the child's vulnerability and fragile nature, and thus diminish his or her sense of agency in the confrontation with natural catastrophes.

As opposed to this, deep ecology with its emphasis on relativity strengthens the child's position and freedom to act by situating the child within a relational ecosystem, thereby suggesting that if the environment, which is inclusive of both human and nonhuman, adults and children, is to survive then all members and participants need to take the initiative and responsibility to adapt and adjust to social and environmental changes (Buell 107). This is most clearly illustrated when Captain Hobbes orders Deryn

to spy on Alek. While her introspection and outward conduct show how an adolescent is not always willing to conform to social codes, it also proves that the adolescent is capable of adjusting to these external changes as she re-negotiates her position with consideration of existing regulations:

> This was the moment, of course, when duty required her to tell the captain all she knew--that Alek was the son of Archduke Ferdinand, and that the Germans were behind his father's murder. Alek had said it himself: This wasn't just family business. The assassination had started the whole barking war, after all.
>
> And now Lord Churchill himself was asking about it!
>
> But she'd promised Alek not to tell. Deryn owed him that much, after setting the sniffers on him the first time they'd met. (422)

Her final decision to conform to the established codes of conduct of the Air Force outwardly while holding herself to the promise she made to Alek proves the efficacy and advantage of a biocentric approach in uncovering the intricate mechanisms of adolescent agency: Deryn is capable of recognizing and abiding by the social protocols, but after assessing the situation from an alternative perspective that is informed by her own experience and understanding, she reaches a compromise that does not diminish her independent cognitive thinking and sense of agency, nor does it define her decision as an act of transgression that is a form of momentary escapism from the institution.

Furthermore, Dr Barlow proves herself capable of adapting to Alek and Deryn's secret operation by extemporizing and making adjustments without disrupting the larger plan that is ensuing, exemplifying one of the essential laws of deep ecology, which is that everything is connected to everything else, but "the amount of stress which an ecosystem can absorb before it is driven to collapse is also a result of its various interconnections and their relative speeds of response. The more complex the

ecosystem, the more successful it can resist a stress" (Commoner 21). This means that even if adults can monopolize power as social overseers, it remains a far less efficient and sustainable model than the biocentric system in which the adolescents are empowered to see themselves as unique, distinct individuals of the ecosystem, being equally responsible and accountable for their actions because they are also capable of impacting the ecospherical equilibrium[41]. Therefore, what the biocentric consciousness holds is the key to reforming the traditional paradigm of adolescent growth by rejecting rigid, mechanical conformity, discipline, and socialization, which would eventually force the individual to choose the greater good over self-interest. It enables the child to adapt to the existing system while noting that adults also need to adapt to the changes occurring in the child's identity and subjectivity, highlighting the importance of inner life that grows by intuition, biocentric principles of deep ecology, mutual collaboration, and relational environmental dynamics.

A relational system of society is not the only form of denaturalization and biocentric development. As the machine becomes more organic, nature also becomes disconcertingly technological, resulting in a depreciation of nature to such an extent that nature cannot survive without technological intervention. Though writers of ecocriticism have identified technology as the source of dehumanization, causing an entire generation of youth to devalue nature and reduce their connection to the natural world as they become more information mediated in a world of virtual hyperrealism (Levy and Kocher 207), it could also be argued that nature is being technologized and rendered unnatural. In more recent years due to an increase in social and political awareness of the hazards of bio-chemicals, ozone pollution, and deforestation, globally

41 After all, nature is not static; it is always in motion. The psychology of deep ecology determines that "human interaction with the world is a reciprocal coordination of the actors' minds, bodies and environment" (Øvergård, BjØrkli, and Hoff 103).

we have come to recognize the importance of letting nature run its course. Yet ironically nature has become so irreversibly corrupted and polluted that it cannot survive without man's intervention: endangered species are geo-tagged with tracking devices, forests that seem boundless are cordoned to prevent cross contamination, and pets regularly require vaccines to inoculate them against flus and diseases. As a result, nature is rendered moot and downgraded to a matter of rhetoric and style of aphorisms, producing the postmodern idea that there is nothing natural about nature and the irony that "[e]ven nature...doesn't grow on trees" (Hutcheon qtd. in Phillips 25). Nature is now a sociocultural product constructed by each individual community so that there is no such thing as "nature" but only facades of nature that cannot be viewed collectively (MacNaughten and Urry 30-1). These phenomena reveal that nature is deeply embedded in culture yet separate from it, further emphasizing the denaturalization of nature.

One of the facades of nature as a sociocultural construct contains the idea that nature is an expression of technology. Even though the *Leviathan* is an organic, living animal, it is invested with a mechanical dimension that perpetuates notions of instrumentality and totality, interceding in the adolescent's understanding of growth:

> The *Leviathan* had been the first of the great hydrogen breathers fabricated to rival kaiser's zeppelins. A few beasties had grown large since, but no other had yet made the trip to india and back, breaking German airship records all the way. The *Leviathan*'s body was made from the life threads of a whale, but a hundred other species were tangled into its design, countless creatures fitted together like the gears of a stopwatch...The *Leviathan* beastie wasn't one beastie, but a vast web of life in ever shifting balance. (71)

The clockwork[42] imagination of mechanized nature renders the eco-social system a mechanical construction that conveys a sense of unity, conformity, and order. By describing *Leviathan* as "a vast web of life" using the clock metaphor that portrays "countless creatures fitting together like the gears of a stopwatch", Westerfeld deconstructs the barrier that separates nature and technology and presents nature as a technological way of being. In other words, steampunk's hybridized technology clearly shows that it is not technology or humanity that is wrecking and destroying nature and the ecosystem, but our perception and definition of nature.

Rather than the antithesis of nature, technology should be seen as what filters our perception of nature and reveals nature as a space[43]. Martin Heidegger argues that the instrumental definition of technology as a means and the anthropological definition of technology as a human activity are not sufficient; technology should be seen as a revealing, and "if we give heed to this, then another whole realm for the essence of technology will open itself up to us" (12). If the airship is thus treated as a technologically constructed space of nature, then it could be said that the technologization of nature is represented as a way for the adolescent to function within the institution organically as well as mechanically. Even though the space that is the focus of this discussion is clearly none other than the airship *Leviathan*, there is still the issue of how the natural space is enacted into being through technological mobility[44],

42 This idea is not entirely new or radical. Clockwork and machine metaphors appeared most as early as the 17th and 18th centuries as a means of accessing the collective mentality. During the Scientific revolution, Copernicus, Bacon, Galileo, Kepler, Descartes, Newton, and countless others founded the mechanical philosophy that was later consolidated by Descartes into the theory of physiology of human and animal body in *Traite de l'Homme* (1662), in which he offered a direct account of the workings of the human body which was then compared to the construction of a complex automaton (Mayr 55).

43 When the space has been constructed it becomes a place in which narrative is set, and mobility and movement in that place allows the individual to create a narrative that becomes a way of being, which is what lends cities and places a social geography that is defined by its human activities (Brewer and Dourish 969).

44 A technologically constructed mobility is often considered a threat to nature and human subjectivity because it creates problems such as a radical change of landscapes and cities due to responding to overwhelming demand for energy, causing a large number of road casualties, fatalities as well as

which preserves the adolescent's sense of individuality and solidarity. After all, space is not simply a static, inert container of everyday experience, but "the outcome of particular ways of reasoning and representing the world," which reinforces the notion that space is about relative uniformity and connectedness (Brewer and Dourish 964-5). In other words, it could be said that due to *Leviathan*'s representation of technology as a form that is simultaneously mechanical and organic in nature, it also invariably results in a kind of mobility that is similar in style, nature, and expression.

The airbeast's technological mobility serves the dual purpose of enhancing the adolescent's sense biocentric solidarity and community within a hierarchal military system, while preserving his or her sense of self from being dehumanized by creating and maintaining concrete mechanically deterministic boundaries between the self and the other. For example, what is really interesting about the power structure on board the *Leviathan* is that there is a very strict adherence to military hierarchy: you follow your orders and keep to your station. At the same time, the disciplinary conduct and restrictions of airmanship emanate a very strong sense of companionship and equality. No one is exempt from the rule that forbids smoking because it is a safety measure, implying that one's survival is intricately linked to and dependent on others (190). Nevertheless, Deryn embraces the mechanical functionality and solidarity to such an extent that she is entirely one with its working mechanisms (149). This shows how Deryn participates willingly as member of the technological ecosystem in order to have her subjectivity and worldview socialized through discipline because it ensures and preserves a sense of mutuality and interdependence, which is crucial to her well-being and the future of her community.

Usually when the issue of socialization is dealt with in the context of a

injuries, and a challenge of preserving democracy due to aspects of social exclusion and 'hypermobility' (Bergmann 5-7).

teleological advancement from childhood to adulthood, discipline can function as a negative socializing agent that reduces the child to a passive recipient of social codes and expectations. But *Leviathan*'s constructed, technological ecosystem shows that when discipline is found within an expressive organization it can be emotionally fulfilling and rewarding. Kevin Hetherington identifies this type of emotional community as a bund, an elective form of organizational coalition that is maintained through active, reflexive monitoring of group solidarity, a sense of collective identity and a clear code of practices and totemic symbols which serve as the basis of expressive identification. The result is

> the continual self-management [that] acts reflexively to provide not only a collective identity or lifestyle for its members, but also a greater degree of interpersonal communicative skill which facilitates the development of a new or renewed self-identity. (98)

Consequently, it produces the kind of coming-of-age narrative that affirms the importance and efficacy of being rendered an instrumental part of a larger community or entity, substantiating the adolescent's experience of technological collectivity and self-integration.

But at the same time, Deryn has a very clearly defined, distinct sense of self that enables her to function within the system as an autonomous, biocentric individual. Deryn often exhibits an ambivalent reaction to change that typifies steampunk's hybridized representation of adolescent growth as mechanical as well as organic. She follows rules ruthlessly and mechanically when compelled by her sense of loyalty and discipline. For example, she tells Alek, "Well, I had to stop you..I took an oath to the Air Service, and to King George, to protect this ship. So I couldn't go making promises to some intruder I'd just met, could I?" (272). But she also displays moments of

spontaneity and unpredictability that signify her ecocentric agency. When Deryn improvises to save the crew by taking Alek without explanation as hostage, "She wondered if the officers would be upset about this idea of hers. No one had ordered her to use Alek as a hostage. Of course, no one had ordered her not to either" (308). The interior dialogic interrogation is what involves the protagonist's subjectivity in an organic, ecocentric process of growth. It expands her perspective and worldview, thus allowing her to exercise an enriched understanding of subjectivity as an autonomous, independent agent. Therefore, as much as growth deals with a change in attitude and perspective that allows the adolescent to function within a social structure, this hybridized view is also what enhances the individual's sense of self as a distinct, valued member while not undermining the adolescent's autonomy and individuality.

Just as Deryn is reassured of her valued contribution to her community by confronting and embracing the technological nature of the ship, Alek also learns to explore his relationship with technology through mobility. In *Leviathan* it is mobility that dynamically animates and deconstructs the barrier between the machine and the individual, evoking the sublime not just as an emotive response, but more importantly as the organic experience of oneness with the machine. Borrowing from the rhetorics of Immanuel Kant and Edmund Burke, David E. Nye creates an overarching theory of the technological sublime that characterizes mobility as an integral part of modern life. It is through the technological sublime, as "a unique and precious encounter with reality" (xiv), that the adolescent can be awakened to a new vision of the changing universe.

The sense of subliminal transcendence is inspired by the mobility of Clanker technology. When Alek entered the Stormwalker for the first time and placed his hands on the controllers, sensing

> machine's awesome power trembling in his fingers...he forgot that he was at the

> controls, feeling the steps as if they were his own. The sway of the cabin settled into his body, the rhythms of gears and pneumatic...Alek had even begun to see patterns in the flickering needles of the control panel. (10-15)

Even though there is no specific reference to sentiments that are commonly associated with the sublime, such as awe or terror, the Stormwalker's movement is evidently inviting the teen protagonist into a transcendent technological reality. The momentum of the machine can be perceived as the unified force of the technological sublime, enacting a dialectic balance of intersubjectivity between the self, the world, and the machine. The technological sublime as the experience and realm of intersubjectivity is also realized through Alek's gaze when he witnesses the German land dreadnought appearing from the shadow of the forest:

> Long seconds later another tremor arrived, rippling across the trees around them and up through the Stormwalker's metal frame...the first broadside erupted, bright flashes rippling along the dreadnought's flank, puffs of cannon smoke swelling into a hazy veil around her. The sound followed moments later--a rolling thunder that broke into sharp, tearing bursts from every direction. (46-7)

It shows that steampunk's technology is particularly concerned with presenting physical shock as the result of technological mobility, highlighting the intricate relationship between the human body and the movement of the machine. The corporate mobility between the teen protagonist and the machine produces sensory shock and stimulation[45], experiences that characterize the technological sublime, through which the mind becomes entirely occupied and saturated with the idea of the object that "it cannot

45 Charles Caldwell emphasizes the emotive and mental aspect of the technological sublime as opposed to the physical, stating, "Objects of exalted power and grandeur elevate the mind that seriously dwells on them, and impart to it greater compass and strength. Alpine scenery and an embattled ocean deepen contemplation, and give their own subliminity to the conceptions of beholders. The same will be true of our system of Rail-roads. Its vastness and magnificence will prove communicable, and add to the standard of the intellect of our country" (qtd in Marx 195).

entertain any other, nor by consequence reason on that object which employs it. Hence arises the great power of the sublime, that far from being produced by them, it anticipates our reasonings, and hurries us on by an irresistible force" (Nye 9). Consequently, as the machine becomes something that is larger than life[46], which can only be recognized as the sublime, the teen protagonist is also brought onto an all-consuming awareness of transcendent relativity, technology as the new source of the sublime, and the mutual living and mobility between technology and man.

Technology usually erodes boundaries between the body and the machine, especially when technology's movement does not necessarily reflect human movement, interfering with "the ways that humans normally control action by becoming a medium that mediates the operator's actions towards the environment which also alters their ability to perceive changes in the environment" (Øvergård et al. 116). New experiences of movement causes the body to lose its natural modes of controlling the movement without the device, creating an existential mode of living that is based on and constrained by technology, subsequently invading the human and dissolving the division between humans, environments, and technology. However, steampunk recognizes that in spite of the somatic discordance, it is necessary to realize that humans and technology can co-exist in a way that is not harmful to the human user. Steampunk's half-organic, half-mechanical technology reveals that it is only through identifying with the machine in its mobility that humanity can embrace a non-anthropocentric moral outlook. This further emphasizes that mobility is that which reveals to the individual the unstable space that exists between the mind and the machine, bringing the individual to a new understanding of self and society. Through

46 Descriptive markers that associate the technological with natural catastrophes and phenomena, such as "smoke", "rolling thunder", "tremor", form the essential aspect of the technological sublime that imbues steampunk's technology with a dimension of naturalistic passion, blurring the divide between the organic and the mechanical.

steampunk's representation of technological mobility, it conveys the need for a new understanding of technology that is accustomed and sensitive to the relational dynamics between technology and the individual.

Furthermore, steampunk shows that it is not simply through attuned movements, which substantiate a sense of unison between humans and technology, that a new conception of the technology is formed. In response to the criticism that technology is some kind of pathogen that corrupts human mobility can be averted, steampunk's hybridity mediates a more harmonious relationship between man and technology, because "Nature is no bygone...Even assuming the earth had a heart of gold, this heart was still by no means found to be such and will only acquire its kindness when it finally also beats in the works of technology" (Bloch 699). In other words, what steampunk's hybrid technology is claiming is that it is by realizing the fusion of technology and nature, finding the balance between controlling and being controlled, and through the machine's fallibility that a new fate of humanity can be found.

For example, when Alek is piloting the Stormwalker at night, he realizes that the machine is moving too fast for him to regain control. But that is not due to the machine overriding his command. Rather it is caused by his own mistake. So when he feels he is about to lose control of the machine entirely, he surrenders the saunters to Klopp who then slows the machine to a halt, at which point the crew begins to congratulate Alek on his quick decision. When asked why, Volger replies, "Everyone falls. But you did the right thing and let me take the controls in time...It seems that humility was the rather tiresome point of today‘s lesson" (94). This humble attitude toward technology, typified by the protagonist's discovery of the limit of himself and the machine, enacts a separation between the machine and the self that coincides with Bruno Latour's idea that we must "always tear ourselves away from instrumentality, reaffirm the sovereignty

of ends, rediscover Being; in short, we must bind back the hound of technology to its cage" (247). Fundamentally what steampunk conveys using the machine's fallibility is the need to revise the discourse of technology by identifying our own mortality with the machine's fallibility, which would consequently restore the machine rightfully to its secondary place. Similarly, Gregory Benford identifies fallibility as the most crucial aspect of representation of technology. He argues that technology must fail in order to produce the necessary awareness of dangers in the present and future (109). Technology is not the bane of humanity. It is instrumental, functional, and apparently, fallible, so if any form of degeneration is found in the modern experience, only humans can be seen as responsible. Therefore, at the core of the steampunk manifesto of technology is this idea of learning humility and our own fallibility in the presence of technology. It is through encountering technology and performing its mobility that human can come to possess knowledge of the limit of technology and human understanding, shedding light on the liminality and fragile nature of mankind that are reflected in the machine's own subliminal mobility.

Steampunk recognizes that technology is artificial; but it is also conscious of technology as something that is alive, having the right occupy and function within the ecosystem. Latour explains that

> We never tame technologies, not because we lack sufficiently powerful masters, not because technologies, once they have become ‘autonomous’, function according to their own impulse, not because, as Heidegger claims, they are the forgetting of Being in the form of mastery, but because they are a true form of mediation. (250)

This means even when the mobility[47] and movement of the Stormwalker transcend to

47 Philippe Couton and José Julián López identify this kind movement as a device of utopianism: "Travel would open passages, and therefore help to draw new cartographies of the rapidly expanding physical

the extent that it is the only reality that the teen protagonist can be certain of, it is crucial that he remains capable of distinguishing himself as the one in control. Steampunk's hybrid technology subsequently presupposes a radical turn in the ideological construct and understanding of technology. A machine is still a machine in steampunk's denaturalized realm, but it is also alive, breathing and moving like an automated chimera, compelling the reader to realize the importance of taking control of that fate of machines by subduing technology as a secondary effect to human mechanism.

Utopia Revisited

Steampunk's technological mobility is only a part of steampunk's enterprise to establish a collaboration between technology and nature. The airship itself is a symbolic embodiment of that utopian co-existence. In the world of *Leviathan,* Clankers and Darwinists alike are wary of the alliance due to political differences, but the airbeast that personifies the utopian ecosystem is fully capable of adjusting to the inclusion of technological power, interceding on behalf of both parties. When the Clankers offer their engine to the Darwinists, what this single act typifies is a utopian image where nature and technology join forces for the survival of humanity. At first the Clanker engine seems to be working against the movement of *Leviathan*, but the cilia, moving "like a field of grass rippling in a strong wind," works like tiny oars and steadies the beast (399). This is another moment where steampunk attempts to prove the efficacy of a biocentric view of technology, showing that for the environment to be self-sustaining,

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and social universe. Somewhere in the newly unfolding space there existed places holding the promise of new beginnings. Current utopia, we argue below, has preserved the original kinetic impulse, the necessary movement that brings travelers to new shores, but has also reversed the priority" (102).

it must also be capable of incorporating technology into its landscape, exemplifying the restoration of the machine in the ecocritical utopian discourse. When Thomas Jefferson was anticipating the importation of modern machinery, he saw the machine as "a token of that liberation of the human spirit...turning millwheels, moving ships up rivers, and all in all, helping to transform a wilderness into a society of the middle landscape" (Marx 150). In the same spirit of progress, *Leviathan* is presented as an environmental utopian of technological mobility[48], surpassing old technologies that cannot keep up with environmental changes (411). Furthermore, because this image is reminiscent of the ideas conjured by the avant-gardists, who saw technological development as a way of enabling new freedoms and creating new spaces that are culturally invested in liberatory connotations (Pinder 177), it means that underneath the appearance of the monstrous, steampunk is evoking a new practice of utopian mobility that forms a resistance to routine and everyday life.

To understand steampunk's relevance to modern living, it is necessary to see that steampunk's utopian energy is especially potent when steampunk novels and stories are treated as techno-tales, which function as myths and "narratives that bind today's individuals and communities together through a sense of common purpose and prestige" (Divall 945). *Leviathan* as the expression of postmodern hybridity is particularly pertinent to the ways that youth can anticipate rather than fear their future. Steampunk is not just restoring the machine to its proper place in the realm of science fiction; it is transforming and reinvigorating the potentiality and function of the utopian discourse in young adult fiction. In addition to its technological innovation, as an alternate historical narrative, steampunk refuses to abide by the rules of linear

48 David Espey notes a natural affinity between children and travelers that create fluid spaces in children's fiction, only "in the sense that they act in an "alternative" dimension, one apart from the common daily routines of work. The activity they perform by virtue of being child or traveler is play--free, imaginative, spontaneous, but useful" (56).

extrapolation and harkens to a more anachronistically creative approach to eco-living. Though the machines and beasts violate the laws of nature, but it is only because they serve a higher purpose of inspiring the reader with the utopian and the impossible[49] to bridge the gap between the future and the present.

Justine Burley and John Harris claim that genetics will be what makes us recall our responsibility to the world and to one another, inspiring us to desire change and re-evaluate that desirability for the future survival of the species (1). But without the proper understanding that each and every organism is intrinsically interdependent on one another, the futuristic utopian vision cannot be substantiated or legitimized in children's fiction. The flying whale may never be fabricated with the kind of technology we have today, but by entering the dialogue with the ecotopian dream, we can consider the possibility of a greener future, a healthier, more biocentric lifestyle, and a revisionary understanding of growth and adolescent development. In other words, deep ecology has its usefulness in inspiring attitudes and imagination that recognize interdependence and relational productivity, which subsist between human and nonhuman, nature and culture, and even between adults and adolescents. This is especially crucial and significant in a genre of fiction that is intended for the next generation because "our survival as a species may be dependent on our capacity to dream it in the work of our imagination" (Jonathan Bates qtd. in Buell 107).

In addition, *Leviathan* shows that growth is deeply related to one's inner life, just like how Frederich von Blanckenberg believes that the bildung is a matter that deals with the inner life and education[50], which should be the true purpose of the novel

49 Levitas claims that utopia "must not violate what we know of nature, including human nature" for the critique to be effective (177), but when the utopian potential lies in its ability to inspire and create new possibilities, it could be said that the technology does not have to be scientifically accurate to be effective.

50 Even though Marc Redfield is convinced that the entire coming-of-narrative has been a failure in legitimizing representations of growth and process, he recognizes that what is important to the

so that the protagonist may come to see everything in a chain of cause-and-effect that produces the growth of character in a self-aware and self-directed movement (Martini 20). Therefore, adolescent development should not just be about achieving the expectations and standards that have been prescribed by adults in order to validate the rite-of-passage, nor should it be about eliminating any signs of egotism and rebellious behaviour in order create a semblance of order and conformity, because these are the patterns that habitually reproduce and maintain the ideological construct of the demonic teen. Instead, adolescent development should be self-directed towards a biocentric understanding of the self and the world through the sublime and relational dynamics of technological and organic mobility. So if by recognizing the adolescent's action as a response to the existing social and cultural landscape created by the previous generation that adults can be hold just a little accountable, or if by seeing the adolescent as a part of the ecosphere just as the adult is a part of it also that the next generation can be afforded a little more freedom, or if inspiring growth as an organic process that allows one's inner potentials to be fully matured means that that a little more respect is given to the talent hidden within the child, then by all means a biocentric approach to adolescence is utopian in nature as much as it is an embodiment of revisionary tactics that reform and revitalize the coming-of-age narrative in science fiction.

Science fiction has always been about testing the limit of human knowledge, and steampunk is no different. Steampunk is what allows the individual to discover his own limit and realize that technology itself also has a limit, lending the hybrid machine, that is both mechanical and natural, the subversive energies of creativity and co-productivity. It is how the modern reader can be inspired to find new expressions of power and fallibility, growth and being, and individuality and conformity. It is only

narrative is not the destination but the process of achieving organic growth through refining and cultivating inner life (47).

when technology is liberated from the rhetoric of the Frankenstein myth, and is thus recognized as what enhances the natural capability of nature and man, that it releases its creative potential.

After all, when faced with so many irreversible damages in our ecosystem and social institution, when "there is no hope of changing the social and material circumstances, the function of utopia is purely compensatory. It may take the form of a myth of a golden age or an other-worldly or remote this-worldly paradise" (Levitas 192). In this day and age, *Leviathan* presents itself as the myth of a golden age, the quintessential utopia. It is not another blueprint of utopian society that the reader needs, but an opportunity to freely imagine what it means to dream of the impossible. It is useless to feed children tactics or possible solutions to environmental catastrophes since it remains yet to be seen what kind of natural catastrophes would occur. Instead, stories should foster a degree of "insightfulness" by inculcating aesthetics that would encourage meditation and creative abstraction rather than "directions" and "lessons" conveyed through "a relatively transparent representation or mirror of reality itself" (Reid et al 436). This will be what subsequently revitalises the utopian discourse. While steampunk does not provide any concrete evidence that compels the reader to hope for a better future, it teaches the reader to dream and to wish for something that is infinitely better than the present.

Chapter Three

All children have to be deceived if they are to grow up without trauma.
— Kazuo Ishiguro

My life is a perfect graveyard of buried hopes.
— L. M. Montgomery, *Anne of Green Gables*

Alongside the flying dirigible that glides gracefully through the night sky, the steam engine that hisses and wails like a metallurgist's pet monster awakening from its long slumber from underground, and the mad scientist with brass goggles and weird contraptions in hand, there is the clockwork automaton that has captivated and mesmerized steampunk enthusiasts with its rich, vivid images of techno-magic. Whether it is due the reflective golden sheen, or the gears that move in perfect unison and order, there is definitely something delightfully magical in the image of a clockwork automaton. Philip Pullman's *Clockwork*, a gothic fairy-tale in the and style of E. T. A. Hoffmann's "The Sandman" and "The Automaton", provides a particularly memorable episode that typifies the appeal of clockwork mechanisms. The story features an inventor with supernatural powers Dr. Kalmenius, Gretl, the daughter of the town innkeeper, and a young prince who possesses a clockwork heart. When the narrator is describing the town's renowned clock tower, which is decorated with Dr Kalmenius's clockwork figurines, it is said:

There was something uncanny about Dr Kalmenius's clockwork. He made little

> figures that sang and spoke and played chess, and shot tiny arrows from tiny bows, and played the harpsichord s well as Mozart. You can see some of his clockwork figures today in the museum at Schatzberg, but they don't work anymore. It's odd, because all the parts are in place, and perfect order, and they should work; but they don't. It's almost as if they had...died. (28)

The temporal juxtaposition of the past, in which the figurines moved according to design, and the present, where the clockwork automata have ceased to function, is saturated with notions of death, immortality, and ageing. It embodies the beauty of analogue time that is absent in digital technologies, the ability to spontaneously and prophetically evoke the dialectic images of decay, progress, liminality, and the phantasmic aura of being simultaneously alive and dead in the manner of Walter Benjamin's historical materialism.

In *The Steampunk Bible* Sterling specifically highlights the wind-up automaton, "a gilded feminine creature," as a significant steampunk archetype because of its potential to dramatize human suffering and servitude in the conflict between determinism and free will (63-4). Writing about the famous chess-playing automaton known as "The Turk" in the late eighteenth century, Gaby Woods finds that the potency of the automaton trope is related to its ability to function as an ideological interface, on which the viewer can project and deconstruct binaries such as life and immortality, nature and technology, determinism and free will. It did not matter to the eighteenth century audience if the Chess Player was an authentic automaton; it was, as its history shows so clearly, less an admirable piece of mechanism than a philosophical game:

> Audiences could be titillated by the possibility of an automaton; they could, to their mind's content, tempt fate and fear with the idea that machines could be like humans, without ever having to deal with the reality. It was like playing with

> machines, or playing with what was human, the way one might play with fire. The label 'a new Prometheus' was both an honour and a warning, since the truly Promethean territory was this: it was not mechanical ingenuity, the giving of imitated life, that had earned Kempelen his moniker, but rather the act of playing with life, and the dangerous thrill of the riddle his invention proposed. (77-98)

The automaton evoked such contemplation only because it was treated as an intermediary object. Otto Mayr explains that traditionally in the rhetoric of science, clocks and automata were located between the world of sorcery and the world of rationality. As a timekeeper, "it made possible the tighter coordination of the activities of increasingly complex communities"; as "a mechanical representation of the known universe, it was a repository of information, a teaching tool, an astrological accessory, and perhaps, to some modest extent, an instrument for the scientific astronomer"; and as "an automaton, its applications ranged from entertainment of drinking partners to the production of effects of magic before uninitiated audiences" (26). It changed the mental habits and preconceptions that people had of their immediate, empirical reality, and observable causes, helping to teach the viewers to think mechanically as well as creatively.

By imitating human movements, the automaton evokes notions that are related to performativity, redefining what it means to be human. It can move, write, and play musical instruments like a human, but its movement is conspicuously and disconcertingly awkward, reminding the viewer that the automaton is unlike the human viewer. At the same time it is more than a piece of machinery; it is the embodiment of technological wonders, the perfect created being, and total control over one's existence. Automata can be found throughout history and the literary imagination of machines and technology, in E. T. A. Hoffmann's "The Sandman" and "The Automata", in tales about

Daedalus' and Vulcan's inventions; in Ancient Greece where the water-powered world machine of Archimedes and the life-size mechanical woman by Albert Magnus could be found, in Renaissance it was the lion built by Leonardo da Vinci in Milan for the reception of the French king, and now, in Ekaterina Sedia's steampunk novel *The Alchemy of Stone*. Sedia's automaton is constructed using both metal and organic parts. Inside its chest is a keyhole where a key can be inserted to wind it up. The automaton is sentient and capable of sensing pain. It is an automaton that has already been emancipated by the social movement but remains bound to its master because he holds the key to its heart. The automaton is a type of the posthuman body that is typically relevant and useful to the representation of growth in young adult science fiction, fulfilling what Jean-Francois Lyotard sees as the function of posthumanism--to philosophize the human body (133). As a "technobody" that is half flesh and half machine, it depicts technology's participation in the creation of human and destabilizes the boundaries between binaries such as human/machine and natural/artificial, interrogating the relationship between subjectivity and the body (Flanagan 40). The result is a posthuman hybridized form of subjectivity[51] that questions what it means to be and become human through negotiation between self-understanding and the somatic expressions of the self.

In the context of children's and young adult literature, the automaton also takes on the additional role as a puppet-like toy figure whose animation depends on the whims of its maker. Without the key, the automaton is abandoned and lifeless without movement, subjectivity, sentience, and consciousness. Its very existence is contingent

51 Martha Westwater approaches this issue using psychoanalysis concepts, arguing that the chimera in Greek mythology best typifies the adolescent's multi-faceted personality and human psyche. Each side serves as a representation of an aspect of self, showing that self-identity can never be grasped. It is an on-going process of reconciliation of differences and negotiation between the illusory self and the real self (135).

solely on the maker's decision to bring it to life, just as a toy doll's movement relies on its child owner's imagination and direction. Taking its cue from the conventions of doll tales, the automaton can thus be seen as a boundary object between reality and fantasy, capable of creating a crisis of authenticity that tests the child's concept and understanding of reality (Susan 118). Alternatively, it can operate as a didactic, normative device, possessing negative characteristics to demonstrate how they can be transformed and normalized (Gonzales 34-5). But most importantly, puppets and clockwork figures function as an allegory of youth that typifies development through objectification and performance. This aspect of adolescence is primarily derived from the automaton's ability to render the viewer the object of its gaze, so that when the youth finds himself caught and suspended in the distinctions between himself and the lifeless body, between copy and original, he is presented with the opportunity "to observe his own observations through the observation of an other," which would reveal and issue references for his own identity formation and social development (Theisen 528). Therefore, as much as the automaton fuels the imagination of death and immortality with its presence and imagination of time and historicity, it performs a distinct, particular role in dramatizing and contesting notions of development, identity, subjectivity, and selfhood.

Because the automaton's physical body never deteriorates, this implies that the most crucial aspect of growth that the automaton embodies is not the bodily life of the individual but the inner life that is found and expressed through psychological and emotional fluctuations. It is through negotiating these ambiguities and subtleties that the protagonist develops an individuated, original personality (McCallum, "Young Adult" 216). Furthermore, theorists and scholars of the bildungsroman genre have repeatedly stated that the locus of the protagonist's development is the psychological and

emotional journey that allows the protagonist's inner life to reach maturity (Hardin 19; Rosowski 68; Redfield 47). Therefore, it is this unique representation of growth simulated by the automaton's construction that enables the interpretation of its narrative as a bildungsroman. Taking this concept as the departure point, I want to explore how the clockwork automaton and its mechanical aesthetic represent and subvert the notion of growth and maturity, establishing an alternative paradigm of adolescent development that revitalizes the bildungsroman rhetoric in young adult science fiction.

This chapter is divided into four sections. The first section deals with the automaton's ability to dramatize and exemplify powerlessness, which has been identified by Roberta Seelinger Trites as the initial stage of adolescent development (x). The second section examines how the automaton sets up an alternative framework of development, which is different to the traditional female bildungsroman's methodic progression toward marriage, inner peace, and epiphany, involving education through the exploration of the natural world (Labovitz 157; Peterson 66; Rishoi 54). Subverting the ineffective, hegemonic traditions of the female bildungsroman, Sedia applauds non-identity for its strength in undermining patriarchal authority, showing that female growth should be found in the public sphere rather than in the domestic or the pastoral realm. Thirdly, contrary to the established trajectory of development that moves from innocence to disillusionment (Levy "The Young Adult" 116; Rosowski 65; Sambell 525), the automaton grows in a self-directed movement as a knowing individual from rejection to surrender, producing nostalgia as the testimony of her maturity. Lastly, to reconcile Mattie's tragic end with the discourse of hope that is vital to young adult fiction due to the age of the intended readership, the automaton's bildungsroman shows that the purpose of hopelessness is not to repudiate the necessity of hope, but rather to evoke the possibility of reading dystopian novels with the understanding that hope

essentially resides outside the text.

Power and the Living Doll

The one advantage that the automaton possesses over the cyborg is its ability to evoke ideas of development through firstly its historicity and secondly its symbolism. Whether it is in the Renaissance, the Futurist movement[52], or contemporary culture, the automaton has always been an original, unique, and creative embodiment of power. In the early twentieth century, the Futurist movement idolized the energetic progressivism of machines, enacting the mechanical automaton as a manifestation of the power of technological advancement (Onion 143). With regard to the automaton's aestheticism that contemporary culture has inherited from the Renaissance period, Victoria Nelson details how from the Renaissance to the present day the clockwork automaton has persisted in its function as a symbol of power and an object that sits on the borderline separating art and science (53-60). However, after the Renaissance when philosophizing and spiritualizing matters of man-made creation[53] began to be transplanted into literature, machines were subsequently demonized as vessels endowed with supernatural powers operated by vengefully destructive spirits. For example, E. T. A. Hoffmann's "The Sandman" and "Automata" depict the automaton as a supernatural prophet that speaks the unspeakable, while Giacomo Leopardi's "Dialogue between

52 It might seem odd to associate the Futurists with an automaton since they condemned archaeological fetishisation of the past, but the reality is that the remoteness of the past can become a realm for pleasure and consumption. Through archaeological excavation and recontextualisation, old things can become new--a process of estrangement, recollection, and recovery (Schnapp et. al 4).

53 Definitive works of Neoplatonic philosophy became available to Europeans due to the commission the scholar Marsilio Ficino received from Cosimo de Medici to translate the esoteric exegesis and mythologies, making them available to Renaissance thinkers. Under the influence of hermetic philosophy, alchemical and mechanical products were viewed as sculptural arts and transcendent living entities, corresponding to the old principles of the sympathetic universe.

Frederick Ruysch and His Mummies" articulates death as a pleasurable experience (Nelson 70). It would not be until the early twenty-first century that animated beings were once again transformed into a beacon of redemptive light and hope for humanity as a potential source of enlightenment, knowledge, and power (53-60). Rainer Maria Rilke's essay "Doll: On the Wax Dolls of Lotte Pritzel" demonstrates the utopian energies of clockwork figures, praising the puppet-angel as "a solution to the mute and fruitless idolatry of childhood, a state of innocence to which, like the Garden of Eden, we cannot return" (64-70). On the other hand, Rainer Nägele declares the automaton's creative life as a paradoxical duality, which simultaneously resists and reproduces the narrative of growth by inviting the viewer into a dialogue of identification and displacement through its likeness and otherness (17). In the novel, Mattie the automaton exhibits four distinct characteristics of power(lessness): firstly, the fragmentation of selfhood; secondly, the mechanical determinism that enhances the sense of oppression is typified by the automaton's physical construction; thirdly, as an automaton built to serve her master, it could be said that she is programmed and designed to perform powerlessness; and lastly, her own habit and sympathy toward her master, the source of her suffering and oppression.

As an assemblage of mechanical and organic parts, the automaton illustrates fragmentation of selfhood and power. In the opening scene, the reader encounters not an individual that possesses a well-defined identity, but a mechanical doll whose appearance can only be described as an eclectic collage of mechanical and organic parts. The narrator identifies and catalogues the parts one by one: her "porcelain face" is unreadable and shattered with cracks that reveal glimpses of her insides; her "pink seashell" ears add a touch of organic compound that establishes a contrast with her mechanical movements; and her hair "that used to belong to a dead boy" (8). The

morbid detail of the dead boy's hair stresses the otherness of the dead superimposed on the living, and subsequently heightens a sense of the abject by portraying Mattie's identity as overlapping or even founded on that which no longer exists. Using these visual details, Sedia effectively evokes a fragmented identity, through which power is dispersed. This sense of powerlessness is strengthened by the voyeuristic presence of the gargoyles who spy on Mattie through the window, fetishizing her as a passive object. The gargoyles render her the object of their observation, recounting every detail of her movement in vividness, yet they dare not to attempt to deduce what is underneath the exterior appearance of the automaton. As a result, their objectifying gaze creates an invisible empty space inside the automaton just as Heinrich von Kleist believes that "the place that the dancer's 'soul' would have occupied is empty or lacking if the dancer is a marionette" (Theisen 525). As a result of its physical construction and being objectified through the gaze of the other, the automaton is rendered incapable of creating a concrete sense of identity and robbed of its right and power to exercise its individual subjectivity, marking the automaton a site of powerlessness.

The automaton, as a mechanical construct that requires a key to function personifies the kind of powerlessness that is the result of mechanical determinism. The automaton's dependence on an external key to trigger its animation signifies that its life is not its own. The automaton is never moving in a way that defies the laws of physics, implying that the automaton is not in control of itself because it can only move according to deterministic laws that exist outside itself. This causes the automaton to feel threatened by the other, which is illustrated when Mattie first encounters Iolanda. She admits to feeling inferior to Iolanda due to her "fleshiness" and bodily completeness that she lacks as a clockwork automaton. Mattie's sense of inferiority and struggle against her mechanical constitution are amplified when her clockwork gears

fail in the middle of a mechanic's gathering, causing her to lose consciousness and control of her own body. Later when she is revived by Loharri, she knows that she should be grateful but instead she feels violated because he "exposed her heart for all to see, he wound her up with the key around his neck right in front of her friends" (47). This is characteristic of the somatic aspect of the automaton's powerlessness, which is consistent with what von Kleist observes, that the puppet is never in control of itself because it requires an external source of power to be able to function and move. Viewing the automaton and the puppet as a spectacle, von Kleist's identifies this diffusion of power as a "negative gain", by which "all the other limbs are what they should be--dead, pure pendulums following the simple law of gravity" (24), meaning that the puppet moves because the puppet is not in control of itself. This is a form of negative gain according to which the puppet moves while never having to feel responsible for its movement.

When Mattie thus dramatizes the relationship between powerlessness and determinism, its also indicates its allegiance with Donna Haraway's body politics. Using the cyborg as the focalizing imagery, Haraway contends for the human right to be liberated from our bodily constraints. She argues that in the twenty-first century we are seeing a breakdown of the distinction between animal-human (organism) and machine, causing the machine to become disturbingly alive while humans ourselves are "frighteningly inert" in our resistance to our bodies (317). Through conceptualizing the struggle against bodily confines and deterministic construction, whether it be biological or mechanical, the automaton and mankind converge on the mutual ground of their alienated bodies, causing the cyborg to become a reflection of mankind's psychological and physical conflict. This occurs in the novel when through Mattie's point-of-view, the reader sees Loharri's facial scars mirroring the cracks on Mattie's face (10-1), inviting a

precarious comparison between the human and the machine. On the basis of the automaton's inferiority complex and physical mechanicality, the sign of powerlessness against one's own body is thus assigned to the automaton so that it can function as a site of conflict where the critical distance between appearance and inner life is magnified.

As the automaton's physical appearance and its inward trajectory of growth become more polarized, it also becomes a site of performance, where codes and conventions of behaviour are appropriated and simulated. For example, Mattie learns from observation that tilting the head to her shoulder is a coquettish expression, which she imitates and reproduces in her daily life as a performance (12). There is a certain kind of tragic irony in her imitation that only a sentient automaton is able to affect. As she uses her body to entertain Loharri in order to obtain favours, it becomes obvious that her performance and imitation are effective only because they highlight her inferior mechanicality. This illustrates the incongruities that are suspended in a space between one's will, intent of action, and the perception of one's act, which then translate mechanical determinism into a technique of the performance of powerlessness.

Mattie's appearance resists as well invites identification, which means her existence will forever be located in the realm of fake imitation, so that as long as Mattie lives, she is endlessly and continuously performing powerlessness. Whenever Mattie performs the role of an obedient servant out of duty and pity, she is unequivocally performing powerlessness in spite of having already been released from such obligations. Mattie admits that often she has to surrender her right as a liberated being in order to fulfil the gender role[54] that has been prescribed by her maker: "Mattie was a woman because of the corset stays and whalebone, because of the heave of her metal

54 It is just as Judith Butler perceives gender as intricately linked to the idea of performativity, the ways in which the subject becomes eligible for recognition, raising the issue of the rights and efficacy of those rights of the subject ("Performativity, Precarity and Sexual Politics" 5).

chest, because of the bone hoops fastened to her hips that held her skirts wide--but also because Loharri told her she was one" (63). By assuming the role of a slave in spite of having none of the obligation, Mattie reveals the subtle mechanisms of gender parody, which is an imitation without an origin and a production, creating a perpetual, continuous displacement of identity in an openness or resignation to recontextualization (Butler *Gender Trouble* 175-60). This reveals that the automaton is a construct of powerlessness, the product of parodying a fake in rapid influx of imitations and displaced identities.

Hypothetically Mattie should be able to escape the habit of performing powerlessness if she ceases to be "alive", but to Mattie even death seems to perpetuate Loharri's oppression. In a conversation between Mattie and Niobe, Niobe tells Mattie that people return to where they were born. Mattie then realizes that when she dies, she will inevitably return to Loharri's laboratory since she is "born of metal and coils and spare parts and boredom; this is where she would find herself in the end" (73). In addition to being physically bound to the notion of powerlessness, Mattie is constrained by sympathetic familiarity to remain subservient to her creator so that powerlessness is also seen as being reproduced out of habit. Whenever Loharri comes to her door, begging to be comforted, she is forced to feign servitude because that is the only way she can simulate the semblance of normality that Loharri seeks (120). The bleak, depressing image of death and Mattie's habitual performance of servitude fortify the claim that the automaton is inherently powerless: it cannot control the mechanisms of its own body, nor can it control its own fate.

Even though feminist theorists believe that the novel of awakening portrays these negative emotions and experiences to increase the individual's emotional capacity and to emphasize long-suffering as an attribute (Rosowski 67; Hardin 19; Abel et. al 6),

Sedia clearly shows that this convention should be abolished, doubting its efficacy especially when it is clearly self-defeating and regressive. The automaton reveals that ultimately the female bildungsroman's search of inner peace and fulfilment is futile. Rather than leading her toward emotionally satisfying epiphanies, her emotional journey only causes her to realize that she can never escape Loharri's authority, emotionally or physically, even after she dies. Consequently, it is profitable to see Sedia's humanization as a critique of the female bildungsroman using representations of powerlessness, mechanical determinism, and gender parody.

The Clockwork Model

In order to examine Sedia's revision of the female bildungsroman in more detail, it is helpful to address the matters of framework and trajectory separately. Regarding steampunk's formulation of a new bildungsroman paradigm, Sedia restores the slave narrative as an alternative framework because certain aspects and characteristics of the existing paradigm create contradictions and complications through its valorization of the female consciousness. The female bildungsroman is a fairly new subject that emerged during the 1990s. Though nineteenth century novels like *Jane Eyre* and *The Mill of the Floss* can be identified as novels of female development, generally female characters in Victorian novels are represented as dangers, or paradoxically they are portrayed as static fixtures of the domestic scene (Kontje 102). The female bildungsroman is defined as "the novel of awakening", meaning that it achieves maturity by raising the female protagonist's awareness of her own social limitation and by contrasting her reality with the imagined freedom of her romantic fantasy, following

a general pattern in which "a young girl, denied direct experience of life, shapes her imaginative existence through literature and views marriage as the means by which the inner life of the imagination will join with the world of action" (Rosowski 60-5). It emphasizes inner concentration in place of active accommodation, rebellion, and withdrawal (Abel et. al 8). It often uses the myth of Eros and Psyche to portray and represent the growth of a female character who is already sexually mature, allowing her to experience difficulty in differentiating sex and love and culmination of a discovery of a hidden, inner self (Ferguson 231). Growth comes naturally from the tension between the inner world and the external, social world, and it is common to end with some kind of personal sacrifice as closure in the heroine's attempt to find value in a society that denies her opportunities (Rosowski 68). The conflict between freedom and dependence and problems such as the lack of education and the penalty of exploration are all key aspects of the female bildungsroman that reinforce the claim that maturity can only come to the heroine when she frees herself "from the pervasive image of the self-condemning woman by removing the burden of guilt," assails her womanhood, and thus sheds the historical and emotional baggage and the misogynist self (Labovitz 253). So broadly speaking, Western literature has certainly come a long way from the tradition of presenting marriage as closure and fulfilment for the heroine, and feminist writers can be seen recasting and reclaiming the traditional gender-biased form of the bildungsroman.

However, it is perhaps too early to assume that this model is beneficial to the understanding of adolescent growth in young adult fiction. There are three dimensions of the established female bildungsroman that are refractory to a more versatile, flexible perspective of growth. Firstly, the claim that inner life is an innovation exclusive to female development is hyperbolic because historical evidence and earlier theories

reveal a similar emphasis on inner growth in the male bildungsroman. For example, Hegel's "Phenomenology of the Spirit" shows that the male bildungsroman also deals with the matter of inner life with a philosophical approach to portraying the futility of self-development, while Frederich Theodor Vischer asserts that love and oneness are also crucial to the male education (Kontje 24-7). In other words, the notion that the female bildungsroman is directed by an inward trajectory to articulate the female consciousness should be perceived as flawed and impractical, requiring further discussion as to how it can be distinguished from its male counterpart.

Secondly, combining male and female attributes to form the basis of growth in patriarchal society is not the solution either. The inevitable separation between the professional and the domestic has been criticized by feminist writers as another facade of patriarchal conventions, creating tensions between form and plot since the form presupposes male development but the plot implies a female "I" and value system (Abel et. al 10). Furthermore, Eve Tavor Bannet notes that if the heroine fails to harness an inner female energy to complete her growth, it is most likely because the author is transforming the heroine according to hermaphroditic ideals as a compromise so that the heroine possesses both "feminine softness" and "manly sentiments" such as courage, honour, and determination (216). What this means is that in order to develop the two distinct aspects of her character, the heroine often ends up creating a rift in her lifestyle, demarcating her professional realm[55], in which she expresses and justifies her "manly sentiments," from the domestic realm, where she is free to indulge in feminine leisures and display demeanour that would otherwise condemn and undermine her

55 Labovitz observes in literary rhetorics of female independence that even when the heroine participates in the public sphere as a professional, she is rarely portrayed as a figure who accomplishes. Instead, she is often depicted as a Sybil-like seer whose competence lies in her ability to see and interpret "ideals" and "sudden illuminations" that lead the heroine away from education and responsibility and subsequently toward a realization of powerlessness, and resulting in a divorce between ideal and reality (157).

public identity.

Thirdly, the existing system falsely assumes a hegemonic, linear development that can be achieved methodically and universally by all. The evolution of the bildungsroman works to unrealistically unify and subsume the different discourses of development under one paradigm, which neglects the role of the marginalized and alienated. Christy Rishoi criticizes the master narrative as insufficient to induce female development because it is erroneous to assume that if you do everything right as you grow up you will invariably and successfully become an adult (54). Therefore, though the female bildungsroman already functions within an institution of ideology and conventions, it is handicapped by its presumptuous connotations of inwardness, incongruity that arises from an ineffective compromise with the male bildungsroman, and the tendency to perpetuate a linear trajectory of development.

While the automaton as a figure of servitude and powerlessness does not necessarily overthrow the existing system using radical measures, it still has the ability to formulate an alternate framework of female development. This revision is largely based on the model of the slave narrative[56], which has been identified as the fundamental prototype for female growth in the sense that as a combination of the postmodern discourses of multiplicity and intersubjectivity, it is founded on sociopolitical alienation but it still privileges the liberal humanist conception of identity and individuality (Rishoi 62). By portraying the automaton as a slave figure, Sedia shows that the automaton's non-identity has the potential to be inverted into an attribute of power. The automaton also progresses toward finding emotional fulfilment in the

56 As one of the most influential narrative traditions of American literature, the slave narrative is a biographical account of a fugitive or a former slave, usually written by the slave personally. The focus is on the slave's suffering and the tribulations of earning freedom, which usually takes the form of resistance or escape, with a liberal humanist attitude towards human dignity. Slave narratives began appearing in the eighteenth century; some early examples include *The Interesting Narrative of the Life of Olaudah Equiano* (1798), and *History of Mary Prince, a West Indian Slave* (1831).

public professional realm, reuniting social elevation with inner growth. Finally, Sedia incorporates the element of marginality into the bildungsroman structure, suggesting that the marginal figure is more eloquent in conveying and embodying the individual that is in the process of becoming.

To clarify and strengthen Trites' claim that powerlessness is an essential stage of development, Sedia portrays powerlessness as the trigger for critical awareness. The fear of freedom should function as the stimulus for the oppressed's longing for freedom. At first the oppressed might have already internalized the image and principles of the oppressor, making them fearful of freedom, eventually they will learn to dispel that image and replace it with hope for autonomy and responsibility, pursuing freedom as the prize of a conquest (Freire 47). This is reflected in the heroine's developing desire for freedom. When Mattie is able to recognize that she has already internalized the experience of oppression, it is also when she can finally begin to hope for freedom, allowing her to exploit her past as a negative experience of freedom. For example, when Iolanda commissions Mattie to a specialized alchemical device that she could use to control another's will, Mattie bitterly reflects how she is able to understand the psychology of compulsion because of her negative experience of powerlessness: "she understood coercion--like only an automaton with the key in somebody else's hands could understand. True enough, Loharri was good--he never threatened her with the key, but the very fact that he could if his heart turned that way was enough" (121). This also reveals that not only is it because she is powerless to begin with that she seeks power; she seeks power because the alternative is an incomplete understanding of the mechanisms of human emotions and intersubjectivity. This proves that if the heroine has never experienced powerlessness, the development of the heroine's emotional capacity is curtailed. Spacks believes that adolescent identity is larger than the

individual, existing in a constant state of desire that generates conflict and makes action (293). This implies that "[t]he more powerless the subject is, the more inventive and creative she tends to be in shaping her life" (Rishoi 43). Therefore, what the automaton's experience typifies is that without firstly experiencing powerlessness, the adolescent cannot be properly equipped in his or her psychological warfare against the oppressor, which occurs both internally and externally.

Any control mechanism that quantifies power is inadequate and seriously flawed, thereby signalling a revisionary approach to power that recognizes it as an on-going performative process that involves creativity, sophistication, and translation of symbols and meanings. Sedia revitalises the discourse of power by transforming non-identity as a sign of weakness into a power mechanism that enables the individual to destabilize the condition of oppression. At one point Niobe tells Mattie that being invisible is more than an advantage, that sometimes non-identity can be a survival instinct or technique. Mattie replies that it must be so because being invisible means that she avoids being made into a spectacle by Loharri (115). This suggests that invisibility, inferiority, and non-identity are all means of empowerment. By using other's expectation of her inferior status, the heroine is able to subtly achieve dominance. For example, at the mechanics' gathering, Mattie is seen exerting influence over Loharri, the figure of power and authority that was once her master, by using her servitude as a front and a weapon. Just as the means of empowerment is subtle, the act is just as equally cunning and concealed:

> She threaded her arm under his, and felt his tense sinews relax under the copper springs of her fingers. She hated admitting it to herself, but she stayed close to him because of the influence she had--she had the power to make him less concerned and more at ease, to make him smile even though it pained his broken

face. (37)

To indicate her subordinate status as Loharri's companion rather than his equal, Mattie threads her arm under his. Yet this simple act of meekness and flattery is what gives Mattie influence and power over Loharri, rendering a realistic portrayal of how the vulnerable and the weak can also use the appearance of powerlessness to reverse their relationship with the oppressor.

More importantly, inferiority is represented as a choice that the heroine makes with critical awareness. At the gathering Mattie also notices several automata whose movement seem "measured and devoid of any indication of free will" (43), creating a contrast to Mattie, who is currently ingratiating herself back into Loharri's favour to gain political benefits (43). Mattie attempts distance to herself from those mindless automata because it is too painful for her to remember her time as Loharri's slave, rationalizing her perception of her fellow automata by telling herself if they were to have a mind, they would have suffered knowingly in their servitude, but at the same time, that suffering would be an empowering choice that they knowingly make (43). This shows that the misery of servitude is a choice for her to take, it is something that can be transformed into more than a convention of oppression--an empowering opportunity that allows her to rise to a more advantageous position.

The automaton's power reversal reflects the adolescents' obsession with enacting and deconstructing power. Power cannot be confined to the realm of violence and appearance, especially when the minority occupies an inferior position. Power can be covert; it can be manipulated and distorted to such an extent that the performance of powerlessness is a sign of dominance. In addition, an act of power is something that can be driven by the need to be creative when the individual is placed in a desperate,

helpless circumstance[57]. In an interview with Scott Westerfeld, he reveals why teenagers are fascinated with dystopian fiction in recent years since the publication of *The Hunger Games*. It is his impression from observing trends of dystopian fiction that from a teenager's point-of-view, "a blasted hellscape and a hyper-controlled society aren't so different. Or rather, they're simply two sides of the same coin: one has too much control, the other not enough" ("Scott Westerfeld"). This conveys the idea that every teenage rebellion contains an obsession with gaining power and control. Nevertheless, as the automaton's performance of powerlessness suggests, power is not something as simple as an external force of oppression. Trites synthesized a very detailed, comprehensive definition of power that reveals power as complex, relational, dynamic, and unstable:

> Adolescent characters exist in a "perpetual relationship of force" (Foucault, *Power* 92) created by the institutions that constitute the social fabric constructing them. Because they are defined within perpetual forces of power, power "enacts [them] into being" (Butler, *Psychic* 13). That is, the social power that constructs them bestows upon them a power from which they generate their own sense of subjectivity. As acting subjects, they assume responsibility for their position in society (Lacan, "Science and Truth" 7), whether they engage their power to enable themselves or to repress others (French 505). Power is a force that operates within the subject and upon the subject in adolescent literature; teenagers are repressed as well as liberated by their own power and by the power of the social forces that surround them in these books. (7)

57 See also Roger Cox (1996). His work shows that most intimate relations formed between the child and the parent are ones of power, like the adult's exercise of authority over the child for his/her benefit. And sometimes this may be viewed by the child as something beneficial as well since he/she can gain something out of it. The tension between repression and benefit becomes more evident as the child matures.

Therefore, while the issue of power should be approached without haste or presumption, it could also be said that the automaton's manifestation of covert power play is being used to mirror the adolescent's power status.

Just as it is difficult for teens to react to changes in their relationship with figures of authority[58], Mattie is inclined to preserve and care for the bond she shares with Loharri in spite of being habitually patronized because it is what connects her to humanity. When she looks at the gargoyles and their "tormented not-quite life" she questions her own decision to free them from their fate, because that would mean breaking the bond the gargoyles have with the stone city in which they were made, ironically revealing her own intention to maintain the bond she shares with her creator (169). This model of response resembles the conclusion found in a study of recovery from sexual and physical abuse. Jenny Kitzinger notes that if the individual has been brought up to believe that it is not their right to have power, empowerment can often have damaging effects because powerlessness "is in the food they eat, the air they breathe and the beds they sleep in" (173).

Therefore, what the automaton reveals is that it is necessary to conceal power using the complex psychology of children and adolescence who perceive themselves as the oppressed yet are paradoxically desperate to preserve the status quo. This causes them to exercise power only through non-identity and performance of powerlessness in order to be able to maintain a semblance of order and normality. Consequently, the automaton participates in the discourse of power by uncovering the hidden mechanism of power enactment such as deference and submission. It also migrates the conception of power into the realm of conspirational psychology, portraying non-identity and

58 In the context of parent-child relationships, it has been suggested that though there may be "minor disagreements but these would be resolved in a friendly manner and the parent and child would be emotionally attached still to one another" (Graham 13).

inferiority as the empowering ability to influence the external world. With this revised concept of power that transforms non-identity into a device of power, adolescence can thus be politicized and situated in an intricate web of fluctuating relations where there is a myriad of different forms of power and empowerment.

Even though though Margo Kasdan is skeptical of the efficacy of female empowerment, claiming that the traditional convention of female characters who *are* and male characters who *do* is still heavily used by modern writers (258), Sedia's automaton foreshadows and symbolizes a turn in modern writers' representation of female empowerment, through which the public and the personal are blurring into one another in the bildungsroman narrative. In the novel this begins with the pivotal moment when she realizes that her master within the domestic environment is capable of knowing and expressing fear in the public realm (30). This kind of realization signals the opportunity for the heroine to become independent by obtaining a career in order to resolve the master/slave power struggle in an alternative arena.

The appearance of "career woman" in female bildungsroman novels has been highlighted by Rosowski as a significant postmodernist phenomenon. She argues that any openly display of commitment to outward pursuit[59] is vital to the heroine's transition from the personal and private realm of marriage and domesticity to the public sphere of work and profession (66). Nevertheless, this formulaic transferral of the heroine from the personal to the public is inadequate and incomplete because it portrays the abandonment of "womanly sentiments" in pursuit of prestige and status, which are traditionally related to ambitions of male characters who leave home or the provincial life, searching for excitement and novelty in the city (Buckley 20). Avoiding this

59 Critics lay out the male path of development as one that moves externally and vertically toward a clear teleological destination, while the female growth is seen to deal exclusively with "inner concentration", emotional fulfilment, and withdrawal (Abel et. al 8). Such differentiation is dangerously presumptuous because any bildung should involve both inner life and education.

common trap that writers of female bildungsroman tend to fall into, Mattie's empowerment takes on an amalgamated pattern of nurturing her inner life within the privatized workspace: "She would work and find out how this stone was different from any other, and why it held the gargoyles in such thrall. Work offered the comfort of familiarity and preoccupation with matters she could control, and which did not hurt so much" (226). On the one hand, her work is motivated by an intellectual, scientific curiosity to discover the nature and cause of the gargoyles' suffering, which is normally considered as a "masculine" pursuit in the likes of other steampunk forefathers such as Victor Frankenstein or Captain Nemo. At the same time, she carries out activities, which are usually associated with "feminine" sentiments that evoke the domestic scene, such as self-scrutinizing, introspection, and finding solace and retreat in her professional life. Thus Sedia portrays the heroine as someone who experiences epiphanies and revelations that are valued for their importance to inner growth in the professional sphere, which is subversive and beneficial to revising the female bildungsroman paradigm.

Through this self-directed movement that takes place in her profession, Mattie steadily moves toward a better self-understanding, fostering growth and consistency of her inner identity, while advancing in the external world intellectually and politically. This embodies an education that abolishes the inward and outward separation through the natural fluctuation of her consciousness. For example, when she is creating the blood homunculus[60] as requested by Iolanda, she is afforded the opportunity to self-reflect by drawing a parallel between the homunculus and herself as artificial creations

60 As early as thirteenth century in Europe, myths of homunculus or 'golem', which means 'unformed' or 'amorphous' in Hebrew, or homunculus grew in the popular entertainment of the ordinary folk as well as in the erudite, religious texts of scholars and priests. Alchemy reinforced the belief that metals were alive and thus creations fashioned out of metal were infused with some kind of soul-matter through the transformative work of the alchemist/theurgist (Nelson 52).

through remembering. The memory is superimposed on her present sentiment when she is fighting the decision to destroy her own alchemical creation, with its liquid mouth and bubbles of blood on the surface of its small, mutated body (229). In this dialectic representation of the past overlapping the present, which is reminiscent of Benjamin's historical materialism that perceives anachronistic time experiment as a collage, the blood homunculus becomes the locus of her critical consciousness and her remembering. This signifies the new trend of the bildungsroman that looks at the heroine as someone who neither surrenders herself entirely to scientific and intellectual pursuit nor devotes herself to feminine activities. Instead, the subversive bildungsroman portrayed by Sedia dissolves the personal and the professional division, revealing a more versatile, non-linear approach to nurturing the female consciousness.

This emphasis on finding a balance between inner life and the professional life has been commented on by Jeffrey L. Sammons, who once said that growth should be a process through which the individual shapes the self from its innate potential rather than the environment (66). Related to Sedia's emphasis on inner life is Martini's bildungsroman theory, which claims that the true purpose[61] of any novel should be to reveal everything in a chain of cause-and-effect, producing the rigorous growth of character that is not unconscious and methodic but self-aware, organic, and spontaneous (20). On account of this, what Sedia accomplishes with the female bildungsroman may not particularly radical because traces of liberal humanism can still be found. However, the self-directed nature of the automaton figure, that is, its capacity to participate in intellectual activities without compromising its emotional needs, has the potential to restore the tradition of the bildungsroman genre to its original form of

61 In addition, the underlying purpose of any bildungsroman or young adult novel is to educate the reader on the process of maturation, assimilation, and self-development, directing the envisioned formation of the reader and stimulating the latter's already-present potential (Mahoney 103).

organic growth, which accentuates the process rather than the result. The automaton thus serves as a reminder that it is not a matter of succeeding or failing in achieving a balance between the male and female ideals of life, or whether there is integration into society that affirms the individual's new identity or not; instead the automaton reveals that the most crucial principle is that there is change in the heroine's social and inner being.

Building on the claim that the young adult novel harbours a force of social education, Hintz and Ostry argue conversely that the young adult novel as a bildungsroman should serve no other purpose than to educate the reader on governance, the possibility of improvement, the role of the individual in a society, and the limits of freedom by setting up a confrontation between the protagonist and the world to provoke the reader to question and examine his society (1). In Sedia's *The Alchemy of Stone*, however, it is curious to see that a model that reinforces notions of normativity is being used to frame a bildungsroman narrative, in which the heroine celebrates her own alienation, appearance of powerlessness, and non-identity. Although by focusing on a marginal figure that is neither human nor machine Sedia risks creating an atmosphere of ambivalence or incompleteness, which Gary Westfahl sees as a serious flaw of any novel that is written for young people (*Science Fiction* 90), I would like to argue that because of the automaton's social alienation, it is placed in a unique and privileged position in its reassessment and re-imagining of female bildungsroman.

Using Roland Barthes' influential essay "From Work to Text" that postulates the reading of any text as "the play of language", the bildungsroman can be interpreted as fundamentally rhetorical in function. Barthes believes that when reading a text, the reader is not simply playing with the text; the text plays itself, which is achieved by "a serial movement of dislocations, overlappings, variations" that is founded on

associations, references and contiguities (84). The automaton can thus be identified as the focalizer of the multi-layered, multi-voiced discourse of growth, and using its marginal status, the automaton presents an alternative to the existing blueprint of growth and subverts the tradition of socializing and assimilating the protagonist into a system of pre-existing roles and pre-determined behaviours.

The marginalized figure is a unique pillar of the clockwork bildungsroman because it functions as the one who sees simultaneously the past, the present, and things beneath the surface through its pluralist ulterior perspective. This is most clearly shown when Mattie is on the verge of completing her homunculus, at which point flashbacks occur to illustrate the symbolic significance of the automaton as an individual who sees the invisible and the historical, a figurative embodiment of visions and epiphanies (277). Sedia therefore proves that when using the socially alienated automaton as the focalizer of the bildungsroman, the creative forces of the marginalized figure can brought into a new social dimension, strengthening notions of social education through its dialectic and subversive representation of social memory and critique.

As a result, the automaton is transformed into that which revitalizes the discussion of female empowerment through temporal dislocation, experiential play of rhetoric, and the effective use of symbolism. In *The Alchemy of Stone,* without the perspective and flashbacks of the marginalized, there can be no reaction against the bildungsroman's normative socialization. The marginal figure is the source and interface of the other, supplying allegorical imagery that connotes social subversion, explosion of symbolic energy, and historical resonance that bridges the past and the present. The automaton thus sheds light on the process of growth as the necessary state in which one is propelled by an inward force that ambivalently creates and deconstructs narrative continuity, just as historiography is not a complete denial of the past but a

form of remembering that collects the fragments of the past and reproduces them in the present through performance.

Therefore, because the automaton is represented as a visionary, its bildungsroman also empowers the heroine to take the role of the one who acts and enacts change, rebelling against the present and undermining a deterministic view of progress. This is reminiscent of Thomas Carlyle's theory of chaos, emphasizes the marginalized due to its propensity to act not according to expectation and social codes, restoring the element of unexpected action to progress, change, and development, thus undermining mathematical determinism. His theory asserts the importance of individual circumstances and the ability of the smallest error to cause catastrophic consequences and deconstruction of meaning through the reconfiguration of chaos and order (Taylor 409). In short, it is a theory that explains the significance of the automaton by framing each individual within a web of relations. It justifies the existence of an individual of no significance in history as he or she evolves into an important personage or a revolutionary.

It also explains why the virtue of revolution is to provide fluidity rather than stability. Traditionally in historiography individuals are assigned values according to their actions in a historical economy according to the law of progress, which over time institutionalizes the real where the hegemonic representation is the law (De Certeau 199-200). This is reflected in the the tradition of the bildungsroman genre, which dictates that there is only one law, one path, and one trajectory of progress and education. It fails to take into account that history is never linear nor universal, but it is and will always be characterized by discrepancies, multiplicity, and disruptions, such as war, immigration, and chaos. In order to reflect this level of complexity and sophistication, Sedia reveals that it is more meaningful to use the perspective of an

alienated heroine, who can undermine the system of unified historical forces using its marginality and otherness.

Bell Hook argues that by locating the identity within a marginalized space, the individual embarks on a process of decentralizing the oppressive other and claiming the right to subjectivity:

> I was not speaking of a marginality one wishes to lose-to give up or surrender as part of moving into the centre, but rather as a site one stays in, clings to even, because it nourishes one's capacity to resist. It offers the possibility of radical perspectives from which to see and create, to imagine alternatives, new worlds.... (qtd. in Soja and Hooper 191)

The Alchemy of Stone exhibits the same understanding of relational, anticipatory understanding of progress, venerating the marginalized individuals as the factor of unpredictable social change. They are the people who have been oppressed and ignored, such as Mattie the emancipated automaton who is imprisoned behind invisible bars, Niobe the foreign eastern alchemist who possesses foreign secrets of alchemy and science, and Ilmarekh the Soul-Smoker whose existence is hated yet needed by the people. These alienated individuals are the "small errors" in the mathematical equations of progress. They are the ones who successfully bring about revolutions and political upheavals that lead to tremendous and immeasurable consequences. They are the voice of change and revolution. Beresta once confides in Mattie, "I've done nothing wrong, but I was killed because I was a foreigner. You don't treat us well, this city doesn't. You don't treat anyone well, not even your own. Many are unhappy--is it a surprise that they are coming together to stop your injustice?" (211). Even though Beresta speaks from the perspective of someone who has been treated like a pariah, her expression encapsulates the purpose of bildungsroman: to compel the reader to critique, to

examine, and to question their own society, which cannot be accomplished if the process of socialization[62] is smooth, normative, mechanical, and perfectly executed.

From Knowing to Nostalgia

The technique of framing the bildungsroman narrative around figures that begin as displaced, alienated individuals can be seen as a way for writers to revise and reconstruct the trajectory of female development, which is typically composed of "a young girl, denied direct experience of life, shapes her imaginative existence through literature and views marriage as the means by which the inner life of the imagination will join with the world of action" (Rosowski 65). The traditional trajectory reveals a formulaic pattern that presupposes growth as a natural process derived from the tension between the inner world and the external, social world, ending with some kind of personal sacrifice in the heroine's attempt to find value in a society that denies her opportunities.

The pattern also legitimises the exchange of innocence for knowledge, and the natural state of the unconscious for the cultivated, rationalist discipline of the mind, which critics have criticized as ineffective and unsympathetic to the knowing child[63] of twenty-first century. Kimberley Reynolds identifies the presence of the knowing child in modern fiction as the product of taking into account the ambivalence and complex portrayals of young protagonists who are independent, free agents capable of making accountable decisions, resolving problems, dealing with failures, shame and regret (3).

62 Karl Morgenstern's interpretation of bildungsroman does not imply a smooth, gradual process. Rather, the *bildung* involves constant "revision, continued cultivation, re-education" with the end result proving, determining, and perfecting the human being's intellect, aesthetics, and morality, meaning it does not merely involve one's social or political advancement (Martini 9).

63 See Higonnet and Holland for the historical formation of the knowing child.

The rise of the knowing child consequently introduces what critics see as the anti-bildungsroman, a literary model that parodies the traditional components in order to illustrate the futility of the bildungsroman project (Redfield 53). Even though the bildungsroman model is increasingly seen as the representation of the failure of growth and progress, this does not mean, however, that it ceases to exist. The knowing child simply requires an alternate trajectory of growth and cultivation that is embodied in steampunk's representation of temporal play within the bildungsroman paradigm.

Rather than portraying the heroine as naively ignorant of the mechanisms of society and politics, Sedia depicts her as being aware of the subtleties of political movements. Mattie is placed in a critical but awkward position to highlight the gradation and degree of her political advancement. For example, her multiple identities, as a mechanic's creation, a professional alchemist, and a liberated automaton that has no political or social rights, form the basis of her pluralist consciousness, through which develops the critical perspective necessary for ironic self-examination and a healthy suspicion for the present political conditions. In spite of her potential for political prowess, she confesses that she tries to not think of politics too much because "why worry about something she would never have an impact on...Mattie only wanted to do her craft and worry little about civic planning" (39). The combination of perspicacity and cynicism thus typifies the obsolete condition of the innocent child and the urgent need to formulate a pattern that is sympathetic to a child that is self-aware and critical.

Therefore, though the politicization of the adolescent figure may be arbitrary, pre-arranged, and compulsory, it is more necessary to highlight the individual's internalization rather than outward response in the female bildungsroman, giving priority to the growth of the inner, knowing child. The allure of the knowing child is

also examined in *Politics of the Postmodern,* in which Linda Hutcheon realizes that the presence of cynicism towards power is ubiquitous because we live in an age that is narcissistically ironic[64] (51). Consequently, Sedia's revision of the bildungsroman is not simply reconfiguring the trajectory of female development in order to incorporate the element of critical consciousness that is typical of the knowing child, it is also aiming to denaturalize the dominant features of power using irony and self-reflexivity in the heroine's self-interrogation.

As crucial as it is for female growth to give credence to social politics, the experience of love and sexual awakening is often identified as the rite-of-passage in the heroine's social education. Sedia's novel also incorporates the experience of love, but it is done in an ironic, self-reflexive fashion. In Sedia's version, even though she experience love along the way, it is secondary to the fear of what would happen if she fails to obtain her key that is necessary for her formation of autonomy and independence. This suggests that fear of remaining insignificant, alienated, and dependent is a much more powerful stimulus for growth, which the heroine realizes through dialectic memory and past-oriented sentiments such as remorse and nostalgia that invoke temporal hybridity:

> If they could do this to a man, what about to a girl automaton whose position in society was tenuous at best? She rose from her seat on the floor with a jerking movement, eager to do anything so as not to think the awful thoughts that threatened to overwhelm her. She regretted spending the money on books; she needed to hoard it, to save it, because there could be a day when she would be needing to bribe people to save her life. (82)

64 Michael Saler believes that the ironic imagination is the only rational enchantment. It is way to experience wonders and marvels while avoiding the enchantment's potential to beguile, embodying self-reflexivity and self-consciousness (140).

While the formation of subjectivity, which is crucial to young adult fiction for it to be recognized as realistic and subversive (Hintz and Ostry 1), can take place in marriage to highlight the importance of social order and continuity, Sedia uses it to self-reflexively underscore the flaw of the existing paradigm with the idea that growth will only occur when the heroine realizes the futility of romance and begins to retroactively experience the terror of oppression and question the institution that she has been initiated into.

Rather than believing in the illusion of social integration as the culmination of growth, Mattie reveals that after being absorbed into the political space, there is only epiphany that generates a transformation of safety into traumatic despair:

> She had realized something last night, and the terror of understanding weighed heavily on her mind. It didn't matter what one thought or did--once perceived as an enemy by a malignant, blind force, one would be treated as such. Those who prided themselves in their intelligence and ability to rule and those who rebelled against them were just like the mindless automatons collecting the dead bodies and limbs amidst the carnage, like the enforcers that moved through the eastern district arresting whoever they saw fit and handing them over to the Soul-Smoker. There was no difference whatsoever; Mattie had been mistaken to think that there was, that they would listen. (208)

By being assimilated into the political regime that instigates systematic culling and mass murder through bigotry and a perversion of justice, Mattie experiences the opposite of all that the traditional bildungsroman implies. Contrary to feeling like the experience of entering into society has shown her righteous truths and enlightenment, Mattie realizes that her sociopolitical participation only liquifies her sense of reality, creates anarchy, and induces a sense of identity fragmentation to the extent that she feels like the terrors could "rend her to pieces, limb by limb, gear by toothed gear,

nothing left of her but a pile of spare parts, just like the one that occupied most of Loharri's workshop" (225). The impact of her despair, which borderlines on suicidal intent[65], confirms what Rebecca Carol Noël Totaro suspects to be the turning point of the evolution of young adult fiction. Rather than being driven by a utopian impulse, young adult fiction has begun using anti-utopia that contains suffering as a realistic guide to growing up, because by keeping the threat alive, "the author of utopia offers to his or her reader a realm that is grounded in present conditions...Utopian literature supplies a place for practice, not escape" (128). Therefore, as important as it is for the reader to have hope, Sedia reveals that it is more important to present the experience of suffering since the real enemy here is not the obstacles or trials that one encounters, but ideologies that blind individuals to the hypocrisy and bigotry of a sociopolitical system that is run and created by adults.

The sense of disillusionment is enhanced when Mattie realizes with numbing despair that all the experiences and knowledge she has gained are for remembering the truth that she had forgotten, that everything "was just an illusion--she was emancipated because Loharri let her, and therefore she had no power at all. Everything she had was either given or allowed by him" (235). This practice of incorporating disillusionment[66] is not uncommon. Elaine Ostry argues that young adult fiction often uses adult hypocrisy as a narrative device that enables the protagonist to enter into a dialogue with the current sociopolitical ideologies because "that is part of the maturing process. The teenagers must fight the adults. The dystopia, then, is a metaphor for the adult world

65 Sedia goes as far as implying that pain is one of the basic mechanisms of growth installed in our being. When introducing herself to Beresta, Mattie coincidentally mentions that she is familiar with pain in spite of the absence of a biological neuro-system. Beresta asks what kind of man would build a machine that feels pain, to which Mattie sees no need to answer because they both know it takes "a special brand of cruelty, cruelty masquerading as concern. *It will help you learn better. This way you won't damage yourself. It's for your own good*" (213, emphasis in the original).

66 Rishoi also believes that although children see adults as powerful beings who run the world and wonder if their superiority is apparent to them, it is only when they reach adolescence that they are on the verge of questioning that superiority (82).

that specializes in crushing conformity and hypocrisy" ("Clones and Other Formulas in Science Fiction for Young Readers" 198). The problem is that this kind of disillusionment is often viewed as bittersweet when in fact it can be extremely traumatic for the individual, even to the point of overwhelming him/her with despair and hopelessness. For example, near the end of her journey, it is not the anticipation of a fulfilling end that she internalizes, but resignation, nostalgia, and quiet remorse:

> If her heart stopped, no one but Loharri would be able to revive her. And maybe as time went on he would forgive her. She could last like this...Perhaps it would be better to wait until she was forgiven and things had sorted themselves out, so she could awake to a semblance of normalcy. It would nice just to sleep the chaos away, and wake up in the world where Loharri did not hate her. (260-1)

Mattie's bildungsroman, then, can be seen as a part of the revisionary pattern of coming-of-age that still values the process of finding disillusionment with current society, but it is cautious in its representation of the consequence of disillusionment. It is aware of the inadequacy of the formulaic treatment, which presupposes a gradual and successful coming-of-age through social orientation, foreshadowing the use of a past-oriented trajectory in redefining growth and development.

By associating disenchantment with despair rather than satisfaction, the trajectory defined by its temporal play establishes an anti-utopian discourse that is more sympathetic to the emotional complexity of the modern knowing child[67]. John Huntington elaborates on this, claiming that the origin of any the anti-utopia logic "is not simply an ideal or a nightmare, but an awareness of conflict, of deeply opposed

67 In an essay that looks at youth culture's morbid obsession with post-apocalyptic chaos and dystopian worlds, Philip Reeve conjectures that during the awkward years between childhood and adulthood, adolescents draw "bleak satisfaction" from reducing adult societies and order to rubbles and decay, because they know deep down the world is a place filled with injustice, and these dystopian novels deliver fragments of chaos and perversion to reflect their anti-utopia world view ("PHILIP REEVE discusses Mortal Engines, Scars, King Arthur, Science Fiction and Writing").

values that pure utopia and dystopia tend to override" (124), and this conflict engenders what could be considered the essence of steampunk's anachronistic anti-utopian dimension—scepticism, despair, and nostalgia. Mattie's narrative is thus seen as a literary embodiment of the postmodern anti-utopian logic that presents pain and despair rather than a gratifying sense of completion as the essential expression of growth.

Loharri's indifferent acceptance of the status quo is a negative example of what happens when the individual is passively constructed according to the instituted formula of coming-of-age, causing him to be transplanted from a state of childish innocence into a social role assigned by the system without having been exposed to and overcoming the fear and despair of growing up. In the morning after the city riot, Mattie is affronted by Loharri's calculating analysis and detachment in spite of the horrendously senseless violence that has just taken place:

> Mattie shook her head. It surprised her how little affected by the riots Loharri appeared--he seemed to see them as a minor inconvenience; he was not able to grasp that the order of the world--or at least the city--had changed fundamentally. To him, the mechanics were still in charge and business continued as usual, and the riots were nothing but a minor wrinkle in the fabric of life, easily shrugged off, smoothed out, and forgotten. (202-3)

The irony of a non-human entity, derided as a species completely impervious to change, showing insight into the hopelessness of humanity is an exceptional illustration of the prodigious potency and capacity of the automaton to offer critique on natural growth. Opposing the blatant reduction of young adult fiction's rhetoric of growth to merely the necessity of finding one's place in society, Craig Wallace Barrow recapitulates the importance of challenge over success in his essay, suggesting that "needless distortions of the real are children's true enemy in science fiction and science fantasy, soupy

optimism and will-less pessimism. Challenges that are met, no matter how great, only promote growth; optimism and pessimism only promote disease" (297). The automaton's bildungsroman thus typifies a fuller experience of growth and development, highlighting various aspects of maturation such as social alienation, cynicism, desperation, silent servitude, and despair, while exposing that the human individual who has supposedly received the necessary education according to the traditional pattern, remains oblivious and stunted in his growth. As a result, what so many critics have assumed to be the natural order of human development is being actively undermined by the automaton. Mattie reveals the traditional bildungsroman, a movement composed of education, political advancement, and marriage and propelled by a teleological force (Levy, "The Young Adult Science Fiction Novel as Bildungsroman" 115; Buckley 11-2), is in fact a doomed enterprise due to its formulaic nature and the arrogance of its own assumption.

Sedia's use of Loharri's nonchalance to critique human self-satisfaction and complacency also brings her into the tradition of satire established by the forefathers of science fiction. Like science fantasy satires *The Time Machine, 20,000 Leagues Under the Sea,* and *The War of the Worlds,* which run "counter to the placid assumption of that time that Evolution was a pro-human force making things better and better for mankind" (Wells qtd. in Philmus 56), *The Alchemy of Stone* similarly functions as a critique of vain hopes of progress[68], using lethargic complacency to accentuate society's weariness towards shameless scientific optimism. Modernity is not unlike the bildungsroman discourse. Culmination of modern progress and adolescent development are both derived from notion the grand narrative, but their success is also often their

68 This parallel between bildungsroman and modernity is useful because only youth can best typify the instability, dynamism and liminality of modernity and provide the most significant viewpoint for the understanding of the evaluation of history and progress (Moretti 5).

demise, which ironically produces despair and unwarranted self-satisfaction (Morley 127; Friedman 497). Therefore, just as Hegel denigrates the hubris of the grand project, or as Michel de Certeau sees the grand narrative of modernity as a myth that needs to be deconstructed because it judges growth based on its transformative possibilities rather than its reality (Morley 202), Sedia's ironic treatment of the bildungsroman can be seen as a critique of the traditions of modernity that debunks the notion of linear progress.

By invalidating the progressivist force of the bildungsroman, the narrative opens up the possibility to see nostalgia replacing hope as the signifier[69] and culmination of growth. Though hope is frequently acknowledged as the appropriate form of closure[70], Sedia offers the alternative view, which posits nostalgia rather than hope as the factor that rescues society from a wretched, hopeless state of humanity. Nostalgia is deeply introspective and past-oriented, which is opposed to the bildungsroman tradition that presupposes a linear, rigid trajectory through which the protagonist grows out of a phase and into another, failing to recognize nuances and complexity that are intrinsic to the highly volatile nature of adolescence (Galbraith 191). For example, when Mattie witnesses the aftermath of the destruction, she feels regretful and nostalgic as she stands before the ruins, signifying her transformation into someone who is older and wiser, and on a bittersweet note, more melancholic:

Along with her fear at the machine's formidable proportions and its obvious

69 Nostalgia signifies growth because the individual remembers the past experiences. However, Hunt and McHale demonstrates the disciplinary separation between memory and history, which is complicated by the matter of oral and personal history. Personal history is where the objective history enters the individual's memory and narrative. It is not uncommon to see oral history as a way of legitimizing one's own existence on a personal level, and on a national level, can be used to manipulate future perspectives of the past through selective forgetting (46-8).

70 Katherine Paterson describes hope as stubborn, necessary, and tangible, which she refuses to withhold from her readers, while Le Guin concurs that "there's a certain type of hopelessness that I just can't dump on kids. On grown-ups sometimes; but as a person with kids, who likes kids, who remembers what being a kid is like, I find there are things I can't inflict on them. There's a moral boundary, in this sense, that I'm aware of in writing a book for young adults" (qtd in Cadden 133).

> destructive capabilities, Mattie felt relief--there was a finality about the thing, sitting so calmly yet boiling and shuddering with the hidden workings of its mechanism....Mattie was ashamed to realize that she did not truly care who won--all she wanted was for this to end, so she could go home and resume the making of her unguents...And it didn't really matter who was governing the city--as long as they kept building such machines, people would bleed, and there would be work for an alchemist. Mattie proudly thought that she was a good one--after all, she was the one to free the gargoyles from their bondage, the only one to accomplish such a difficult task among those who had tried. And that had to count for something. (276)

If Samrahbh Dube is correct in assuming that the idea of modernity rests on rupture[71] (729), then nostalgia is the force that liberates the individual from linearity and temporal discontinuity.

Though there is a primitive kind of nostalgia that classical dystopian narrative often resorts to (Baccolini and Moylan 240), but there is also the kind of nostalgia that retrieves the past

> not only as a storehouse of dead or obsolete forms that might be reused within a rationalist context, but also as a 'dialogic' space of understanding and self-understanding, a space in which complicated problems had been inventively solved, in which recurrent questions had received diverse creative answers, and in which the challenges of 'contradiction' and 'complexity' had resulted in brilliant technical and aesthetic discoveries. (Calinescu 282)

Through the passage of nostalgic reflection, Mattie moves from being traumatized by the horrors of war to wanting to return to earlier, safer times. The retrospective gaze

71 Also see Friedman, Gavin, and Schönle for theories that substantiate progress as being founded on ruptures and rifts in the fabric of time.

confirms that she has definitively overcome obstacles and conflict, and she is now free to view them as things of the past as a matured heroine. Through this retrospective gaze, she confronts the magnitude of her accomplishment that enables her to move forward into the future.

Therefore, by presenting nostalgia as a force that matures the individual, Sedia shows that nostalgia, contrary to popular belief, is not regressive[72] but empowering and revisionary. The retrospective gaze is what allows us to see the present with fresh eyes, which is more than an act of compartmentalizing our segments of experiences and realities: it is an act of survival (Rich 18). Steampunk's fascination with nostalgia enables a subversive revision of the bildungsroman that allows the reader to realize that nostalgia is what frees the individual from the present and enables him or her to imagine the past as well as the future. Subsequently, nostalgia is the key feature of steampunk's bildungsroman, the narrative quality that most effectively encourages the cultivation of growth and brings the bildungsroman to a satisfying completion. It is also a reaction against the uncertainty and chaos created by postmodernism and an insurance and validation of our substantiality and existence (Hargreaves 282). It is, in other words, the quality that articulates the steampunk notion that the individual has successfully endured and resisted the political forces of conformity, uncovered and destroyed the hypocrisy of adult society, and is now looking back and seeing a distinct measure of growth and maturity.

72 There are still divisions found in the reception of revisionary nostalgia. For example, Rob Latham is largely skeptical of the nostalgic approach, interpreting nostalgia as self-deprecating and self-satirizing (348); Keith Tester reduces nostalgia to a mere utopian impulse, claiming that it is no more than a mythical response to the urban, a double longing that revolves around a desire for something absent that is essentially self-serving and cowardly (64-5).

The Presence of Hope

After Loharri instigates Iolanda's suicide, causing the explosion that sets the house and the city ablaze, Mattie realizes that there is no hope left but only a slow, quiet death. Although she is confused by Loharri's intention in leading her away from the explosion, wondering if it is out kindness or malice, she relents and admits that it matters no longer (290). She is palpably devastated by the outcome and resigned to her fate, yet in her last moment she still seeks consolation, which can be seen as a perpetuation of the lingering strength of hope: "She thought of how still she would soon be, how quiet her heart. The slow rising of feathered wings outside made up for it--or at least, it had to" (291). The presence of hope is problematic because this kind of hope is not the consolatory product of nostalgic sentiments, nor is it the hope of endurance that turns the heroine's gaze toward the future. In fact, the quiet surrender to death is not even typically associated with hope. This raises issue of if cynicism or hopelessness is indeed the bane and nemesis of young adult fiction, and if true hope is necessary after all, where is it to be found.

One interpretation is that Mattie's surrender to death qualifies the text as dystopian, which would imply that hopelessness is more crucial than both hope and nostalgia. The conflict between hope and nihilism is a common one in young adult fiction. Åse Marie Ommundsen discerns hope as the more dominant ideology, but she also admits that idyll-phobia[73], the tendency to seek out "the dark, the extreme and the tragic" (43), is gaining momentum at an alarming rate in the evolution of young adult fiction. Furthermore, it can be observed in the history and development of science fiction that dystopian[74] fear, the fear of what the future may hold if we do not take

73 This word is coined by Sonja Svensson.
74 See Levitas and Huntington for a differentiation between dystopia and anti-utopia.

action to avert catastrophe, is effective as a device used to critique and subvert hegemony (Starrs and Huntsinger 252). In other words, the hopelessness produced through Mattie's death can be seen as a way of establishing satirical critique of modern society by treating the dystopian impulse as a focal point for polyphonic confrontations, the outcome of which is ultimately a positive one since it serves as a warning of impending nightmares and preserves the dream of utopia (Tester 177). This interpretation only appears valid and convincing because adolescence is often perceived as being in a dystopian mode of oppression and suffering while dwelling in a state of perpetual hope of growing up, which causes the adolescent to "crave more power and control and feel the limits of his or her freedom intensely" (Hintz and Ostry 9-10).

Even though the jarring combination of romanticized notions of childhood and the traditional model of dystopian novels is a convention of young adult fiction, Sambell believes that this ambivalence should be discredited, because hopelessness is often incorporated into the narrative for the sake of making the story appear as realistic as possible. This paradox equates innocence with what makes the protagonist into a weak, vulnerable prey, which inevitably forces the writer to depict maturity as the death of naive hope and innocence (252). The habit of obsequiously reproducing hope thus downgrades the representation of adolescent development to a simple equation, in which if one maintains hope, one is a child; whereas if one is able to reach the end where hopelessness resides, then one is recognized as an adult.

This kind of hopelessness on the surface is as useless as blind optimism. As much as teen readers like to distance themselves from childish traits such as naivete and ignorance, they also have a desire for hope. While children are dependent on adults for helping them to deal with the cruel reality of the world (Yolen 233), I believe it is more necessary for young readers to share that responsibility in creating hope if they want

something real and substantial to combat meaningless despair. In other words, what readers need is not a blatant glorification of hope[75] or hopelessness, but a dialogue in which he or she can participate in order to create hope through textual play.

The notion of reading as play appears in "From Work to Text" where Roland Barthes theorizes that a text is inherently intertextual, having meaning only in the reader's experience because "the work is held in the hand, the text is held in language" (83). It involves the play of language, which is achieved by "a serial movement of dislocations, overlappings, variations" so that the text is without end or center (84). This means that the text is the signifier but it is not the beginning. The reader has to work backwards to unfold the layers of meanings and symbols that are interwoven in the text. Furthermore, in "The Death of the Author", Barthes expounds on the role of the reader, which is to usurp the author "because the true locus of writing is reading...the reader is the very space in which are inscribed, without any being lost, all the citations a writing consists of" (5-6). This means that if the reader is to take charge of the imagination, then the reader must first acknowledge that it is his role to "play" with the text and take the opportunity to create hope rather than submit to the authority of the writer.

The hopelessness in the the novel's epilogue is different from the kind that appears predominantly in young adult dystopian fiction, which crushes hope in order to appear realistic. It has a definite undertone of ambiguity and uncertainty that can be used to create hope through the reader's engagement in textual play. In the gargoyles' relentless search for Mattie's lost key, they confess that,

Some days we despair and think that it has melted in the fire, into a shapeless

75 In Elizabeth Speare's 1962 Newbery acceptance speech, she says: "Young people do not want to accept meaninglessness. They look urgently to the adult world for evidence that we have proved our values to be enduring. Yet perhaps never before have they looked so clearly, so despairingly, at the evidence we have offered. They demand an honest answer. Those of us who have found Love and Honor and Duty to be a sure foundation must somehow find words which have the ring of truth" (qtd. in Randle 129).

> lump fused to the cinderblocks of the foundation; sometimes we think that it was vaporized by the fire blast of the explosion, like the woman who had been holding it in her soft hand. But we chase away such thoughts. It's out there somewhere, and if anyone can find it, it is us--and we will keep looking as long as we live. (293)

Sedia does not ignore the futility of the gargoyles' search, which will no doubt prove inconclusive, nor does she extinguish the little hope in the gargoyles' perseverance and strength. Hope is thus transformed into that which resides outside the text, enabling a more nuanced and complex way of finding and interpreting hope. The responsibility of finding hope consequently lies with the reader not the writer, as if the writer is daring the reader to create hope, which is neither an ideology or a destination, but a movement. This is how the writer can avoid yielding to the formulaic didacticism of dystopian hopelessness and the tendency to patronize the reader with meaningless hope and illogical happily-ever-afters while conveying a sense of realism.

Furthermore, textual play can be seen as the cure that restores the utopian impulse in young adult fiction by displacing the inconsistencies, incoherencies and absences through textual play. Textual play prevents the totalisation of spaces and ideologies with each "turn" or "step" of the game of reading allowing for ambivalence and contradiction to examine the utopic space critically[76]. Through play within the narrative, the bildungsroman can thus compel the reader to reinvent the system and prove superior to it, so that with each turn of the play, the reader surpasses the system and its strategies (Marin xxii), because in young adult fiction, utopic discourse does not function most effectively as an icon, but as play.

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76 Critical consciousness created in textual play does not have to be the result of either "destructive fanaticism" or a nihilistic sense of the collapse of order. Sometimes, critical consciousness is simply a progression from naivete to critical examination (Freire 35).

We need to stop thinking of the reward of growing up as liberation, but as the experience of learning to be accountable for one's action[77], because "in the end, there are no limits to suffering when one is a young adult, patterns in utopian fiction show us that there are uses for this suffering. Out of it, one may, slowly, with hope and action, emerge into a less painful adulthood" (Totaro 135-6). Hope is necessary for growth, but it can never be vain. In his attempt to realize hope as a human right, a living essential, and the power of the oppressed, Paulo Freire writes,

> Hope is rooted in men's incompletion, from which they move out in constant search—a search which can be carried out only in communion with others. Hopelessness is a form of silence, of denying the world and fleeing from it. The dehumanization resulting from an unjust order is not a cause for despair but for hope, leading to the incessant pursuit of the humanity denied by injustice. Hope, however, does not consist in crossing ones arms and waiting. As long as I fight, I am moved by hope; and if I fight with hope, then I can wait. As the encounter of women and men seeking to be more fully human, dialogue cannot be carried on in a climate of hopelessness. (91-2)

On the other hand, Ernst Bloch's *The Principle of Hope* postulates that human experience is marked by lack and longing, and this lack can only be articulated through imagining its fulfilment, so that hope is

> the most important expectant emotion, the most authentic emotion of longing and thus of self...For the negative expectant emotions of anxiety and fear are still completely suffering, oppressed, unfree, no matter how strongly they reject...Hope, this expectant counter-emotion against anxiety and fear, *is therefore*

77 In Hegel's *The Phenomenology of Mind,* he writes, "It is solely by risking life that freedom is obtained;...the individual who has not staked his or her life may, no doubt, be recognized as a Person; but he or she has not attained the truth of this recognition as an independent self-consciousness" (qtd in Freire 36).

> *the most human of all mental feelings and only accessible to men, and it also refers to the furthest and brightest horizon*. (75, emphasis in the original)

Therefore, what the clockwork bildungsroman has accomplished through textual play is the expansion and evolution of the rhetoric of hope by including the heroine acceptance of failure and its consequences. This is a crucial step in constructing utopian moments in postmodern society, just as Baccolini believes that instead of optimism or cynicism, it is "in the acceptance of responsibility and accountability, often worked through memory and the recovery of the past, that we bring the past into a living relation with the present and may thus begin to lay the foundations for Utopian change" (520). For too long hope has been treated as the writer's gift to the child reader. Steampunk seeks to rebel against this practice. As the heroine progresses from curiosity and despair toward nostalgia and resignation, she proves that for young adult science fiction to be filled with hope, writers do not need to slavishly inscribe meaningless hope or hopelessness in their closure, because even without it, the reader will be able to find hope. Therefore, rather than immersing the reader in an euphoria of hope or completing depriving him or her of it, the writer should seek to bring the reader into a confrontation with this new rhetoric of hope that inculcates accountability as opposed to nihilistic cynicism, inconsequential despair, or vain optimism.

Conclusion

Whether it is in steampunk's temporality or technology, hybridity is evidently represented as a defining feature of the genre, which reinvigorates the discussion and understanding of growth in young adult science fiction. Chapter one reveals that the relationship between technology and the teen protagonist is a key aspect of young adult science fiction. It also argues that fundamentally the genre is undermined by its own didactic, liberal humanist, and technophobic tendencies. In comparison, steampunk is a a new, amphibious genre that is defined by its playfulness and self-reflexivity, challenging the normative conventions of young adult science fiction. There are two aspects to steampunk's hybridity: one is its temporality, and the other is its technology. Nostalgia as a form of temporality revises the bildungsroman formula of young adult science fiction; while technological hybridity, constructed using a mix of mechanical and natural aesthetics, neutralizes the virulent effects of technophobia. *Leviathan* by Scott Westerfeld and *The Alchemy of Stone* by Ekaterina Sedia, chosen for their thematic relevance, narrative form, and emphasis on the hero or heroine's identity formation, use steampunk tropes as their focalizing agent in their construction of hybridity. The eponymous dirigible of *Leviathan*, a bio-engineered whale with the mechanicality of traditional clockwork, recreates the technological aspect of steampunk's hybridity, while Sedia's automaton, with its memorable performance of gendered powerlessness and nostalgia, experiments with the notion of linear development and invites a deconstruction of temporality.

Chapter two opens with a quick sketch of alternate history as a genre that resists the deterministic, linear mode of progress using its retrospective utopian creativity. With its alternative, historical gaze, steampunk encourages the teen reader to participate

in issues of climate change and sustainable energy, illustrating that inspiring the reader with visions of ecotopia is more effective than educating the reader using an institution of fear. There are several necessary steps that *Leviathan* takes to overthrow the conventions of technophobia in young adult science fiction. Firstly, it reveals that though fear is commonly perceived as a narrative device employed for didactic purposes, in reality it is the opposite. Fear is what inspires the writers to establish and enforce the institutionalization of adolescence, circumscribing it using principles of social normativity. Secondly, *Leviathan* explores the barrier between the natural and the artificial rather than the human and nonhuman divide because it is more expressive of the adult's fear of usurpation. As a result of deconstructing the Frankenstein myth, *Leviathan* reveals that the apprehension of the unnatural consistently glorifies the innocent child as a site of desire and simultaneously produces the demonization of adolescents. It is also shown that adults impose rules and regulations because they fear seeing their worst traits reflected in the rebellious teens, signaling a need for a new understanding of adolescence.

Ecotopia in the form of the dirigible fills that void. It demonstrates how the biocentric imagination can be beneficial to representation of technology and anticipation of the future in young adult science fiction. To dream the ecotopian dream, *Leviathan* creates a system that is neither natural nor technological but both. It realizes eco-aesthetics that are crucial to establishing a biocentric, relational model of adolescent growth as opposed to the liberal humanist schemata that perpetuates anthropocentric normativity. One of the eco-aesthetics typified by the *Leviathan* is that eco-living is kinetic. This produces the ecocentric awareness that growth is defined by movement. It is organic, continuous, spontaneous, and unpredictable, different in every way to the teleological model of social integration. Other eco-aesthetics are founded on

the principle of deep ecology that defines eco-living as highly relational. As a result growth is portrayed as a process that is characterized by relativity and fluidity and enacted by the individual's response to his or her surrounding. This way the teen protagonist's position in society is strengthened, allowing the teen protagonist to act and react more intuitively and to develop his or her own talent as an independent agent. Consequently, the ecocentric relational model of adolescence encourages adults to foster and adapt to the changes that occur to and within the adolescent's identity.

The mechanical mobility of *Leviathan* also has its usefulness because it reaffirms the importance and efficacy of being rendered a valued member of a community. It substantiates the adolescent's experience of collectivity and solidarity, which is achieved through the adolescent's reflexive mobility as opposed to the adult's arbitrary socialization. This produces growth that is mechanical yet organic and a representation of technology that reveals the machine as fallible, restoring it to its secondary place in human society, because all technologies must fail at some point to necessitate the critical awareness of danger. The teen reader can thus be led to realize that it is not technology but they who are in control of the future. Therefore, without sacrificing the progress of technology or the preservation of nature, steampunk produces the ecocritical discourse that inspires the reader to dream and contemplate on how technology, nature, and mankind can co-exist. As a techno-tale, steampunk serves to inspire rather than educate. It is an expression of self-reflexive hybridity that is pertinent to the ways that youth can anticipate rather than fear the future of our world.

The automaton presented in chapter three is a paradox of power and powerlessness. From Renaissance to the present day, the automaton has been portrayed as a creative symbol that invites and yet resists identification through its imitation of human movement. It is this unique, ambivalent quality of the automaton that enables

steampunk to produce powerlessness in various dimensions, such as its physical construction, mechanical determinism, performativity, and reproduction through imitation. Because of the automaton's historicity and evocative imagination in the realm of power, its condition of powerlessness becomes all the more poignant and significant. Through its symbolic ambivalence and association with powerlessness, the automaton necessitates and invokes the female bildungsroman narrative of growth, cultivation, and development. Yet due to certain inadequacies of the traditional model, such as its tendency to prioritize inner life over social life, its categorization of male and female attributes, and its arbitrary predilection for imposing a universal, linear trajectory that perpetuates a formulaic development of identity and subjectivity, the automaton is compelled to reconstruct the female bildungsroman narrative.

Using the automaton's state of powerlessness as the origin, Sedia establishes an alternative model of female bildungsroman that inverts and transforms non-identity into a distinctive feature and expression of power. The automaton's growth also shows progress towards finding emotional fulfilment in one's career and profession, dissolving the gender distinction between the domestic and the public. Furthermore, the automaton's bildungsroman presents growth as an organic movement characterized by fluidarity and versatility in its negotiation between self-understanding and political advancement. Finally, rather than portraying female development in spite of one's social alienation, the automaton is depicted as being strengthened by its ecotopic marginality. Overall the automaton's bildungsroman can be read as a challenge to the conventional assumption that the heroine must develop in a linear fashion from a state of powerlessness into a figure of power, since the automaton reveals that the appearance of powerlessness, non-identity, and alienation can be just as effective and potent as a weapon against the oppressor.

Removing itself from the traditional bildungsroman that replaces innocence with disillusionment, and using the heroine's knowledge of the world to ascertain her measure of growth, the automaton uses nostalgia that characterizes steampunk's retrofuturism to mark its maturation. This also deals with the rise of the knowing child of the twenty-first century, the sociocultural product of recognizing the value and complexity of postmodern childhood. Situating itself within this specific cultural context, the automaton formulates an alternative trajectory that progresses from knowing towards nostalgia. The default position is a state of critical awareness, in which the heroine is informed of the power shifts and the hypocrisy of the social institution. However, through her self-interrogation and retrospective reflection, she comes to recognize that the sociopolitical order possesses power that could be advantageous and necessary for her growth.

Eventually through rediscovering the hypocrisy of adult society, the heroine experiences despair, which instrumental to the heroine's understanding of nostalgia. It is through nostalgia that the heroine comes to perceive herself as older and wiser, having grown to the extent where she can reflect on her past with a degree of maturity. As much as nostalgia functions as the distinct marker of maturation, it also equates the automaton's female bildungsroman with the critique of modernity. Nostalgia attacks the futility of progress and the complacency of technologically advanced society, presenting itself as the measure of true maturity that consummates the clockwork bildungsroman.

While most young adult fiction instills either hope or hopelessness to provide a proper closure, completing the formalist didactic message about growing up, the automaton's bildungsroman refuses to portray meaningless hope nor does it succumb to dystopian hopelessness. *The Alchemy of Stone* is an example of how a more complex

and playful approach to the rhetoric of hope can be established through the dialectic relationship between the reader and the text, instantiating hope as a movement that inculcates self-reflexive, critical awareness. Nevertheless, hopelessness still has its value in young adult science fiction, for without it the bildungsroman would be defective in its representation of the adolescent experience. This suggests that the true enemy of science fiction is actually complacency and cynicism, and if steampunk is indeed important and relevant to youth culture today, it is because it presents itself as a cure to both. Steampunk's re-imagining of technology and temporality assails the modern reader's sense of linear time and fear of posthuman technology. It awakens the reader's critical awareness of retrofuturism, mediating the ecotopian potential of alternative technologies and the necessity of nostalgia in the present age.

Another important theme that has not been discussed in this thesis is steampunk's treatment of racial history and diversity. Due to steampunk's tendency to set its novels in the golden age of colonial expansion, it has attracted polemic criticism that denigrates steampunk's trivialization of the darker side of the Victorian age:

> It's the world that bequeathed us the adjective "Dickensian", that gave us a fully worked example of the evils of a libertarian minarchist state, and that provoked Marx to write his great consolatory fantasy epic, The Communist Manifesto. It's the world that gave birth to the horrors of the Modern, and to the mass movements that built pyramids of skulls to mark the triumph of the will. It was a vile, oppressive, poverty-stricken and debased world *and we should shed no tears for its passing* (or the passing of that which came next). (Stross)

However, I would like to point out that steampunk is not meaninglessly and obsequiously reproducing the time period in order to pay tribute to an illusion of "the glorious empire". Steampunk is by nature nostalgic, but it is also critical, playful, and

self-reflexive. It sets up the historical context for the purpose of experimenting with alternative pasts from a more advantageous position. It establishes retrofuturism that denaturalizes some of the dominant features of our way of life using self-reflexive historical play. The mix of historical actuality, formalist self-reflexivity, and nostalgia results in self-interrogation that is necessary because we can never resurrect the past, and all that we have inherited is only the image of it, which can be used for steampunk's re-invention and critique of scientific and historical progress.

However, as steampunk becomes more assimilated into mainstream culture, its rise can also become its downfall, victimized by its own popularity and determination to be unique and playfully creative. Steampunk distinguishes itself from other forms and sub-genres of science fiction using its "anything goes" attitude, but when it attempts to "steampunk-ize" anything and everything by layering a veneer of Victorian sensibilities over its technologies, steampunk risks being reduced to nothing more than aesthetics. Charlie Stross vehemently scorns steampunk's science for being questionable, insubstantial, and unscientific,

> frequently flimsier than even the worst junk that space opera borrows from the props department, because, as it happens, the taproots of steampunk lie prior to the vast expansion in the scientific enterprise that has come to dominate our era...as long as steampunk is nothing more than what happens when goths discover brown. Viewed as a fashion trend for corsets and top hats, steampunk is no more harmful than a fad for Che Guevara tee shirts, or burkas, or swastikas; just another fashion trend riffing thoughtlessly off stuff that went away for a reason (at least in the developed world). (Stross "The Hard Edge of Empire")

Jess Nevins likewise criticizes steampunk's take on technology as indifferent, bland, and not really "punk" at all:

> But most of second generation steampunk is not true steampunk--there is little to nothing "punk" about it. The politics of the punk position have largely disappeared from second generation steampunk, and most of it is more accurately described as "steam sci-fi" or, following John Clute, "gaslight romance." (*Steampunk 10*)

However, I would like to think that in spite of these charges, steampunk still contains the creative potential to inspire the reader to think critically about the relationship between technology and its user, the trajectory and movement of growth and progress, and the fear of half-machine half-nature chimeras. It may not provide a solution to the questions it raises, nor is it as revolutionary as some critics would like, but it does represent an alternative to dominant formulas and conventions of young adult science fiction, and so it seems that steampunk is thus all the more assured of its place as a modern myth, its power to reinvigorate a world at lost with itself, and its ability to mirror the needs of contemporary life, inspiring us to dream about what the future holds for this generation of young readers.

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