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Temporary Transgenderism in Charles Stross's

Glasshouse: Patriarchal Suburbia and the Limits of the

Post-human

Treball de Fi de Màster/ MA dissertation

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"If my nightmare is a culture inhabited by posthumans who regard their bodies as fashion accessories rather than the ground of being, my dream is a version of the posthuman that embraces the possibilities of information technologies without being seduced by fantasies of unlimited power and disembodied immortality, that recognizes and celebrated finitude as a condition of the human being, and that understands human life is embedded in a material world of great complexity, one on which we depend for our continued survival"

N. Katherine Hayles, *How We Became Posthuman*

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Abstract

As early as 1893, H.G Wells in his well-known pioneering article "The Man of the Year Million", anticipated how the evolution of the human species would be affected / accelerated by technological development. He thus expressed what would prove to be one of the major concerns of twentieth-century science fiction as a literary genre: the rise of a post-human identity forged by the effects of evolutionary, technological and artificial progress. In other words, with characteristic prescience, Wells can be said to have been one of the authors that have paved the way to what has come known as Post-Humanism, that is to say, the variety of theories that formulate such potential development of humankind. This dissertation seeks to explore the implications that this future scenario has for the construction of gender as represented in contemporary dystopian discourse.

My analysis will focus on Charles Stross's novel *Glasshouse* (2006) in order to explore and analyse what the representation of the gendered body in science fiction on the post-human contributes to our understanding of gender identity. Articulated as a binary opposition between the patriarchal suburban ethos of the 1990's – 2010's America and a post-human future, *Glasshouse* narrates a double transgender experience whereby the two protagonists, Robin and Kay, participate in a sociological experiment that allows them to explore their own limitations as post-human beings. Despite being set in a post-human society, Stross's narrative proves that the only way for post-humans to reassert their own identity is in relation to Homo Sapiens paradigms and that the post-human identity per se does not exist and it is even full of limitations regarding gender.

Keywords: Charles Stross, *Glasshouse*, science fiction, temporary transgenderism, post-humanism, gender essentialism, American suburbia, sociological experiment, limited identity

0. Introduction

0.1. Charles Stross and *Glasshouse*

Charles Stross is a British fantasy and science fiction writer born in Leeds in 1964. Although he graduated with a bachelor's degree in Pharmacy in 1986 and he completed a postgraduate degree in computer science, Stross showed an early interest in writing. In 2000, he became a full-time writer, a technical one at first and later an acclaimed science fiction novelist thanks to the publication of his first novel *Singularity Sky* (2003), which was nominated for the Hugo Award.[1] In addition, in 2006, Stross won the Locus Award[2] for the best science fiction novel with *Accelerando* (2005);[3] his novel *Glasshouse* (2006), the object of this dissertation, won the 2007 Prometheus Award.[4]

With *Glasshouse*, Stross consolidated himself as a writer concerned with the meaning of identity as individuality, gender, self-image and compliance in a post-human environment. Naturally, Stross is not the first author who deals with post-human questions of identity and gender. In fact, Stross is following a well-ploughed literary furrow by authors such as Mary Shelley with *Frankenstein; or The Modern Prometheus* (1818), Frank Herbert with *Dune* (1965), Ursula K. Le Guin with *The Left Hand of Darkness* (1969) and Richard Morgan with *Altered Carbon* (2002), to name just a few. All these novels and authors pre-date Stross's *Glasshouse* but it is important to notice

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[1] A set of literary awards given annually for the best science fiction or fantasy works. The awards are named after Hugo Gernsback, the founder of the science fiction magazine *Amazing Stories*.

[2] A set of literary awards given annually by the American fantasy and science fiction magazine *Locus*.
~~A set of literary awards given annually by the American fantasy and science fiction magazine Locus.~~
~~This novel combines nine short stories telling the daily experiences of three generations of the~~

[3] This novel combines nine short stories telling the daily experiences of three generations of the same family before, during and after the era of technological singularity.

[4] An annual award for libertarian science-fiction novels given by the Libertarian futurist society, which also publishes the journal *Prometheus*.

how, although this novel revolves around a highly topical theme, Stross has become one of the first authors to deal with post-human issues being highly aware of the theoretical and official post-humanist and trans-humanist discourse.

When Charles Stross published *Glasshouse* in 2006, the general consensus was that it was one of Stross's most challenging books. Nevertheless, it is important to highlight from the very beginning that the vast majority of the attention that this novel has received since its publication has not come from academia but from the target readers. Consequently, it is extremely important to realize that, despite being was published more a decade ago; *Glasshouse* is an unexplored novel when it comes to academic literary interpretation. Nonetheless, on the opposite end of the spectrum, Stross's *Accelerando* (2005) has received the academia's attention and the vast majority of the studies (Geraci, 2011; Zawidzki, 2012; Wedemeyer, 2014; amongst other) are focused on the understanding of post-humanism, technology and cognition as interrelated realities.

Glasshouse tells a story set in the twenty-seventh century. Humanity has spread throughout the galaxy using wormhole technology, which allows direct and instant connection between two points separated by light years and has created many societies and legacy polities – a set of counterfeit territories, colonial planetary states, planetoids and meteors linked by means of T-gates[5] creating the Invisible Republic. The story begins on board a spacecraft travelling through the interstellar space that surrounds the Invisible Republic, while the humans try to win the war against a memory-deleting cyber-worm, Curious Yellow. In this context, the main male character, Robin,

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[5] These transporter gates are used to connect the different spatial wormholes around the polities of the Republic of Is and they also enable the access to private spaces used for storage. These T-gates, nonetheless, are controlled by means of firewalls and the authorities strictly control the connections made.

apparently a retired professional assassin and a member of the Linebarger Cats - "an informal group of refugees, dissidents, and generally uncooperative alienists who resent any attempt to dictate their conscious phase space" (Stross, 2006: 197) - is recovering from a memory excision process in a rehabilitation centre. Despite the fact that he does not remember anything about his past, he suspects that he has gone through many traumatic experiences. During his rehabilitation, Robin meets Kay, a former member of an ice ghoul society – the closest to humanity, as it is still developing technology and has not yet reached the period of Acceleration - and she becomes his girlfriend.

In order to evade their potential enemies, Robin and Kay volunteer to participate in a radical sociological experiment that completely erases their past memories and that, oddly, places them in a replica of Earth's "dark ages": the late twentieth and early twenty-first centuries of American middle-class suburban life, a time when gender roles are strictly patriarchal. This new pseudo-controlled society, which is governed by a group of scientists, is founded as the Glasshouse Polity. Within the experiment, Robin is transformed into a woman: Reeve, a traditional housewife and librarian married to Sam, a depressed man with whom, despite her initial resentment, she eventually falls in love.

Trapped by the glasshouse system as the experiment unfolds, she begins to suspect that all is not what it seems and that the controllers and creators of the experiment are engaged in a terrible conspiracy. Indeed, when fragments from her old memories return and she realizes that the other participants are all either spies or soldiers, Reeve decides to start a rebellion that not only leads to a resistance movement against the experiment but that also encourages her to start a quest to find her own identity. Sam dies fighting but, just before his death, a pregnant Reeve realizes that Sam is actually Kay. After the birth of her daughter Andromeda and after she has

successfully dismantled the experiment, Reeve voluntarily decides to become Robin again and Kay, reborn as a female clone from her last male body, marries him.

0.2. The Glasshouse Polity and Michel Foucault's Panopticon

The word 'glasshouse' has multiple meanings. According to the *Cambridge Dictionary Online*, 'glasshouse' is defined as "a large building with glass sides and a roof for growing plants in". In addition, the *Collins English Dictionary Online* adds two more entries and it also defines 'glasshouse' as a synonym of 'glassworks', which is "a factory for the moulding of glass" and as an obsolete, informal and mainly British word used to define a "military detention centre". Accordingly, in the context of Stross's novel this concept refers to a military, high-security prison for war criminals that has the aim of controlling these subjects with the pretext of carrying out a sociological experiment. Indeed, the Glasshouse Polity is a superstructured cell, a prison in which all the participants are controlled in order to guarantee a high degree of surveillance.

As Murray Rowlands explains in his book *Aldershot in The Great War: The Home of the British Army* (2015), the concept of the 'glasshouse' as a military prison originated in the United Kingdom in 1856, after the establishment of the military prison at Aldershot (2015: 22) – which had a glazed roof. Moreover, Paul H. Vickers notes in *Aldershot's Military Heritage* (2017) that "the desire for a 'camp of exercise' grew out of attempts in the 1850s to modernize the British Army" (2017: 2) and that "Aldershot Camp was born during a time of war, for even as it was being built Britain was fighting Russia in the Crimea" (2017: 23). The prison was destroyed in 1946 by a fire in a riot against the conditions prisoners suffered in the building after the ending of the Second World War. As Simon Webb argues in *British Concentration Camps: A brief History*

Ana Sáez Garrido, *Temporary Transgenderism in Charles Stross's* Glasshouse *from 1900-1975* (2016), "The British government were caught in a very hard situation after the end of the Second World War" (2016: 46). These prisons were known for their brutality and still nowadays the British Army has a remaining "glasshouse" corrective prison: The Military Corrective Training Centre at Colchester.

The military prison of Aldershot may have influenced Stross's mind when he was creating the "Dark Ages" universe in which Robin and Kay eventually live. In his personal blog *Charlie's Diary*, Stross explains that "the Glasshouse was the prototypical military prison in Aldershot (…) an ominous resonance" (2013) and, as it has been previously mentioned, all the participants in the sociological experiment that takes place in the novel are former war criminals. Moreover, Stross also grants in his blog that the Stanford Prison experiment[6] conducted by Stanley Milgram and Philip Zimbardo at the University of Stanford became a source of inspiration for him (2013: blog), as it appeared to be an attempt to investigate and analyse the psychological effects produced by the relationship of power established between the prisoners and the prison officers. As Stross vindicates, "*the environment itself* is inherently corrupting and most people will obey what they perceive to be lawful instructions emanating from a legitimate source of authority even if those instructions are themselves illegal or inappropriate" (2013: blog, original italics).

But, what is the aim of conducting this experiment in *Glasshouse*? Doctor Fiore, one of the scientists in charge of running the experiment, explains to its participants

> Our ancestors allowed their storage and processing architectures to proliferate uncontrollably and they tended to throw away old technologies instead of virtualizing them (…) so that when new architectures replaced old, the data became inaccessible. This particularly affected our records of personal and household activities during the latter half of the dark age" (46-47).

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[6] A simulation two-week study on the psychology of imprisonment conducted in 1971 at Stanford University using college students with the attempt to investigate the psychological effects of perceived power, focusing on the struggle between prisoners and prison officers.

Therefore, according to Fiore, the Glasshouse Polity acts as a simulation that aims to replenish the missing information that this new post-human society does not have in relation to their Homo Sapiens ancestors. Indeed, Fiore clearly states that the simulation will be severely and tightly controlled as if it was a prison because "this is a sociological and psychological experiment immersion experiment, which means we'll be watching how you interact with each other" (47). Nevertheless, Stross's intention has nothing to do with a simple data collection process. Instead, as he argues in his personal blog,

> And then another weird idea dogpiles the first: why not take the Stanford Prison Study protocol and apply it to gender roles among a bunch of posthumans who'd be at home in an Eight Worlds type environment – one in which physiology and gender and biology are mutable? What happens if you pin them down at random, frozen in one form or another, and give them incentives to conform to arbitrary roles, as a way of interrogating the assumptions and stupidities we take for granted? (2013: blog)

Accordingly, Stross's experiment becomes a kind of physical and metaphorical cell in which the post-human individual is subjected to a thorough control. However, it is important to note how despite being a British concept in its origin, Stross places the glasshouse prison in an American setting, which adds an interesting geographical, social and cultural twist in Stross's narrative. In addition, as Dave Itzkoff explains in "Fast Forward" (2006), a review on Stross's novel for *The New York Times*, "the Kafkaesque scenario is a clever pretext for Stross to send up institutions and customs of our present day" (2006: review).

Nonetheless, Aldershot was not the only influence that inspired Stross to create the Glasshouse Polity. In his book *Discipline and Punishment: The Birth of the Prison* (1975), the French philosopher Michel Foucault describes punishment as the continuing trajectory of subjection as he builds his ideas on Panopticism, a social theory named after Jeremy Bentham's panopticon. Although Bentham originally proposed the

panopticon as a humane alternative to execution or transportation to the colonies, Foucault saw it as an institutional building used as a system of control: a circular prison where the guard is placed in the middle of the cell block in order to control and to observe every movement that the prisoners make. Indeed, a kind of invisible discipline seems to govern the prison and prisoners self-regulate due to the fear that someone may be observing all their moves. In other words, the panopticon is based on the basic principles of surveillance: monitoring behaviour and activities with the aim to influence and manage people according to certain needs.

Following Bentham's Panopticism, thus, Foucault establishes that "the practice of placing individuals under 'observation' is a natural extension of a justice imbued with disciplinary methods and examination procedures" (1975: 326). Accordingly, for Foucault the emergence of prisons was the result of the development of discipline, a discipline that was even concerned with aspects related to people's bodies and that he defines as "all those systems of micro-power that are essentially non-egalitarian and asymmetrical" (1975: 222). In other words, for Foucault discipline is concerned not only with punishment but also with the creation of new forms of individuality derived from the economic, political and military organizations from which the individual subject is dependent.

In addition, Foucault insists that the individuality which discipline builds by means of controlling bodies has four main particularities: it should be cellular (the spatial distribution of the bodies), organic (the activities that the individuals perform should appear as natural as possible for their bodies), genetic (controlling the natural evolution of bodies) and combinatory (combining different bodies into a single massive force). Foucault's ideas describe a social model in which humans not only conform to

the social norms but also internalize the responsibility of fulfilling these social ideals imposed by an almighty state.

Stross pictures this ideal in *Glasshouse*, emphasizing the role of the dark ages' simulation as a means of controlling its participants' future. The scientists in charge of carrying out the experiment – Colonel-Professor "Bishop" Yourdon, Major-Doctor Fiore and Doctor Hanta - have experience working with dictatorial regimes and the new model of community that they are establishing with this new Glasshouse Polity can be used as a primitive model for the appearance of new oppressive and tyrannical social constructs, although in the novel it is not very clear what their real and inner objective really is.

In conclusion, "glasshouse" in Stross's novel makes reference to a military and high-security prison for war criminals and whose historical inspirational sources need to be found in the British Military Prison of Aldershot, in the Stanford Prison study and in Foucault's Panopticism because as Stross ensures that his intention is to "take the Stanford Prison Study protocol and apply it to gender roles among a bunch of posthumans [...] as a way of interrogating the assumptions and stupidities we take for granted" (blog: 2013).

0.3. Post-Humanism and the Singularity

Since *Glasshouse* is set in a post-human 27th century we need to address the question of how to define Post-humanism. As early as 1893, H.G Wells in his pioneering article "The Man of the Year Million" stated that "As Ruskin has said somewhere, a propos of Darwin, it is not what man has been, but what he will be, that should interest us" (1893: 1). Wells was one of the first writers to anticipate how the

evolution of the human species would be accelerated by technological development. Indeed, he competently described his 'Coming Man' as if he had evolved into something unrecognizable: as man with "a larger brain and a slighter body" (1893:1) whose descendants will become stunted and whose survival would only be guaranteed as long as they implement technological devices into their bodies.

Wells, thus, expressed what would prove to be one the major concerns of 20th and 21st century science fiction as a literary and audio-visual genre: the rise of a post-human identity forged by the effects of evolutionary, technological and artificial progress. As Roger Luckhurst argues in his book *Science Fiction: A Literary History* (2005), "in an era of accelerated, technologically driven changed, SF has remained a vital resource of recording our states of being" (2005: 222). Accordingly, with characteristic prescience, Wells can be said to have paved the way to what has come to be known as Post-Humanism, that is to say, the variety of theories that formulate this potential development of humankind. But, what has happened in the 100-year lapse of time between Wells and the official foundation of Post-Humanism as a scientific and philosophical school of thought? In his doctoral dissertation *La Transcendencia del Homo Sapiens: El Icono del Posthumano en la Ciencia Ficción* (2016), Jaume Llorens argues that,

> Los humanoides de Wells tienen su origen en la fascinación del autor por la teoría de la evolución (…) En la actualidad, uno de los debates más importantes (…) es precisamente cómo el progreso que estamos experimentando puede acelerar de forma drástica el lento proceso evolutivo. Reflejando esta atmósfera, la ciencia ficción actual trata la tecnología como un factor más importante que la selección natural en el momento de imaginar a nuestros descendientes evolutivos (2016: 2)

Following Llorens' argumentation, it seems that one of the major concerns of current science fiction writing is intrinsically interrelated with the representation of the post-human and, as he adds, "la ciencia ficción comparte con el posthumanismo tanto la

sustitución del paradigma de la selección natural por el de la evolución artificial, como una inquietud por la identidad inestable y cambiante del ser humano" (2016: 5).

In its most extreme form – Transhumanism – Post-Humanism is an international and scientific movement that seeks to technologically transform both the human intellect and physiology and to study the quiescent favours and detriments of extending and transgressing humans' natural conditions. In 1998, Nick Bostrom and David Pearce founded the World Transhumanist Association, whose *Transhumanist Declaration* begins with the following statement:

> Humanity will be radically changed by technology in the future. We foresee the feasibility of redesigning the human condition, including such parameters as the inevitability of aging, limitations on human and artificial intellects, unchosen psychology, suffering, and our confinement to the planet Earth. [7]

As a consequence, the World Transhumanist Association was founded with the aim to support the emergence of new technologies but most importantly, with the aim to "advocate the moral right for those who so wish to use technology to extend their mental and physical […] capacities and to improve control over their lives" (*The Transhumanist Declaration*, 1998).

Nevertheless, Post-Humanism and the post-human predicament are debatable subjects and scholars such as N. Katherine Hayles in *How We Became Posthuman* (1999) and Neil Badmington in his article "Theorizing Posthumanism" (2003) have criticized the apocalyptic tone of the most extreme Transhumanist discourse regarding humanity. As Badmington points out,

> Posthumanism, I want to suggest, needs theory, needs theorizing, needs above all to reconsider the untimely celebration of the absolute end of "Man". What Jacques Derrida calls "the apocalyptic tone" should be toned down a little, for, as Nietzsche once pointed out, it is remarkably difficult to cut off the human(ist) head through which we (continue to) "behold all things" (2003: 10).

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[7] The whole *Transhumanist Declaration* can be consulted at www.transhumanism.org

Badmington's argumentation can be linked to Hayles' analysis of both the human and post-human identities as singular producers of models of subjectivity, or what Hayles likes calling "the roboticist's dream" (1999: 1). For Hayles, both the "human" - aligned with the Enlightenment and with the ideals of liberal humanism - and the "posthuman"- distanced from nature and privileging the artificial over the natural in a way that it becomes a human deconstruction- emerge as social constructions and historical entities, appearing the latter only after "computation rather than possessive individualism is taken as the ground of being" (1999: 34) because "by the 1960s, the consensus within cybernetics had shifted dramatically toward reflexivity" (1999: 35). Indeed, "the emergence of the posthuman as an informational-material entity is paralleled and reinforced by a corresponding reinterpretation of the deep structures of the physical world" (1999: 11) and both humans and posthumans are historical products because they arise from the application of reflexivity patterns, which have the aim of "showing that an attribute previously considered to have emerged from a set of pre-existing conditions is in fact used to generate the conditions" (1999: 9).

Besides, the technological singularity hypothesizes that the invention of artificial intelligence will lead to the obsolescence of the human brain and the human body and, consequently, post-humanism will emerge as the only tangible solution to deal with this problem, as it is the fusion of humanity and artificial intelligence. In *The Singularity Is Near* (2008), the inventor and futurist Raymond Kurzweil predicts that during the singularity process our life "will be irreversibly transformed" (2008: 7) and that humans will surpass the biological limits of both our bodies and brains (2008: 9), as we are ourselves surpassed by the AI we have created. In fact, according to Hayles, "the posthuman implies not only a coupling with intelligence machines but a coupling so intense and multifaceted that is no longer possible to distinguish meaningfully between

the biological organism and the informational circuits in which the organism is enmeshed" (1999: 35).

Hayles' analysis on post-human singularity goes beyond the mere linguistic and symbolic definition of the concept. Instead, it becomes an indirect and acidic critique against radical transhumanists who believe that singularity consists of "repressing the old Christian and Cartesian mind-body dualism problem. In fact, along the same lines, Braidotti (2013) also disputes Transhumanism and she sees "the deconstruction of the liberal humanist subject as an opportunity to put back into the picture the flesh that continues to be erased in contemporary discussions about cybernetic subjects" (2013: 5).

When it comes to science fiction, the depiction of the posthuman individual has become a recurrent motif in recent – and not so recent- science fiction narratives. In *Bodies of Tomorrow: Technology, Subjectivity, Science Fiction* (2007), Sherryl Vint explains that through the usage of the symbolic image of the posthuman individual as the main protagonist of science fiction texts, this literary genre becomes "a privileged site that investigates some of the possibilities of changed embodiment for changing humanity" (Vint, 2007: 7) and that with science fiction, authors can show their readership "that we need an embodied of posthumanism if we are to return ethical responsibility and collectivity to our concept of self" (Vint, 2007: 16). In this sense, science fiction as a literary and as a transmedia genre is proved to be a useful tool through which the ethical and the most human side of the posthumanist and transhumanist doctrines can be tested and scrutinised and Stross's *Glasshouse* proves itself not to be an isolated case in this regard.

In light of this situation, my dissertation seeks to analyse what the representation of the gendered body in dystopian science fiction on the post-human contributes to our

understanding of gender identity. As I have noted, Stross's *Glasshouse* is set in a post-human 27th century and it narrates a peculiar kind of gender experimentation through temporary transgenderism. Nevertheless, despite being set in a futuristic environment, Stross encapsulates the vast majority of his narration inside the Glasshouse Polity, which recreates the reality of the late 20th and early 21st centuries of the American middle-class suburban life where gender roles are strictly patriarchal. In her essay "Femininity Undone: Pending Between *Anagnorisis* and *Peripeteia*" (2012), Elisabeta Zelinka explains how Stross's science fiction novel *Glasshouse* can be considered and labelled as a science fiction text that deals with the culture of aggressiveness and psychological exhibitionism, as it "mirrors the dehumanization of the Occidental individual and the aggressive overtaking of his soul by hyper-technologized, over-competitive individualism" (2012: 30). Moreover, in Stross's novel, the postmodern women are not provided with "viable advice or existential role models that might function for her and for her family" (2012: 30). Indeed, as Judith Roof argues in her article "Thinking Post-Identity" (2003), "as a site of individual organization and interpellation, identities operate as cultural and physical support for the oppressive othering necessary to nourish dialectical, them/us systems subtending capitalism, patriarchy, colonialism, and racial privilege (2003: 1). For this reason, once more Stross's *Glasshouse* cannot be considered as an isolated case regarding its treatment on gender. Nonetheless, what makes Glasshouse special is that Charles Stross is experimenting with gender through temporary transgenderism so as to challenge heterosexuality and patriarchal dominant positions in a post-gender post-human society.

Consequently, the main aim of this thesis is to examine how, by offering a contraposition between a patriarchal suburban society and a post-human futuristic environment, *Glasshouse* presents a double transgender experience based on the

reversal of the gender binary that starts without Robin and Kay's consent. Nevertheless, it is thanks to this reversal of gender roles that they can explore their own limitations as post-human beings and reassert their own identities, as in the end, which is – nonetheless- quite essentialist, they decide to recuperate their original gender. My motivation, thus, is to explore how despite being set in a post-human society (although, as I shall argue, within limitations), Stross's *Glasshouse* proves that the only way for post-humans to reassert their identities is in relation to "classical" Homo Sapiens paradigms and environments. As Stross explained in an interview with Damian G. Walter for *The Guardian*,

> "Many science fiction writers are literary autodidacts who focus on the genre primarily as a literature of ideas, rather than as a pure art form or a tool for the introspective examination of the human condition (…) I just can't help myself. I have a compulsive urge to use that background to build baroque laboratory mazes for my protagonists to explore, rather than being content to examine them in their native habitat" (in Walter 2008: online)

Therefore, as I shall argue, the post-human identity per se does not exist and it is even full of limitations regarding gender. To conclude, as early as 1893, H.G Wells in his foregrounding article "The Man of the Year Million", prophesized the rise of the post-human individual. Post-Humanism seeks to technologically transgress humans' natural conditions by means of technology. For this reason, depicting post-humans has become a recurrent motif in SF narratives, because as a transmedia genre it becomes useful tool for the analysis of the most ethical human side of this controversial post-humanist discourse, from which Stross's *Glasshouse* cannot certainly escape.

0.4. Transgenderism, Science Fiction and Post-Humanism

In the first chapter of *The Transgender Studies Reader* (2006), "*Psychopathia Sexualis* with Special Reference to Contrary Sexual Instinct", Susan Stryker and

Stephen Whittle present Richard von Krafft-Ebing's[8] *Psychopathia Sexualis* (1877) as the first landmark study to take a professional and scientific interest in the individuals' sexual impulses. Indeed, Stryker and Whittle are using Krafft-Ebing's work, characterized by the author's assumption "that any departure from procreative heterosexual intercourse represents a form of emotional or physical disease" (Stryker & Whittle, 2006: 21), in order to prove how transgenderism, at the very beginning, was scientifically labelled as a mental illness and as a deviation from the "heteronormative" and socially accepted standard. Stryker and Whittle introduce Krafft-Ebing's theory regarding transgenderism by explaining that

> Krafft-Ebing noted two primary categories of homosexuality – acquired and congenital- and considered each to contain transgender elements to which he applied ornate Victorian labels such as "deviation", "defemination", "viraginity", and "metamorphosis sexualis paranoica". This later term represented the most extreme (…) and the most pathological form of gender deviation (…). It described individuals we would today call transsexuals: people who strongly identify themselves as proper members of the "opposite" sex, and who wish to physically alter the sex-signifying aspects of their body" (2006: 21).

Krafft-Ebing's discourse could be considered one of the first scientific precedents to defend the patriarchal existence of the apparent intrinsic relationship between sex or biology and gender or social behaviour. The existent tie between biology and society seems to be unswerving and as a consequence, an extremely conservative position when it comes to the analysis of gender arises. Nonetheless, and despite its conservatism, Krafft-Ebing's discourse was progressive for the time because it cancelled all kinds of religious discourses about sexual difference as being symptoms of vice and sin. This unshakable and unbreakable relationship results in the presentation of gender categorization as an artificial social construction that limits diversity. As Judith Butler claims, society and gender issues have always been influenced by the patriarchy and

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[8] Richard von Krafft-Ebing (1840-1902) was Professor of Psychiatry at Vienna. His book was one of the earliest works dealing with homosexuality as if it was a mental illness caused by degenerate heredity. It also describes a wide range of paraphilias, sadism and masochism.

"the universal conception of a person (…) is displaced as a point of departure for a social theory of gender by those historical and anthropological positions that understand gender as a relation among socially constituted subjects in specifiable contexts" (Butler, 1990: 10).

Butler also studies the relationship between body and behaviour and the basis of her Gender Performativity Theory comprises her books *Gender Trouble: Feminism and the Subversion of Identity* (1990), *Bodies that Matter* (1993) and *Giving an Account to Oneself* (2005). According to her, "gender ought not to be constructed as a stale identity or locus of agency (…); rather, gender is an identity (…) instituted in an exterior space through a stylized repetition of acts" (1990: 179, original italics). Therefore, for Butler, gender is not defined by genitalia but by the socially conditioned daily behaviour. As a result, "if sex and gender are radically distinct, then it does not follow what to be given sex is to become a given gender" (1990: 112), which proves that Butler's primary intention is to destroy the gender binary. Along the same lines, Stryker defends that,

> The contrary subjective identities of transsexuals, the sartorial practices of transvestites, and the gender inversion of butches and queens all work to confound simplistic notions of material determinism, and mirror-style representational practices, in relation to questions of gender. Sex, it turns out, is not the foundation of gender in the same way that an apple is the foundation of a reflection of red fruit in the mirror; "sex" is a mash-up, a story we mix about *how* the body means (…) "Sex" is purpose-built to serve *as* a foundation, and occupies a space excavated for it by an epistemological construction project" (2006: 9, original italics).

Although Stryker agrees that sex and gender are and should, indeed, be considered as two separate and independent realities, she disputes Butler's approach to performativity "for suggesting that gender is a "mere" performance, on the model of drag, and therefore somehow not "real"" (2006:10). What is more, Striker aligns herself with the transgender scholarship that criticizes Butler for arguing that "gender can be changed and rescripted at will, our in or taken off like a costume" (2006:10) because transgender people provide for "their sense of gendered self no to be subjected to their instrumental

will (…) Rather, they see their gendered sense of self as ontologically inescapable and inalienable" (2006: 10).

In "The Empire Strikes Back: A Posttransexual Manifesto" (1987), Sandy Stone sets up as a counterclaim to American radical feminist author and activist Janice Raymond's *The Transsexual Empire: The Making of the She-Male* (1979), which is considered to be the foundational book of Transgender Studies as a disciplinary field of study. Raymond's main argument is that transsexualism is a patriarchal and psychological way "to colonize feminist identification, culture, politics and sexuality" (Raymond, 1979: 104). Indeed, for her the main problem of transsexualism is that "all transsexuals rape women's bodies by reducing the real female form to an artefact, appropriating this body for themselves (1979: 104). Accordingly, for Raymond male to female transsexualism is another way of reinforcing traditional gender roles. As a consequence, many different members of the LGTBI+ community have disputed Raymond's dogma. Stone has accused her of perpetuating a transphobic discourse that has triggered not only the need for transgender people to defend themselves but also the official foundational origins of Transgender Studies as an interdisciplinary field in the 1990s, whose main theorists are Sandy Stone, Susan Stryker, Jonathan David Katz, John Boswell and Martin Duberman.

The object of this dissertation, *Glasshouse*, narrates a peculiar kind of gender experimentation through temporary transgenderism. Nonetheless, Stross is by no means either one of the first or the only writer to consider transgenderism as a way to explore post-human identity. Actually, transgenderism has been and still is a recurrent motif in science fiction novels. Indeed, as Jessica Berman explains in her article "Is the Trans in Transnational the Trans in Transgender?" (2017),

> Within later twentieth-century literature, the trans position often challenged the
> power of social and juridical hierarchies to construct the human terms of both

> gender expression and other racial or ethnic categories (…) This is most notable in the extraordinary array of science fiction from the 1960s onwards on that posits gender nonconformity as crucial to transcending conventional human social organization while positing the extraterrestrial as a model for a potential transnational sphere (2017: 231).

On top of that, Berman specifically mentions two classic science fiction novels in order to exemplify how an extra-terrestrial future is produced "in order to discover a jurisdiction for the trans or inter-sex subject" (2017: 231), namely Ursula K. Le Guin's *The Left Hand of Darkness* (1969), and Joanna Russ' *The Female Man* (1975). Besides, in *Decoding Gender in Science Fiction* (2002), Brian Attebery points to feminist utopias as a SF subgenre in which the sex-as-reproduction ideal is questioned because "desire between utopian women serves as a sign of female self-affirmation and self-sufficiency and it integrated the outsider or misfit into the utopian system" (2002: 125). Moreover, he also mentions Octavia E. Butler's *Xenogenesis* trilogy[9], Marge Piercy's *Woman on the Edge of Time* (1976) and James Triptree "The Women Men Don't See" (1973) in order to exemplify how "both gender and science fiction […] can be seen as codes: cultural systems that allow us to generate forms of expression and assign meanings to them" (2002: 2).

Le Guin's novel, the best examination of androgyny in SF, portrays the Gethenians – who are ambisexual individuals, as they do not have a fixed sex. Written in 1969, Le Guin's novel becomes a reflection and an understanding of the politics of gender and society at the time it was written. In the review by *Intellectus Speculativus* (2017) on *The Left Hand of Darkness*, it is argued that

> Part of the problem is that the narrator of most of the book is trapped in a very 1960's approach to gender; a very binarist model, with masculine/male superior and feminine/female inferior; public/domestic forceful/submissive, strong/weak, violent/peaceful, straightforward/dissembling are all read through a male/female binary (…) Even those parts of the book are narrated by a Gethen native, an

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[9] Comprised by the books *Dawn* (1987), *Adulthood Rites* (1988) and *Imago* (1989). The trilogy presents an alien race – the Oankali – that have males, females and a third gender called ooloi.

"hermaphroditic neuter" as Le Guin described them, is affected by these things (review, 2017).

Because "the sex-gender system, Le Guin seems to suggest, produced social discord through its production of difference, which intersexuality ultimately undoes" (2017: 231), *The Left Hand of Darkness* enables us to acknowledge that Stross is contributing to a much wider conversation in science fiction regarding the use of temporary transgenderism - which has been running ahead of more academic gender theorists for decades. Though, both Stross and Le Guin's novels portray post-gender societies in which the constrictions of gender roles apparently do not exist but Stross's approach to transgenderism differs from Le Guin's. Whereas Stross portrays a posthuman society in which heteronormativity seems to have disappeared, Le Guin builds planet Gethen as a place in which characters with heteronormative ideas and identities – namely Genly Ai – and those who are ambisexual – the native Gethenians – cohabit. Whereas in Stross transgenderism as such is simply used temporarily, in Le Guin's novel the consciousness of being transgender does not exist, as characters have both sexes and the contraposition between conventional gender and transgender identities is used to question the presumed nature of masculinity, femininity and sexuality and to invite the readership to assume and to accept the existence of genderqueer positions too.

In conclusion, although Krafft-Ebbing's work firstly defined transgenderism as a mental disease and a deviation from the heteronormative social standard, scholars such as Sandy Stone, Judith Butler and Susan Stryker have an approach to it whose aim is to destroy the gender binary. As it happened with the post-human, transgender characters have also been deeply explored in SF because "that posits on gender nonconformity as crucial to transcending conventional human social organization" (Berman, 2017: 231),

an ideal that is reflected in Ursula K. Le Guin's *The Left Hand of Darkness* (1969) and

Stross's *Glasshouse*.

1. *Glasshouse* and the Persistence of Gender Essentialism

1.1. Gender Essentialism

> "This apparatus", said the Officer, grasping a connecting rod and leaning against it, "is our previous Commandant's invention…Have you heard of our previous Commandant? No? Well, I'm not claiming too much when I say that the organization of the entire penal colony is his work. We, his friends, already knew at the time of his death that the administration of the colony was so self-contained that even if his successor had a thousand new plans in mind he would not be able to alter anything of the old plan, at least not for several years…It's a shame that you didn't know the old Commandant!
>
> <div align="right">("In the Penal Colony", Franz Kafka, original ellipses)</div>

Charles Stross opens *Glasshouse* with this quotation from the short story "In the Penal Colony", written by the Czech author Franz Kafka in 1914 and first published in 1919. Kafka's text is relevant precisely because this short story is set in an unknown penal colony. In this place, the exiled prisoners are overseen by a group of guards who have absolute power and authority over them. Kafka's penal colony is, indeed, used by Stross as an anticipation of what the reader can expect to find in *Glasshouse.*

This chapter aims to analyse the persistence of gender essentialism in Stross's *Glasshouse* and to scrutinize the limitations of Stross's post-humans. In order to do so, I will analyse the contrast between the post-human Invisible Republic and the Glasshouse Polity, which is a Homo Sapiens simulation of the American Suburbia before the Acceleration Era. The main objective of this comparison is the establishment of a set of parameters that will enable me to answer the following research question: Does the post-human identity really exist? Supposing it does exist, which are its main limitations regarding gender? Accordingly, the first thing that should be done is to establish what gender essentialism is and what do we understand by it. But, where does this notion of "essentialism" have its origins? Philosophically, "essentialism" is defined as "the view that some properties of objects are essential to them" (*Encyclopaedia Britannica*). Since

Plato's Idealism[10] and Aristotle's *Categories*[11], early Western thought has been infused with the dogmatic conception that all objects have an essential substance that defines them. Nonetheless, Essentialism has been controversial from the very beginning, especially when we deal with essentialism regarding gender. As Taylor, Rupp and Whittier state in their book *Feminist Frontiers* (2011), "the ways that gender is portrayed or represented in the culture – in mass media, schools, public discussion – provides us with conceptual tools for thinking about men and women" (2011: 139). This set of conceptual tools that Taylor, Rupp and Whittier mention connects with gender essentialism because it strengthens and boosts the perpetuation of sexual and gender stereotypes that people are still using nowadays to define what masculinity and femininity are according to an essentialist canon based on a set of clear-cut parametres.

In her book *The Dynamics of Sex and Gender: A Sociological Perspective* (1981), Laurel Richardson argues that the "differential attitudes and feelings about men and women [are] rooted in the English language (…) First, in terms of grammatical and semantic structure, women do not have a fully autonomous, independent existence; they are part of man" (1981: 120). Along the same lines, the French author and theorist Monique Wittig[12] also argues this categorization of the English language as a gendered one in her non-fictional book *The Straight Mind and Other Essays* (1992). As she declares, "gender is the linguistic index of the political opposition between the sexes. Gender is used here in the singular because there not two genders, there is only one: the

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[10] Commonly known as "The Theory of Forms" or "The Theory of Ideas", which argues that non-physical forms are the ones that better and more accurately represent reality.
[11] Text from Aristotle's *Organon* (collection of Aristotle's six works on logic) that analyses the different subjects and predicated of a proposition.
[12] Although Wittig was French, she discussed the gendered nature of the English language after moving to the United States in 1976, where she also held many editorial positions.

feminine, the "masculine" not being a gender. For the masculine is not the masculine but the general" (1992: 17).

The political opposition between the sexes that Wittig acknowledges is precisely one of the main consequences of what feminist theorists and gender theorists have labelled as "gender essentialism": the existence of a fixed and universalized essence that characterizes and distinguishes men and women from a biological and psychological perspective. In her book *Feminist Metaphysics: Explorations in the Ontology of Sex, Gender and the Self* (2011), Charlotte Witt distinguishes Aristotle's unification essentialism from Saul Kripke's[13] identity essentialism. She argues, "Aristotle explains why a new individual exists at all over and above the sum of its material constituents or parts. In contrast, Kripke begins with an existing individual and asks about which of that individual's properties are necessary to be that very individual" (2011: 14). For Witt, Kripke's identity essentialism is crucial because whereas Aristotle's ideas simply turn human beings into living organisms, Kripke's theory turns human beings into social individuals, who

> Are those individuals who occupy social positions – […]- both synchronically and diachronically. Social individuals differ from human organisms because their actions are bound by social normativity, which is different from biological normativity in two respects. First, social norms are no species-based: they are flexible and variable and differ from culture to culture. Second, the normativity of social normativity requires the recognition by others that an individual is obligated to obey and fulfill the norm (2011: 20)

Labelled by Elizabeth Boskey as an "outdated theory [that] presumes men and women have intrinsic differences" (Boskey, 2017), the *Queer Dictionary* defines "gender essentialism" as

> The belief that gender roles and stereotypes are the natural result of biological and neurological differences between males and females. Gender essentialism assume

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[13] American philosopher and logician who has made influential contributions to the field of modal logic, and analytic philosophy with the creation of his creation of a system of semantics for modal logic.

> that AMABs are by nature men, that AFABs are by nature women, and the societal roles assigned to both are acceptable based on those differences. Gender essentialism denies the natural existence of transgender, intersex, and non-binary people, and tends to be closely linked to misogyny, heteronormativity and cisnormativity.

This definition confirms how gender essentialism is translated into the existence of a fire branded man-woman gender binary. Consequently, it is not an absurdity to claim that the Gender Performativity Theory formulated by Judith Butler stands for a constructionist approach towards gender, which is directly opposed to essentialism. Thus, Butler is a key gender constructionist. Moreover, if "gender essentialism denies the natural existence of transgender, intersex, and non-binary people" (*The Queer Dictionary*), why does Stross decide to use temporary transgenderism as the means through which his characters are inserted in a Homo Sapiens' patriarchal, heteronormative and misogynist environment based on the persistence and survival of gender essentialism to analyse post-human identity? The answer to this question can be found in Hayles', because as she points out "the posthuman subject is an amalgam, a collection of heterogeneous components, a material-informational entity whose boundaries undergo continuous construction and reconstruction" (1999: 3).

Readers of *Glasshouse* meet Robin and Kay, in the first chapter of the novel. From the very beginning, Stross describes Kay (the girl) physically, but not Robin, the main male character and also the unreliable narrator of the story. Robin is in charge of describing Kay for the first time and as he explains she is a "dark-skinned human with four arms" (Stross, 2006: 1) and "she's got sharp cheekbones, bright teeth framed between perfect lips; she's got bilateral symmetry (…) a face that's a mirror of itself" (2). Kay's description is mainly human if it was not for the fact that she has four arms and as because as she admits "I haven't been human for long" (2).

While the *Transhumanist Declaration* asserts that post-humanism "envisions the possibility of broadening human potential by overcoming (…) cognitive shortcomings" (1998), it is interesting to notice how Stross's post-humans experience lots of cognitive problems and amnesia episodes as a consequence of the continuum of backups that they receive so as to achieve identity reindexing. These backups are done by means of using A-Gates – nanotechnological displays used for creating all kinds of objects molecule by molecule from templates, including the redesign of physical bodies and mind uploading processes. Robin explains that "to make a backup snapshot you just need to sit down in the thing and tell your netlink to back you up (…) but you won't notice the possibly disturbing sensation of being buried (…) because your netlink will switch you off as soon as it starts to upload your neural state vector into the gate's buffer" (38). Nevertheless, Robin confesses that he has lots of problems to understand who he really is and what his real identity is:

> Here I am, awake and alive – whoever I am. *I'm Robin, aren't I*? I have a slew of fuzzy memories, traces left behind by memory washes that blur my earlier lives into an impressionist haze. I had to look up to my own age shortly after I woke (…) There are huge, mysterious holes in my life (…) Whatever grade of memory excision my earlier self-requested must have been perilously close to a total wipe. (12, original italics)

These cognitive gaps become the first symptom that should alert us that something is happening to post-human individuals. Despite he is constantly manipulating himself through a continuum of backups, Robin is haunted by flashbacks and lapses of memory from his past lives that do not allow him to really identify and define who he is. Robin is constantly struggling to create his own identity but in a post-human world, this seems an unbearable and impossible mission to fulfill.

Despite being set in a post-human environment, the Glasshouse Polity is what really occupies the largest segment of the novel's narration. The experiment is intended to be "a cross-disciplinary one being conducted by the departments of archaeology,

history, psychology, and social engineering within the Scholasticum" (16) which aim is to "probe emergent social relationships in an early emotional-age culture" (17) from which the post-humans that inhabit the Invisible Republic have lost all track. This "early emotional-age culture" corresponds to which Professor Yourdon, Major Fiore and Doctor Hanta - the subjects in charge of conducting the experiment - name "the Dark Ages". During the presentation of the experiments to its participants, this historical period of time is defined like this:

> The first dark ages neatly spanned the first half of the Acceleration, the so-called late-twentieth and early-twenty-first centuries (…) If we follow the historical record forward from the pretechnological era into the first dark age, we find we're watching humans who lived like technologically assisted monkeys – very smart primates with complex mechanical tools, but basically unchanged since the species first emerged. Then we look at the people who emerged from the first dark age, we find ourselves watching people not unlike ourselves, as we live in the modern era, the 'age of emotional machines' as one dark age shaman named it (46).

From this description, two important aspects arise: firstly, the post-human's awareness about the existence of a Homo Sapiens ancestor (the "technologically assisted monkeys") in the same way that Charles Darwin in his *On the Origin of Species by Means of Natural Selection* (1859) explained that humankind and apes have a common ancestor. Therefore, post-human societies acknowledge the existence of a preceding society from which they come from: humanity. Indeed, as Sarah Herbe defends in "Life Writing Projects in Posthuman Science Fiction" (2014), the Glasshouse Polity could be read as a post-human attempt to trace the origins of their history because "the life writing projects attempted or discussed by characters in posthuman science fiction novels are not necessarily central to the plots of the novels, but they point towards central issues in the lives of the depicted posthumans" (2014: 187). Robin is, without any doubt, engaged in a quest to write his own story by means of finding and discovering his own identity. Moreover, it is important not to forget that, as Robin explains, "the letter from my earlier self said I was an academic, a military historian

specializing in religious manias, sleeper cults, and emergent dark ages" (12). Therefore, Robin is also related to writing through the letters that he is constantly writing in order to remember his former selves and because as a historian, he was metaphorically trying to draw, trace and write the history of the society to which he belongs.

Secondly, the "dark ages"' definition also shows that post-humans are conscious about the fact that some spectrum of their inner humanity has been lost, as they are simply considered to be "machines" with emotions. Thus, this emotional side seems to be the only one that apparently interrelates humans and post-humans. Nevertheless, I find that the way in which Yourdon decides to define the "dark ages" simply is posing a contradiction when it comes to define what a post-human is: how can they acknowledge the existence of a previous human species from which they evolve when later they decide to define themselves as being simply machines?

In order to answer this question and to justify this contraposition, Piccolo 47 – the therapist robot that is helping Robin during the recuperation process from his last backup- explains to Robin how the experiment in which he is going to volunteer would become a good opportunity for him to "be provided with an occupation (…) and introduced into a community of peers who are in the same situation" (18). Thus, according to Piccolo 47, the experiment is intended to allow post-humans to "have time to cultivate [their] personal interests and select a direction that fits [their] new identity, without pressure from former associates" (18).

On the contrary, for Professor Yourdon, Major Fiore and Doctor Hanta the experiment has a different ultimate objective: they do not want the subjects to find and shape their identities but to supply data because as Professor Yourdon explains, "Ironically, we know a lot more about their culture around the beginning of the dark age, around old-style year 1950, than about the end of the dark age, around 2040" (47).

Consequently, the experiment is seen as a tool that will allow them to access old human data, as "this is a sociological and psychological immersion experiment, which means we'll be watching how you interact with each other" (47). For this reason, the Glasshouse Polity can be seen as a mirroring image of Foucault's panopticon, as it is a pseudo-prison where the participants will be strictly controlled.

In addition, they will be expected to strictly follow a certain set of social rules that are mostly build up on the basis of gender essentialism, as men and women are expected to behave differently in their social environment according to their given gender. Thus, the biological differences between men and women are the ones that will determine how subjects need to behave inside the Glasshouse Polity. In fact, Robin argues how "I'm supposed to act in character for the historical period we're pretending to live in, wearing a body that doesn't resemble me, using an alias and a fake background identity, and not discussing the outside world with anyone else in the study" (43). During the experiment's presentation, Professor Yourdon's explanation about the "dark ages" highlights and warns the participants about the ritualistic nature of this society, in which

> (...) Much attention [was] paid to individual relationships and status [was] often determined by random genetic chance. *The core element of this society is something called the nuclear family. It's a heteromorphic structure based on a male and a female living in close quarters, usually with one of them engaging in semi-ritualized labor to raise currency and the other preoccupied with social and domestic chores and child rearing.* You're expected to fit in, although child rearing is obviously optional (48, italics added for emphasis).

Professor Yourdon's emphasis on the nuclear family as a heteromorphic structure becomes essential to understand that the Glasshouse Polity will recreate a patriarchal system in which the gender binary existed and in which gender roles where not defined sociologically but biologically. Consequently, the participants will abandon their post-human landscape to become simply humans in a conventional human world. Moreover,

in the Glasshouse Polity "male" and "female", and not "men" and "women" are the only possible labels used to classify individuals according to their gender. Whereas "men" and "women" classify people according to physical and social characteristics, "male" and "female" are only used when biological characteristics are taken into account. Thus, whereas the former refers to gender, the latter does so with sex. Hence, from a post-human perspective, gender seems to rely only on biology.

Before Yourdon's presentation, a crucial process dealing with gender has already taken place: when Robin attends this meeting, he is not a man anymore: he has become Reeve, a woman, after his last backup process. When Robin feels and discovers his new female body, he is uncomfortable because as he says, "*my hips are too wide* and I'm too short in the trunk as well (...) Oh, I realize, sliding my hand between my legs, *I'm not a male. No, I'm female.* (...) *Female and orthohuman*" (39, original italics). In addition, he describes himself as being "short and weak and unarmed, but cute if your sense of aesthetics centres on old-fashioned body plans" (41). Instead of being shocked, Robin shares with the reader that "this in itself is no big deal. I've been a female orthohuman before (...), and it's not my favourite body plan, but I can live with it for the time being" (39-40). In fact, the only thing that annoys and worries him is that he suspects that "*someone tampered with my backup*" (40, original italics) and, that consequently, "somewhere a different version of me had died" (40) because "identity theft is an ugly crime" (2006: 41). Robin's lack of surprise regarding his new feminine condition illustrates how in this post-human environment temporary transgenderism is, apparently, a tangible reality. As post-human gender seems to be based simply on biological traits and not on the interconnection between biology and behaviour that distinguishes masculinity from femininity, we could claim that in a post-human environment the notions of the gender binary and transgenderism do not exist per se.

In other words, Robin's new female condition can only be analysed from a transgender perspective after he starts in the Glasshouse Polity because it is the first moment in the novel when his new feminine body will force him to adapt her behaviour to the expected social rules. Let me rephrase this ideal: if transgender individuals see themselves trapped and oppressed by a physical body that forces them to act in gendered ways that for them are inescapable, how can transgenderism be considered as such in a post-human environment in which gender is only a physical but not a sociological reality?

After Yourdon's lecture has finished, the characters are in a big room divided in two groups: men and women and Robin/Reeve does not wait long to describe them. Regarding women, the other participants are "Alice the redhead (...) Angel (dark skin and frizzy hair), Jen (roundish face, pale blond hair, even curvier than I am), and Cass (straight black hair, coffee-colored skin serious eyes)" (49). The men are "Sam (whom I met), Chris (the dark-skinned male from the back row), El, Fer, and Mick (...) and the short hair gives them all a mechanical, almost insectile, similarity. *It must have been a very conformist age*" (50, original italics). From these descriptions, three elements can be highlighted: firstly, Reeve described women physically without making assumptions. Secondly, when she describes men she focuses less on their physical individual appearance but she generalises and makes historical assumptions about the period in which they are going to live and thirdly, she has met one of the men before: Sam, nicknamed "The Big Guy".

Although he is physically strong, Sam is different from the rest of the male subjects: whereas they are presented as extroverted men with their own voice and authority, Sam is depicted as an introverted individual full of fears and doubts towards the experiment. Nonetheless, Sam is not willing to oppose the Glasshouse's controllers

and Reeve does not consider him a menace. In fact, after becoming her wife, she realises that Sam is a kind-hearted and gentle man and Sam's comparison with the rest of the masculine cohort becomes a symptom of what will be further discussed in this dissertation: how masculinity is portrayed in the Glasshouse polity.

So as to conclude, Stross's *Glasshouse* is certainly infused with traces of gender essentialism that are noticeable at a linguistic layer, as Stross uses the gendered pronouns *he* and *she* to define his characters. The controversial nature of essentialism – which argues the existence of certain properties that are essential to define objects – was applied to gender by Laurel Richardson and Monique Wittig, who discussed the gendered nature of the English language, which turns "gender into the linguistic index of the political opposition between the sexes" (1992: 17). In *Glasshouse*, gender essentialism is firstly noticeable at a linguistic layer - as Stross uses the pronouns *he* and *she* to define his characters – and secondly, because Stross's use of temporary transgenderism in the simulacrum implies that post-human individuals are certainly infused with Homo Sapiens patriarchal paradigms in which the gender binary is a socio-political tool that defines the individual.

1.2. Recreating the American Suburbia

> Reeve, and Sam Brown- not their, *our*, real names- are a middle-class couple circa 1990-2010 from the middle of the dark ages. They are said to be "married", which means they live together and notionally observe a mono relationship with formal approval from their polity's government and the ideological/religious authorities. It is a publicly respectable role. For purposes of the research project, the Browns are currently both unemployed but have sufficient savings to live comfortably for a "month" (...) They have just moved into a suburban split-level house with its own garden (...) on a road with full-grown trees to either side separating them from other similar-looking houses (55)

With this description, Stross introduces Reeve and Sam into the Glasshouse Polity, which is a clear reference to the American suburbia of the 1990s – 2010s. But how can

this be proved? In "Looking for History in "Boring" Places: Suburban Communities and American Life" (2014), Michael P. Marino states that "local history can act as a vehicle through which (...) hidden history can be accessed" (2014: 490). Marino's words answer why the American Suburbia is the place where Stross's post-humans settle the simulacrum: if the experiment aims to collect lost data about the "dark ages", this local suburban community is the better source to unveil all these human cultural aspects. Nonetheless, this only answers why choosing suburbia, but it does not resolve the enigmatic nature of why choosing America. Suburbia became from the 1950s onward a cultural American issue used as a means to control and to establish strong gendered behaviour patterns. As Marino explains, "if a suburban home is a form of theatre the residents of the house must play all certain roles. (...) The father worked and supported the household, while the mother cared for the house and raised the children" (2014: 495)

Indeed, Marino's words coincide with the information regarding domestic duties that Sam and Reeve find in a tablet in their new suburban house: "the people of the dark ages, when living together, apparently divided up work depending on gender. Males held paid vocations; females were expected to clean and maintain the household, buy and prepare food, buy clothing, clean the clothing, and operate domestic machinery while their male worked" (59). From this description, it is clear that suburbia will become an essential element to understand and analyse how gender patterns work in this novel because, as L. Timmel Duchamp discusses, "Stross doesn't provide a baseline sense of gendered behaviour and values in the world outside the Glasshouse" (2006). Although Sherryl Vint argues that "simply creating a world in which the gender or sexual orientation of a body can easily be changed is not sufficient to dismantle the authority of gender as a category of social discrimination" (2002: blog), it is clear that

the Glasshouse environment is designed in a way that it is aimed to "inculcate this weird gender-deterministic role play" (71) and Sam and Reeve will become its players.

Nonetheless, Stross's use of the American suburbia as a means to study gender politics is not an innovation. In *Galactic Suburbia: Recovering Women's Science Fiction* (2008), Lisa Yaszek mentions a list suburban SF women writers – namely Carol Emshwiller, Marion Zimmer Bradley, and Anne McCaffrey (2008: 18). Although Stross's novel belongs to SF and it is aligned with the literary works of the former female authors, the other writings that use suburbia as a tool for exploration – namely Richard Yates's *Revolutionary Road* (1961), Jonathan Franzen's *The Corrections* (2001), Jeffrey Eugenides's *The Virgin Suicides* (1993) and Alice Sebold's *The Lovely Bones* (2002) among others – do not.

Sam is firstly introduced as being a thoughtful, unhappy man, whose expression is hard to read and whose "black mane of fur around his mouth obscure the muscles there" (53). Moreover, after Reeve has spoken to him and she has decided that he is a suitable husband for her, Sam automatically clarifies that he is "not good at intimacy. Especially with strangers" (53) and that they "don't have to have sex" (54). Thus, Sam wants to make the readers accept that he does not want to be a cog trapped in the corporate machine. For this, Sam and Reeve are quite similar: they have rebellious minds and they are overwhelmed by a terrible sense of unhappiness, dissatisfaction and discomfort once they are immersed in the simulacrum. Nonetheless, whereas Sam is a passive sufferer – as he does not openly express his feelings and his discomfort - Reeve is an active sufferer because she does not hide her emotions and her unease, which may be driven by her role as the narrator of the story. Stross warns the reader about Robin/Reeve's unreliability in his blog when he says that "I ended up with a novel narrated in the first person present tense by the ultimate unreliable narrator [...] Who in

turn thinks they're being injected into a prison designed to rehabilitate war criminals […] And nothing is what it seems, in this panopticon, and indeed our hero/ine may be the worst villain in the plot" (blog: 2006). Robin's pseudo-villainy is due to his identity as a former war criminal and as a narrator, he can be considered as a manipulative character that is conditioning the reader's approach and understanding of the story. Nonetheless, Sam rapidly turns into a "perfect" man of his new time, as he is rapidly assigned a temporary job and he is induced to do some professional training. Sam's understanding of social rules and his adaptation to the Glasshouse's labour system are meant to make Reeve understand that she does not need to work because, "You can ask for a job, but they don't expect you to (…) We get paid collectively" (75). Accordingly, in Stross's orthohuman simulation, the images of a good life based on the binary distinction between the home-making wife and the breadwinner husband prevail.

As in this society women are not expected to get a job boosts the ideal that the "dark ages" were a historical time based on the ruling power of patriarchal forces. So, why has Stross decided to place his narrative in the 1990s and not in the clear-cut patriarchal 1950s? For me, the gist of the matter is that Stross is directly trying to connect with his readership by presenting them a period of time that is not far from ours so as to raise the reader's awareness about the existence of gendered-patterns of behaviour in our contemporary society. In other words, the temporal proximity offers to Stross the possibility of "interrogating the assumptions and stupidities we take for granted" (blog, 2013). Lastly, as Joanna Wilson explains it is important to notice how, although "the American suburbs have long held currency in Western imagination as the pinnacle of the good life, the attainment of the American Dream" (2015: 1). Stross's environment, nevertheless, is far from being an easy pathos for post-humans, especially for women, as it not their natural historical time.

In conclusion, the glasshouse polity emphasizes the nuclear family as a heteromorphic structure based on clear-cut differences between men and women and the American suburbia of the 1990a – 2010s becomes the main scenario where Stross assesses his post-human characters regarding gendered behaviour. The experiment is aimed to collect lost data about the "dark ages" and suburbia becomes not only the better place to unveil this hidden history but also the scenario in which gendered-patterns of behaviour can be analysed because "if a suburban home is a form of theatre, the residents must play all certain roles" (Marino, 2014: 495).

1.3. The "Dark Ages" Laws: Masculine Abuse, Superiority and Surveillance

Bret Carroll argues that, "The lens of gender and masculinity studies has revealed that the founders of the United States were heirs to a European worldview grounded in an agrarian, preindustrial economy and in patriarchal social arrangements that assigned males the responsibilities and privileged of public and domestic power and consigned women to subordination" (2003: 2). When Stross's characters are inserted into the glasshouse, the differences between men and women range from the dress code to their social roles and working duties. Male individuals are hierarchically superior to women and Cass explains to Reeve regarding her husband during a phone call,

> "He's read the manuals and he's insisting he's going to get the completion bonus, and if he has to, he's going to force me to do everything by the book. He went out this morning, locking me in and taking my wallet – he's still got it – and when he got back, he threatened me to beat me up if I didn't prepare a meal for him. *He says that for maximum points female must obey the male, and if I don't do what the guidelines say, he'll beat me up* (...)" (69: italics added for emphasis).

Cass' words indicate that this experiment is based on the recreation of a patriarchal community in which individuality is only a privilege that men can have. Whereas men are independent subjects with agency, women are subjected to men, they are not seen as

"real" people due to their lack of agency and social independence and are reduced to the stereotypes of housewife and mother. Besides, Cass' phone call makes us wonder which is the kind of masculinity that the masculine cohort is supposed to perform. For Cass, women are men's property and men human beings are allowed, by law, and rewarded for beating up their wives if they do not behave as it is expected.

In their article "Hegemonic Masculinity: Rethinking the Concept" (2005), R.W Connell and Messerschmidt claim that hegemonic masculinity resulted from the merging between gender and social structures. According to them, "hegemonic masculinity was not assumed to be normal in the statistical sense (...) But it was certainly normative. It embodied the currently most honoured way of being a man" (2005: 832). For Connell and Messerschmidt, hegemonic masculinity has historically been considered as the most praised way of being a man and, indeed, it is the kind of masculinity enacted by the vast majority of the masculine characters in *Glasshouse* because it is mostly based on the patriarchal domination of women. Besides, Connell explains, "true masculinity is almost thought to proceed from men's bodies" (2005: 45). Nonetheless, Judith Halberstam disputes him because as she states: "Masculinity becomes legible as masculinity where and when it leaves the white male middle-class body" (1998: 2). Therefore, for Halberstam the naturalising correspondence that it is believed to exist between the male body and masculinity is what really empowers hegemonic masculinity. For the main purpose of this dissertation, both Connell and Halberstam's ideas are useful despite their inner contradictions. One the one hand, Connell's argument justifies why Stross decides to place his post-human individuals in an orthohuman simulation, as the body becomes the essential distinction that conditions men and woman both biologically and socially. Post-humans start to consider their socially gendered roles only after they have been inserted in the "dark ages'"

simulacrum and men's power certainly depends on their new biological condition. On the other hand, Halberstam's words anticipate one of the major concerns of this dissertation: namely, that post-humans would only assert their real identities once they have returned to their natural environment, as men would only realise about the existence of a truly masculine identity once they have abandoned their male orthohuman middle-class bodies.

Sam, formerly the female Kay, is the only masculine character that escapes the paradigms of the patriarchal masculinity that the rest of the masculine participants in the experiment perform. In *Manhood in America, a Cultural History* (2006), Michael Kimmel analyses the development and the history of American masculinity. In the 19th century America, the Self-Made man was "made for action, mobile, competitive (...) desperate to achieve a solid grounding for a masculine identity" (2006: 13). Kimmel continues his argumentation by explaining that at the beginning of the 20th century, family and fatherhood were the essential pillars for the Self-Made man to reassert his manhood and that from 1960s onwards, masculinity was defined according to the relationship between men and their work, as "virtually, the only way to be a real man in our society is to have an adequate job and earn a living" (2006: 161). Although Sam starts his adventure in the "dark ages" being unemployed, only three days later he is assigned a job because he is expected to work in order to perform the breadwinner's role. Consequently, in *Glasshouse* masculinity is not only based on controlling and subjecting women, but also on the importance of having a job, earning a living and becoming a breadwinner and a father, which connects Kimmel's ideal with Stross's portrayal of masculinity in the novel.

Although at first sight all the male characters of this novel can be considered as Self-Made men at first sight due to their role as breadwinners, it is important to notice

that none of them are Self-Made men but the contrary. The masculine cohort is not made of Self-Made men by definition because they are breadwinners by accident, not by choice and none of them has the intention to become a real pater familias. In fact, they are simply individuals trapped in the corporate machine of an artificial society. For this reason, their masculinity is artificial and imposed, not a real one. Nonetheless and ironically, is precisely this artificiality the one that boosts post-human limitations with regards to masculinity. Without any doubt, the masculine character that better represents and embodies the patriarchal masculine spirit that the controllers of the experiment are meant to analyse is Mick, Cass' husband, who is the real patriarchal man of the novel.

From a post-human perspective, Mick is not seen as an atypical man whose model of masculinity is an anomaly that cannot be applied to the real world. Instead, the Glasshouse Polity enhances and praises his hegemonic patriarchy, which is supported by his body, his job and his abusive attitude towards Cass. Mick is a misogynist that rapidly adapts himself to his new social condition without questioning anything. Thus, Mick's patriarchal masculinity can be read both a symptom of his inability to question the system, which simply turns him into a "man" trapped in the corporate machine", and as a symptom of post-human unawareness regarding true gender politics. Furthermore, Joanna Wilson explains that American suburbia was far from being a utopian place in which the American dream was easily fulfilled. In fact, for her American suburbia was infused with a sense of Gothic disruption manifested in aspects such as the intention "to evoke a horror of suburban surveillance and conformity and anxieties about the violence and perversity of family life hidden behind closed doors" (2015: 3). Moreover, as Bernice M. Murphy also holds in *The Suburban Gothic in American Popular Culture* (2009), "In the American Gothic, the family home replaced the castle as the central

locus of terror" (2009: 105). Accordingly, Mick's violent behaviour can be also analysed as the inheritance of the Suburban Gothic literary genre.

For this reason, the Glasshouse polity promotes a model of masculinity that is based on abusing women, on misogyny and on a clear hierarchical structure between the sexes. Indeed, as Susan Edmund argues in "Accelerated Immobilities: American Suburbia and the Classless Middle Class" (2003), it seems that Stross, through the contraposition between characters such as Mick and Sam, is trying to prove how "the middle-class premium placed on "keeping up appearances" – as, indeed, a necessary condition for one's prosperity- suggests one way in which the suburban codes can end up severely compromising the possibilities of human community and human intimacy even among members of a single family" (2003: 415). In the Glasshouse Polity, masculinity is compromised by the presence of a strong social legislation that post-humans are supposed to accept and that turn up the experiment into an exploration of how gender roles and patriarchy can be used as totalitarian systems of control with the excuse of achieving surveillance.

In conclusion, masculinity in this novel obeys Foucault's Panopticism because men control women and because it is also an excuse used by the conductors of the experiment to submit its masculine participants. Consequently, as this kind of human patriarchal masculinity is presented as negative, it indirectly implies that post-human masculinity – and although Stross is trying to portray his society as being a post-gendered one – is also patriarchal in its more inner essence. Moreover, this patriarchal model of masculinity is not natural but artificial instead, being this artificiality the one that is precisely limiting post-human identity with regards to masculinity.

1.4. The Baby-Boom Cohort: Women in the Glasshouse Polity

Glasshouse pictures a world in which women are also crucial characters with interesting stories to tell. Contrarily to what happens with the masculine cohort, Stross encourages Reeve to describe all the other feminine participants physically. On account of the fact that in *Sexing the Body: Gender Politics and the Construction of Sexuality* (2002), Anne Fausto-Sterling states that "our bodies are too complex to provide clear-cut answers about sexual difference" (2002: 4) and that "what bodily signals and functions we define as male or female come already entangled in our ideas about gender" (2002: 4), Stross decides to focus his attention on the physical description of the women's cohort to highlight how women's bodies are the essence that conditions femininity and women's social roles. In *Undoing Gender* (2004), Judith Butler also establishes that "sex is made understandable through the signs that indicate how it should be read or understood. These bodily indicators are the cultural means by which the sexed body is read" (2004: 87). Accordingly, the description of the feminine body is crucial to understand that in the "dark ages", gender is not simply a biological issue but also a sociological one.

Curiously, Stross focuses his attention on describing two specific physical attributes: the hair and the skin: Alice stands for her redhead, Angel for her dark skin and her frizzy hair, Jen for being curvier and blond and Cass for having black hair and coffee-coloured skin (49). The fact that both Angel and Cass are portrayed as African American characters is not a coincidence. Instead, as Robert Seguin debates in *Around Quitting Time: Work and Middle-Class Fantasy in American Fiction* (2001), it has something to do with the suburban nature of the "dark ages'" simulacrum, as the suburbia was often considered as a place where "the contemporary exploration of the textural and historical imbrications of race/class/gender [...]" (2001: 13) was possible.

Consequently, Stross constructs a middle-class society that is made up from people that come from different racial backgrounds as a means of making prominent the idea that the Glasshouse Polity is the representation of a prototypical orthohuman middle-class society. Nonetheless, the female characters are not only racially different. Indeed, the main difference that sets them apart is intrinsically linked to their psyche and to their attitude towards the experiment. After the episode in which Reeve is almost detained by the police for not wearing the appropriate dress code expected from a woman, our protagonist meets Jen, Angel at Ye Olde Coffee Shoppe. This scene is relevant because on the one hand, Stross uses it as an excuse to make a detailed description of Jen and Angel's clothes – which are appropriate and follow the expected dress code of the period – so as to prove how Reeve's psyche differs from the rest.

Whereas Jen and Angel are conformist characters that have rapidly adapted to the new rules without questioning its patriarchal nature, Reeve is presented as a non-conformist woman with a rebellious mind. This psychological contraposition becomes more outstanding when Jen and Angel do not hesitate to openly criticise Reeve's behaviour because they assume that "We're going to have to defend your behaviour yesterday, and the other groups can add points or subtract them depending on whether they think we deserve it and on whether they think we'll hold a grudge when it's their turn the ring" (81). Moreover, Cass becomes also a target of their raw critiques because "It's going to be bad enough with Cass" (81). Angel and Jen's argument is that Cass is not simply fitting in and Reeve quickly decides to interrupt them to explain that a worried Cass phoned her because she is afraid of her abusive husband. Showing an absolute lack of empathy and sorority towards Cass, Jen rapidly states, "What business of ours is it? What's between a wife and her husband is private, as long as it doesn't

threaten to drag out points down or get our whole cohort in trouble. Apart from the other thing, of course" (81).

During the whole conversation, Jen and Angel show glimpses of their inner cold-hearted nature. They do not mind and they do not care if Cass is being beaten up by her husband unless it does not affect the general score with which the conductors of the experiment award the cohort. Although Jen is telling Reeve that she does not need to worry about Cass' issues, she is openly expressing that the only external thing that should worry them about other couples is if they have sex or not, because "you get social points for fucking" (81). Therefore, for Jen and Angel the Glasshouse Polity becomes a kind of mathematical world in which only numbers matter and in which human relations are not important unless they imply getting positive points. Indeed, Wilson's article regarding the Gothic aspect hidden in the American suburban life sheds light into the fact that "within these communities, neighbours are continually monitored to ensure adherence to strict social codes of behaviour: if one does not conform, one risks arousing the suspicions of one's fellow suburbanites, or even being ostracised from the community" (2015: 4).

Curiously and ironically, despite these two women are presenting themselves as being careless about other's issues, they are the only ones who openly criticise others' behaviour. In this sense, it would be pertinent to state that both Angel and Jen are the embodiment of Foucault's Panopticism in itself: they are acting as pseudo-controller individuals who analyse and comment other's lives – namely Reeve and Cass' – with the pretext of achieving a common surveillance for the whole cohort. As the narrative advances, the reader may acknowledge how Angel and Jen's attitude does not change and consequently, the women's cohort is absolutely determined and characterized by the absence of sorority.

The women's role as housekeepers within this suburban environment is proved by Jen and Angel's obsession regarding maternity. Although the subjects are neither expected nor forced to have babies, being a mother becomes a main obsession for the vast majority of the feminine subjects. Nonetheless, for Reeve maternity is discarded as a plausible option, at least at the very beginning of the experiment. Reeve considers maternity and pregnancy as being dangerous because "having a child is hard [...] the idea that orthohuman bodies [...] are so ortho that we could *automatically* generate random human beings if we have sex is absolutely terrifying" (121, original italics). Reeve's vision of sex as a peril and as a mechanism through which new lives can be generated gives us a clue about how reproduction works in the post-human world too: it is not based on sexual activity, as sex is only a physical activity without implications. This proves that post-human life is not created by means of biological mechanisms but by the interference of post-Acceleration technology.

When Reeve discovers that orthohuman individuals are characterised by the natural fertility of their bodies is when she becomes a librarian. Reeve is meant to substitute Janis, the former librarian, because she is pregnant and when our protagonist realises the inner reason why Janis' replacement is needed, a general feeling of anxiety oddly overwhelms her. Reeve sees Janis' baby as an "encapsulated tumor" (121), as an entity, which does not naturally belong to the body and that, is simply invading Janis' flesh and bones because for the first time in the novel, Reeve acknowledges, in Hayles' words, how "the reflexivity that looms in cybernetics also inhabits evolutionary biology" (1999: 284). Reeve's first encounter with pregnancy will not be an isolated episode because Alice quickly gets pregnant too and Jen is also planning to do so. Maternity has, all of a sudden, become a central symbol in Stross's *Glasshouse* and the female characters are rapidly inserted in a loop that turns them into "baby-boomers",

into procreation machines that are simply trying to perpetuate the validity of the prototypical suburban "nuclear family" without thinking about the psychological and sociological implications that maternity entails. These women do not wish to become mothers because they have a natural instinct. Instead, they simply want to be mothers because this will increase the general scores of the participants' cohort and because, according to the "dark ages" laws'; this was what was expected from women: to have children and raise them.

Overall, it may be said that when it comes to the analysis of the feminine cohort, Stross emphasizes its physical description as a means to show how inside the Glasshouse Polity, femininity and womanhood as social conceptions are directly linked to the physical female body. Women's genitalia determine their role as housewives who are not expected to work outside the house, submitted wives and mothers. This group of "pseudo-women" are getting pregnant not because it is their inner desire, but simply because it is a prototypical sociological implication of femininity in itself. Therefore, Stross's narrative proves how in the Glasshouse Polity women's gender is not only based on the "house-wife" role but also on the obsolete patriarchal assumption that women are only true women after they have become mothers.

2. *Glasshouse* and the Innovations Regarding Gender

In his blog post "World Building 404: The Unknown Unknowns", Charles Stross discusses how new-future worlds are built in contemporary SF stories. For him, the most important thing is to keep a balance between the familiar and the unfamiliar, so as to enhance a positive vision of future innovations in a way that they are not seen as disruptive elements that affect the inner human condition and to promote the reader's engagement with SF stories. Stross cleverly quotes a speech given in 2002 by Donald Rumsfeld, a retired American politician, businessman and American Secretary of Defence about the American invasion of Iraq. In this speech, he intended to establish a clear distinction between different levels of uncertainty. As Rumsfeld asserted, "there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there also unknown unknowns – there are things we do not know we don't know" (2002, cited in Stross, blog: 2012).

Rumsfeld's argument becomes Stross's basis to justify the way in which he builds his novels. For Stross, his narration is based on the intrinsic combination between an 85% of known knowns – namely the issues that contemporary society recognizes and acknowledges as tangible realities- a 10% of known unknowns – the realities that we are able to appreciate only unconsciously but not in practical or real terms – and a 5% of unknown unknowns – all the elements that are simply speculative and imaginary. The former chapter has analysed the post-human individual from the perspective of two of the levels that Stross uses to create his fiction. Firstly, the 85% of known knowns – which corresponds to the recreation of the Glasshouse Polity as a simulation of the American suburbia. This knowledge belongs directly to the reader but not to the post-

human characters*,* as for them "the dark ages" is simply a simulation. Thus, the characters of the novel analyse the orthohuman society in which they are inserted from a point of view that corresponds to the 10% of known unknowns, as we must not forget that the Glasshouse polity is supposed to be a sociological experiment which aim is to recover human's data from which the 27th century societies have lost all track. Thus, the Glasshouse polity is an assumption in itself, a belief about how human life may have been in the past but from which post-humans do not have a confirmed certainty, which undeniably questions the reliability of the gathered data.

The aim of this chapter is to analyse the post-human individual from the perspective of the remaining 5%, the percentage that corresponds to the unknown unknowns. In the same way that the post-human individual has been previously analysed from a gendered perspective in order to spot the deficiencies and the limitations of gender essential in post-human societies, this section aims to explore the innovations regarding post-human gender that Stross also seems to offer. Nonetheless, it is important to highlight that all the claims that are going to be done regarding post-human gender in the 27th century are basically speculative, as we cannot be sure about the changes that gender politics will undergo in the following centuries.

2.1. Nonbinary Gender Identities: Transgenderism and Genderfluid

In his ground-breaking book *Nonbinary Gender Identities: History, Culture and Resources* (2017), Charlie McNabb defines nonbinary gender identities as those "that are not exclusively male or female. Nonbinary people can identify as being a combination of male and female, shifting between male and female, or off the male-female continuum altogether" (2017: xv). *Glasshouse* provides the reader with a post-

human 27th century "what if" scenario in which individuals can have any body shape they want. Stross's post-humans have fluid bodies, which can be easily be manipulated thanks to the interference of technology and backups, as their physiology is not unique. The first time that the readers acknowledge Kay, the female protagonist of this story, she is described as if "she's wearing is roughly ortho, following the traditional human plan body" (1). Although Kay is the first person that Robin encounters in this story; he suddenly meets two more characters, Linn and Vhora. As Robin explains, "Linn is wearing a orthohuman[14] female body (...) Vhora, in contrast, is wearing something like a kawaii pink-and-baby-blue centaurform mechabody" (29). According to Robin's description – who indeed describes also him as being "in a male orthohuman form right now, orthodox product of natural selection" (12) – post-human individuals can be said to consider their bodies as being metaphorical accessories that can be easily changed and manipulated. Indeed, it is important to notice how Robin is constantly using the word "wearing" to describe others' bodies. The British writer Richard K. Morgan has also explored this ideal of considering the posthuman physical body as a mere accessory that can be worn. In fact, in his SF novel *Altered Carbon*[15] (2002) human personalities can be downloaded and stored into new bodies, which are called 'sleeves'.

On account of Robin's descriptions regarding the different alternative shapes that post-human bodies can have, characters can be divided in two different groups: the ones who wear orthohuman bodies– leading to the establishment of a clear distinction between males and females- and the ones who do not wear a prototypical Homo Sapiens

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[14] By orthohuman we mean conventionally and strictly speaking human physiology, which is characterized by an erect posture, bipedal locomotion and high manual dexterity. The human body's anatomy consists of the two legs, the torso, the two arms, the neck and the head.

[15] Morgan's novel belongs to the Takeshi Kovacs' trilogy, which is also comprised by the books *Broken Angels* (2003) and *Woken Furies*, (2005). The trilogy follows the adventures of Takeshi Kovacs, a former elite soldier that has become a private detective in a posthuman 26th century environment.

physiology. In fact, post-human individuals who are wearing orthohuman bodies define themselves using terms such as "feminine" or "masculine", which proves that, although Stross places his narrative in a 27th century environment, the binary distinction between men and women persists in post-human societies too. Nonetheless, although the post-Acceleration era could be labelled as being quite essentialist in this regard, it is important to notice how post-human aliens are not able to define themselves as being masculine or feminine unless they are wearing prototypical Homo Sapiens bodies. Accordingly, post-humans only seem to take under consideration their gendered condition once they are under the direct influence of human paradigms, both in the Glasshouse Polity and in the Invisible Republic. Consequently, it is within the bounds of possibility that the "humanity" of the post-human can only be attested if the post-human individual is aware of his or her Homo-Sapiens physiology. Interestingly, it stands to reason that in *Glasshouse,* Stross is experimenting with gender so as to challenge heterosexuality and patriarchal dominant positions.

At this stage, it is a well-known fact that Stross is using temporary transgenderism as a means to explore the post-human individual in detail and that he is masterly changing gender's conventional life cycle by allowing Robin and Kay to experience a new life whereas their respective consciences have been stored inside a body from the opposite gender. Hence, Stross is offering a genuine transformation of the gender line and *Glasshouse* can be considered as a "thought experiment", which *The Encyclopaedia of Science Fiction* defines as a "common means of exploring the implications of scientific assumptions without resorting to actual apparatus". It seems to me that Stross's is trying to convey the message that nature in itself is able to allow the transgression of gender boundaries in order to challenge and test the reader's understanding of gender. Hence, both post-human gender and temporary transgenderism

are discursive elements and resources to promote the reader's questioning of gender and post-humanity.

Robin and Kay can also be read as gender-fluid characters, as they change their gender and shift between male and female. In "Postgenderism: Beyond the Gender Binary" (2008), George Dvorsky and James Hughes explain how "the gender binary has shaped human condition, causing us to see the world through basic binary categories [...] The biological bases of the gendered condition [...] impose limits on our capacity for communication and intersubjective understanding and empathy" (2008: 2). As I see it, one of the chief motives why Stross interchanges Robin and Kay's gender is with the aim to allow them to become more sympathetic and understanding towards the other gender. It is thanks to the temporary reversal of gender roles that Robin and Kay are able to know themselves and the other's real persona thoroughly.

However, as Reeve confesses: "The ancients held deeply bizarre ideas about neuroanatomy [...] I guess it explains some of their ideas about gender segregation" (151). Reeve's usage of the word "segregation" brings up the question of whether post-human individuals are aware of the fact that, despite the gender binary is not a natural element in their society, it is an inherited cultural conception that comes directly from the influence of their human ancestors. In other words, in post-human societies the gender binary is not an inner cultural production but rather an inherited one. This makes us wonder whether Robin and Kay are aware of the artificial nature of their transgendered condition, if it should be labelled as really being a transgender experience to begin with. Nowadays, "transgender" is mostly used to define all those individuals who do not align themselves with heteronormative definitions of gender identities. Thus, "transgender" has become an umbrella term that is differently and inconsistently

used by members of the academia to often describe different realities that have nothing to do one with the other.

In this thesis, "transgender" is used "to refer to those individuals whose gender identity or expression does not conform to the social expectations for their assigned sex and birth" (Currah, Juang, Prince Minter, 2006: xiv). With this mind, there is reason to believe that the concept or the realisation of being "transgender" does not exist in in a post-human society. Incidentally, we must not forget that it is precisely the fluidity of the post-human body and its continuous manipulation what disempowers post-human individuals' temporary transgendered condition. What we are mainly concerned with here is the fact that Robin and Kay's experience should not be labelled as "transsexual", because none of them neither wish nor desire medical assistance to transition from one sex to the other. Accordingly, this is the main reason why their post-human identity in relation to temporary transgenderism should be read as a gender-fluid or genderqueer manifestation, because although they have the possibility of changing and altering their masculinity and femininity, they are not conscious of the social implications regarding gender and they do not consider their bodies as the main sources of agency to define and establish who they really are. Consequently, Stross's post-human society is certainly a post-gendered one. Consequently, there are strong reasons to believe that the innovations regarding post-human gender are precisely what also shape the limitations of post-human, as they are not aware of the different patriarchal dualist gendered patterns of behaviour that biological differences entail. This dualistic pattern is certainly latent in *Glasshouse* and it can be analysed from two different approaches –the biological and the linguistic one.

Although the post-human body is fluid and susceptible to technological manipulation, post-human individuals define and describe themselves by means of

using prototypically biological terms associated with masculinity and femininity. Therefore, post-humans also divide themselves in two groups – namely masculine and feminine individuals- according to their genitalia. As a result, this sheds lights on the future speculative evolution of the gender binary: gender roles may not be based on the contemporary unshakable relationship between biology and behaviour, and it is possible that the distinction between feminine and masculine individuals endures only in biological terms but not in social ones. Although this approach is not ground-breaking enough, post-human societies will become more democratic when it comes to the acceptance of gendered politics, as the distinction between men and women will only be based on biological differences disconnected from social assumptions. For this reason, in *Glasshouse* "no social stigma insists that the essence is fixed and must match the body, until Robin is imprisoned, and the gender binary is anachronistically enforced" (Wetzel, 2014: 177).

Subsequently, identity and personal agency may emerge as individual and not as social and prototypical defining characteristics because as Darko Suvin argues "Estrangement and Cognition" (1979), in SF narratives, alien societies are seen as "a mirror to man just as the differing country is a mirror for his world. But the mirror is not only a reflecting one, it is also a transforming one" (1979: 25). Moreover, in *Breaking Down Gender Binaries: (Trans)gender experimentation in Ursula K. Le Guin's The Left Hand of Darkness and Samuel R. Delany's Stars in My Pocket Like Grains of Sand* (2014), Stina Lande argues that

> Feminist critics argue that the existence and hierarchical nature of the binary gender opposition male/female are conditioned by heterosexuality's dominant position as the sexual norm […] A transgendered lifestyle poses a threat to the traditional family ideal because it undermines its presumed natural position […] *Consequently, experimentation involving gender identity should include a challenge to heterosexuality's dominant position alongside a manipulation of language* (2014: 2, italics added for emphasis).

Lande's argumenta emphasizes a key issue regarding gender experimentation, not only in SF but also in general terms: real experimentation in relation to gendered realities can only fully achieved given the condition that both heterosexuality and language usage are challenged. In *Glasshouse*, Stross has problems to really challenge both aspects: firstly, heterosexuality is the main sexual orientation of his characters and heterosexual relationships are neither subverted nor questioned. Accordingly, Stross's intention to play with gender innovation is overshadowed by a strong heterosexual tradition. On the other hand, as it has been previously argued, Stross is perpetually using the pronouns *he* and *she* as tools through which he can clearly establish which are the biological paradigms that define his characters. Recalling once more Monique Wittig's words, "gender is the linguistic index of the political opposition between the sexes" (1992: 17), and in Stross's language is used as a tool that establishes biological differences between male and female characters, both in the 27th century environment and in the patriarchal suburbia's recreation. Consequently, although Stross's main purpose is to subvert the gender binary within the boundaries of his post-human universe, he only does it partially.

Sadly, the former analysis attests how Stross's characters are gender-fluid from a biological perspective but not so much on social terms. In a world in which masculinity and femininity do not exist as such, gender should become a free expression not subjected to the human social paradigms that distinguish between *he - she* or *male - female*. Accordingly, this is another reason why the innovations that Stross is trying to make with regards to post-human gender are what limit post-humans. Indeed, the fact that post-humans can switch their bodies by means of using temporary transgenderism is not reason enough to deny the existence of a gendered pattern in post-human environments. Stross's post-humans are really conditioned by their human ancestors and

if it was not truth, the experiment's participants – excepting Reeve - would not accept their new social roles without questioning anything and they would not follow a strict set of social rules that they are not even able to understand. Nonetheless, the subjects' quick adaptation to the experiment proves how post-humans are simply the following step in the evolutionary chain of humankind and that human conventional characteristics are hidden at the core of their real identities.

So as to conclude, Stross's narrative regarding nonbinary gender identities leads us to claim that post-human individuals' nonbinary gender identity is only partial. The conventional heteronormativity and the linguistic weight of gendered pronouns condition Stross's characters both during the experiment and in the 27th century society to which they really belong. Hence, temporary transgenderism is only useful as a means to explore post-human identity inside the Glasshouse Polity, but not in a post-human environment.

2.2. The Philosophy of Gender-Bending: Panopticism and Imprisonment

Annalee Newitz interviewed Stross in 2008 so as to discover and decrypt how Stross had built *Glasshouse* as a narrative in which sex and gender could be read as socio-political issues:

> **AN:** In *Glasshouse*, you could have gone through the obvious route in exploring the horror of the twentieth-century gender roles by saying merely "Yuck women's roles really sucked". But instead it seemed to me that for your characters the most horrifying gender experiences were those of men (particularly Sam) dealing with masculinity. What made go this direction? Was your point that all gender roles are crappy unless they can be chosen?
>
> **CS**: *Glasshouse* isn't simply about gender; it's about how social systems of oppression emerge and become self-sustaining and self-reinforcing once you create a privileged group who benefit from enforcement roles [...] *The key conceit of the novel was the application of the Stanford Prison Study protocol to gender roles*, in a post-human society where actual physical morphology – and therefore sexual identity- is normally under voluntary control. *That's where the gender dysphoria*

and alarm and unhappiness come from: it's an explicit metaphor for imprisonment
(2008: italics added for emphasis).

Both the question and the answer are fundamental to understand the real intention that Stross had when he decided to place his post-anthropomorphic characters in the American suburbia's simulation: he was trying to put his characters against the ropes of gender politics with the intention to jeopardize and question the identity of the post-human. As it has been stated, it is only after the characters become the experiment's subjects that they are able to start questioning who they really are. In their native universe, post-humans do not have the necessity to question their inner identities in relation to their physiology or gender. Indeed, in the Invisible Republic identity is no longer a permanent essence since the infectious Curious Yellow has destroyed and deleted swaths of personal memories dealing with history and personal experiences from its victims. As Reeve writes in a letter to her future self: "Dear Self: Right now, you're wondering who you are […] who are you? And who I am? The answer to that question is that you are me and I am you, but you lack certain key memories" (141). Reeve's fears prophesize one of Stross's major concerns and worries regarding the post-human: its identity is uncertain and the post-anthropomorphic individual is mostly characterized by the intrinsic combination between a fluid physiology and a hijacked mind-set. Accordingly, these individuals cannot be aware of their identities until they become Yourdon, Fiore and Hanta's guinea pigs. In fact, as Ariel Wetzel vindicated in

Alienating Punishment: Prisons in Science Fiction (2014),

> Reeve recalls her deep, repressed memories in a dream, and realises she underwent memory incision to go under cover, she discovers that the Glasshouse is not an experiment, but a breeding project to create a new strain of Curious Yellow. She realises that she is a spy and sleeper agent, and discovers that the experimental subjects are being bred against their will (2014: 61).

In this regard, some of Stross's SF target readers argue that it is curious to see how "once Robin's backup is activated as Reeve we have no idea what becomes of the original Robin, but with all these backups and restores we don't even know whether the original Robin ever appears in this book" (Goodreads: 2015). Remarkably, gender bending and memory backups hinder and trouble the readers' process of understanding of the characters' identities. For this reason, Stross is acting as if he was a kind of conjurer and juggler that is not only playing with his characters in order to make them understand who they really are; but he is, at the same time, also intending his readers to question the basis of post-humanity and post-human identity. Stross cleverly explains that the main business of fiction is "the study of the human condition, and gender is something that many humans are obsessed with" (2008) and as Kevin Scott also argues in the *Populi Magazine* (2015), "at the same time that science fiction addresses these issues fundamental to the human race, it can be used as a pragmatic political tool […] while avoiding direct political confrontation" (2015).

The aim to avoid direct political confrontation enhances Stross's recreation of the twentieth century American suburbia as the channel through which he can examine gender role patterns without being directly involved into a contemporary socio-political confrontation. As it has been stated, he is not the first to use transgenderism in SF as a tool to explore gender issues and identity but he is certainly one of the first ones to do so acknowledging the existence of multiple theoretical approaches regarding gender and its political and social implications. On account of the fact that his exploration and questioning of gender-bending is much more outstanding and notable in the Homo Sapiens Glasshouse Polity than in the Invisible Republic, one may argue that, if "the dark ages" are a prison for its participants, gender-bending is also a means of imprisonment. Although theorists such as Butler or Halberstam have elaborated

complex gender theories in which it is made clear that gender should be read as a sociological construction, Stross goes a step further by presenting gender as a physical and psychological prison. This proves that, in this novel, Foucault's Panopticism surpasses the boundaries of physical architectural constructions. In other words, the Glasshouse Polity is not the only system of control of this novel because Stross portrays the gender binary and the post-human gender-bending process as singular panopticons in which post-humans are trapped.

What we are mainly concerned here is the new and foregrounding approach to gender that Stross is presenting in this novel. Gender becomes a metanarrative structure that allows experimentation and the characters' discovery of who they think they are. In fact, the post-human necessity of looking for and defining a clear-cut identity becomes a pathological quest enhanced by the shadows and influences of Panopticism. When it comes to analysing Reeve's quest, we must not forget that she is presented as a post-human who is wearing a male orthohuman body at the beginning of the story. Although Robin's physical description matches with that of a "very conservative body plan […] Medium-height male, dark eyes, wiry […]" (4), his mind-set is never described according to patriarchal and conservative ideas regarding gender. Indeed, Stross decides not to describe Robin according to his mental landscape because as the character recognizes and confesses "there are huge, mysterious holes in my life" (12). Robin's mind is indirectly described as being full of gaps and this is the main reason why Robin could be considered to be a vulnerable individual, full of limitations, insecurities and uncertainties regarding his persona. Consequently, if Robin does not recall who he certainly is, how does he know that he was a man before this last backup? Certainly, this question is a complex one and its answer could become an interesting further research issue.

After Robin becomes Reeve, she starts questioning the laws and the social codes that control their behaviour inside the glasshouse and she also realizes that in the pre-Acceleration era the gender binary was patronizing system used to classify people biologically and socially. Reeve finds herself trapped by her physical body and by the society that surrounds her too. Her physiology is the one that is determining which her social behaviour should be and for this reason; the orthohuman body can be analysed as a panopticon: a metaphorical building made of flesh and bones in which the individual feels him or herself trapped by the social expectations that derive from it. In the same way that she feels anxiety and a constant necessity to escape, the character of Kay/Sam also feels the same. Although Kay begins her adventure in this novel as a woman, she experiences a gender-bending process and she becomes Sam. As it happens with Robin, before Kay is inserted in the experiment's environment her description is primarily a physical one but, whereas Robin's mind is mostly a tabula rasa (he only remembers that he has an academic, a historian), Kay recalls various instances from her previous lives such as she "wanted to study ghoul society" (3) and that she "had lots of brothers, and sisters and parents […] I was a ghoul, it was one of the few things that reminded me I had an alien side" (25). Nevertheless, Kay's memories do not act as gendered signs. Consequently, Kay's femininity is solely associated to her orthohuman feminine body, neither to her mind-set nor her behaviour. After Kay becomes Sam, he metamorphoses into a different person. As Kay, she is extroverted and brave but as Sam he is Stross's introverted and shy. In fact, whereas Reeve's rebellious mind and her new femininity give her the necessary strength to fight the glasshouse's rules and its systematic and pathological control on them, Sam's new masculine identity becomes a clear reflection of how his new gendered-condition is simply imprisoning and suffocating him, not solely in physical terms but also in psychological ones.

In "The Gender Revolution: A Framework for Understanding Changing Family and Demographic Behaviour" (2015), Frances Goldscheider, Eva Bernhardt and Trude Lappegard explain that "the *first half* of the gender revolution – the dramatic rise in labor participation among women (including the mothers of small children) – resulted in a weakening of the family" (2015: 210, original italics). On account of Reeve's intention to work from the very beginning and on her rejection of maternity and the image of the nuclear family, it can be stated that Reeve could stand out as a representative of those working women that triggered the first half of the gender revolution process. Therefore, although femininity is a suffocating prison for Reeve, she is constantly trying to find paths and alternatives to subvert the rigidity and the social immobility associated to her womanhood. Nevertheless, Sam's masculinity and the glasshouse's patriarchal approach to it are panopticons in which Sam finds himself completely trapped and even kidnapped. Goldscheider, Bernhardt and Lappegard also explain "the *second half* of the gender revolution […] refers to the increased involvement of men in the private sphere of home and family" (2015: 211, original italics). Accordingly, Sam could be seen as a man belonging to this second half of the gender revolution process because his depressive mood makes him spend long hours at home and he is neither happy nor satisfied with the idea of working. Hence, Sam's attitude seems to be indirectly strengthening the nuclear family's ideal that Reeve denies and from which she seems to be running away all the time.

Accordingly, Sam is the real prisoner of this story. As Kay, she spent a long time studying the ice ghoul's societies[16], who "are prisoners of their own bodies, they grow old and fall apart, and if one of them loses a limb, they can't replace it" (31). Kay's words prove how in Stross's novel, the materiality of the body becomes an important

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[16] The closest to human paradigms because they have not reached technological Acceleration yet.

aspect to be taken under consideration, as it is the one that compromises post-humans' post-gendered identity. Again, the identity of the post-human individual is limited due to the inference of deterministic gender paradigms. In her foregrounding essay "A Cyborg Manifesto" (1984), Donna Haraway was the first author who used the concept of "post-gender" to explain the inner nature of the gendered post-human condition. Haraway wrote that, "The cyborg is a creature in a post-gender world; it has no truck with bisexuality, pre-oedipal symbiosis, unalienated labour, or other seductions to organic wholeness through a final appropriation of all the powers of the parts into a higher unity" (1984: 150). Alter, Wetzel explains how George Dvorsky and James Hughes took Haraway's idea evoking that

> At the beginning of the 21st century […] posthumanist and transhumanist discourses using technologies to intentionally transcend the limitations of the human body began to address the transcending of gender. Trans – or post-humans would at least be able to transcend the limitations of biological sex, and would eventually be able to transcend the biological altogether into cybernetic or virtual form (2014: 182).

Dvorsky and Hughes read Haraway as a "postgender theorist arguing for technological transgression to liberate both women and men from the gender binary […] and a new liberatory androgynous archetype" (2014: 183). Accordingly, post-genderism could be seen as a utopic environment in which gender is simply an accessory for the post-human individual. Nonetheless, in *Glasshouse* this gender-fluid post-human society is far from being a utopia. The traditional body building mechanism that Reeve uses to improve her physical condition is weightlifting, which links Reeve to female bodybuilders. In fact, and although it could be a trivial detail, Reeve's tendency to use weightlifting as a way to escape reality and to strengthen her body is important from a gendered perspective. In *Technologies of the Gendered Body: Reading Cyborg Women* (1996), Anne Marie

Balsamo[17] resolves that "a closer study of the popular culture of female bodybuilding reveals the artificiality of attributes of 'natural' gender identity and the malleability of the cultural ideals of gender binary, yet it also announces quite loudly the persistence with which gender and race hierarchies structure technological practices" (1996: 55).

Accordingly, the material body in which post-human individuals such as Reeve and Sam are inserted after their gender-bending process is indeed a controlling metaphor; Reeve's interest towards building is, in fact, an expression of "prisoner agency" (Kunzel, 2008: 125). Consequently, if Reeve had not felt trapped in her new female body, we would have not needed to work so as to transform her body with the aim of escaping stereotypical physiology and suburban gender roles.

In this speculative SF story, experimentation becomes a metanarrative itself. The Glasshouse polity per se would not have any meaning if its subjects were not expected to wear traditional orthohuman bodies, as they become the element through which the whole dynamics of patriarchal gender roles are activated. For this reason, the orthohuman physiology is the continent that activates the tangible and subsequence appearance of gender roles. Stross's vision with regards to the suffocating and imprisoning nature of the physical body as if it was an architectural panopticon, is certainly innovative because it implicitly guarantees the existence of a speculative wrecking ball that may be able to demolish this structure one day. Accordingly, Stross praises and enhances the reader's interpretation on the topic and invites his audience to become mental pseudo-writers of SF who could neither handle nor stop questioning both gender and the portrayal of gender paradigms in this story.

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[17] American writer who focuses on the interconnections between art, culture, gender and technology.

In sum, the persistence of a dualist pattern of gender in Glasshouse is manifested linguistically though the use of gendered personal pronouns. Thus, Stross only subverts the gender binary partially at the same time that he also presents gender as a psychological and physical prison linked to Foucault's Panopticism from which the post-human individual cannot escape. With this, Stross is presenting gender as a metanarrative structure in itself.

2.3. Reeve Returns to Being Robin: The Implications of *Glasshouse*'s ending

Another issue that is worth to comment on when dealing with the innovations of post-human gender in Stross's narrative is the ending of *Glasshouse*. Although the analysis of the novel's passing has attested that the post-human gender per se is full of limitations due its direct interference with the orthohuman binary physiology and its associated social roles and that Stross's efforts to equip and furnish the gender of his post-Acceleration individuals with certain innovations are only partially successfully achieved, the ending of the novel portrays a completely different situation. After the experiment is finally over and the post-human individuals are placed in their real natural environment again, very few things have changed regarding the lifestyle they were following during the simulation. As our protagonist explains,

> Maybe the oddest thing is how little has changed since we overthrew the scorefile dictatorship. We still have regular town meetings. We still live in small family groups, as orthohumans. Many of us even stayed with the spousal units we were assigned by Fiore and Yourdon. We dress like it's still the dark ages, and hold jobs just before, and we even have babies the primitive way (331).

It is surprising to see how, despite Stross has used the "dark ages" as a means to criticise and mock the way in which contemporary societies establish hierarchies among individual due to gender deterministic, conservative and old-fashioned ideals, the "dark

ages" become the only source that the post-human individuals of the 27th century are able to use in order to finally settle down and live a stable life. As opposed to their post-human condition – one that theoretically rejects following the human parametres of aging, physical and intellectual limitations, mortality and planetary Earthly confinement - Stross's characters decide to forge their identities according to prototypical Homo Sapiens characteristics. Hence, this becomes the main element that justifies the reason why post-human identity per se does not exist, as being a post-human implies having inherited some aspects from an antecedent human ancestor. In other words, without humans, post-humans would not exist.

The ending of *Glasshouse* does not only make general statements about which the true inner identity of plausible future post-humans will be, but it also emphasizes and strengthens the use of temporary transgenderism as a means to explore gender limitations regarding the post-human physical body. Let me exemplify this last idea by focusing on the particular cases of Reeve and Sam. After the experiment's ending, Reeve and Sam no longer exist as corporeal and bodily beings owing to their return to the original gender that they had at the beginning of the novel: Reeve is the male Robin again, Sam is the female Kay, they are married and they have a daughter, Andromeda. After the experiment has been ruined and counteracted, Robin learns that his former experience as Reeve has made him learn to appreciate the body not so much as if it was a prison, but rather as a learning experience. As he explains,

> After going through with the birth, I went back to being Robin, or as close to the original Robin as our medical ware could come up with. Natural childbirth is an experience all fathers should go through at least once in their lives (as adults, I mean), but I needed to be Robin again: the only version of me that doesn't come with innocent blood on his hands (332) [18]

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[18] Although at certain points in the narration confusion may arise, at the end of the novel Stross decides to clearly establish that our protagonist gives birth as a woman and not as a man and

Thanks to his need to become Robin again, our protagonist has learnt to consider and to appreciate things from a certain distance. It is important to recall that when he was Reeve, maternity and childbirth were seen by her as monstrosities, as natural processes linked to suffering, pain and bodily destruction. Nonetheless, once he recovers his original gender after the reversal of his temporary transgender condition, Robin is able to value natural human processes related to femininity such as maternity from a masculine perspective. As a result, this confirms that thanks to the reversal of gender roles that he has undergone, Robin has become sympathetic towards the other gender. Moreover, the fact that Reeve is able to personally pick up the reins of her life by means of deciding to become Robin again demonstrates that "she has been freed from the glasshouse of patriarchy […] From being a woman, he's learned to be more in touch with his body and enjoy organic experiences like childbirth" (Wetzel, 2014: 186).

Robin's change of attitude towards motherhood, marriage and femininity is a reverberation of the feminist ideal that motherhood and marriage should be a choice for women but never a social imposition. The Glasshouse polity was for Reeve the reflection of how patriarchal systems are destructive and totalitarian for women because as it has been previously analyzed, the feminine cohort was expected to play a very particular and specific role within the simulation that was far from being a free choice. When it comes to Sam's particular case, his return to his former feminine gender is the direct consequence of his sacrifice as Sam. Sam dies saving Reeve driven by the instinctive need to protect his wife and his future child. After his death, Sam reborns as a female clone from her last male body and he becomes Kay again. Accordingly,

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that it is only after she has given birth to her child that she decided to become Robin, the man, again.

Reeve's willingness and personal decision to become her former persona again is not seen in Sam, despite it is true that – as happens with Reeve- during the whole experiment he is not happy with the gendered role that it is imposed on him.

Interestingly, it is important to notice how the major weight of the story's ending is based on Robin's opinions. Apparently, it may be perceived neither as an outstanding nor as a noticeable fact that needs to be taken into account because Robin is the narrator of this story. Nonetheless, and although this claim may sound rather more as an speculation, I firmly believe that in the same way that Sam's portrayal during the experiment can be considered as a direct criticism against patriarchal and hegemonic masculinity, Reeve/Robin's forefront position at the end of Glasshouse suggest that, especially at the end, Stross is intending to make a point in femininity: whereas the masculine body – despite its artificial and imprisoning nature- is what really empowers men during the experiment, the feminine body becomes a claustrophobic cage that really disempowers the feminine cohort in the Glasshouse polity but that, conversely, becomes the only possible solution that helps and enhances Robin's understanding of who he really is.

Finally, and although it has been formerly argued that Reeve and Sam do not longer exist as bodily entities at the end of the story, it is important to realize how one of the main reasons why Robin and Kay decide to continue living by means of wearing orthohuman bodies and following human traditional conventions is based on their remembrance of their former experience as Mr. and Ms. Brown because as Robin declares "there's a difference between not remembering and deliberately forgetting" (332), and now they are free post-human aliens with agency ready to start the quest of hammering out both their lives and their identities.

All things considered, the ending of the novel proves how the post-human identity per se does not exist because being a post-human implies having human ancestors from which post-humans have inherited inner characteristics. Moreover, and although the ending is quite essentialist because Reeve and Sam return to their original gender, it emphasizes that Stross's use of temporary transgenderism also aims to explore the physical limitations of the post-human body. In the end, Robin and Kay are able to consider the experiment not as a punishment, but as a learning process thanks to which they are able to understand who they are because they are now more sympathetic towards the other gender.

3. Conclusions and Further Research

This dissertation has intended to analyse and establish the limits of the post-human individual identity in Charles Stross's well-known science fiction novel *Glasshouse* (2006). As early as 1893, H.G Wells in his foregrounding article "The Man of the Year Million", prophesized the rise of a post-human identity forged by the effects of evolutionary, technological and artificial progress. Post-Humanism is an international and scientific movement that seeks to technologically transform both the human intellect and physiology and to study the quiescent favours and detriments of extending and transgressing humans' natural conditions. Nevertheless, Post-Humanism is a debatable subject and some scholars such as Katherine N. Hayles in *How We Became Posthuman* (1999) and Neil Badmington in his article "Theorizing Posthumanism" (2003), have criticized the apocalyptic tone of the most extreme transhumanist discourse regarding humanity because "Posthumanism needs above all to reconsider the ultimately celebration of the absolute end of "Man"" (Badmington, 2013: 10).

As the semantic analysis of the word "glasshouse" has indicated, in the context of Stross's novel this concept makes reference to a military and high-security prison for war criminals and whose historical inspirational sources need to be found in the British Military Prison of Aldershot, in the Stanford Prison study and in Foucault's Panopticism because as Stross ensures that his intention is to "take the Stanford Prison Study protocol and apply it to gender roles among a bunch of posthumans [...] as a way of interrogating the assumptions and stupidities we take for granted" (blog: 2013).

By offering a contraposition between a patriarchal suburban society and a post-human futuristic environment, *Glasshouse* presents a double transgender experience based on the reversal of the gender binary that starts without Robin and Kay's explicit consent thanks to which Robin and Kay can explore their own limitations as post-human beings and to reassert their own identities, as in the end, which is – nonetheless - quite essentialist - Robin decides to recuperate his original gender and Kay reborns as a female clone of his former masculine Sam's body. In fact, this novel shows how the only way for post-humans to reassert their identities is in relation to "classical" Homo Sapiens paradigms and environments.

Firstly, the limitations of post-humans' identity regarding gender essentialism (the ideal that men and women are biologically and neurologically different) in Stross's narrative have been analysed. In *Glasshouse* gender essentialism is firstly noticeable at a linguistic layer, as Stross uses the gendered personal pronouns *he – she* to define his characters. Moreover, Stross decides to use temporary transgenderism as the means through which his characters are inserted in a Homo Sapiens reality based on the patriarchal survival of the gender binary as a socio-political defining element of the individual. This shows a certain degree of post-human awareness regarding the existence of a previous Homo Sapiens culture.

The Glasshouse polity emphasizes the nuclear family as a heteromorphic structure based on clear-cut biological distinctions between men and women. For post-humans, gender is simply based on the persistence of certain inherited human biological traits that classify individuals in male and female but not on the interconnection between biology and social behaviour. Conclusively, in a post-human environment, the notions of the gender binary and transgenderism do not exist per se. Thus, the reading of the characters from a transgender perspective can only be activated once these post-human individuals are inserted in the Glasshouse Polity.

American suburbia becomes the main scenario in which Stross develops and assesses the post-human individual regarding gendered behaviour, as it aims to "inculcate this weird gender-deterministic role play" (71) in which women's identity is overshadowed by their dependency from men. Nonetheless, the patriarchal model of masculinity that the masculine cohort is embodying is not natural but artificial, being artificiality the one that justifies the limitations of the post-human identity with regards to masculinity. When it comes to the analysis of the feminine cohort, Stross focuses his attention on the physical description of women to emphasise how in the Glasshouse polity the gender binary is based on essentialism and not on constructivism. Despite the outstanding physical differences, female characters are mostly differentiated by their psyche and their attitude towards the experiment. Whereas Jen and Angel are presented as conformist women whose controlling attitude leads to a kind of internal surveillance that links them directly to Panopticism, Reeve and Cass are constantly being criticised. Cass is considered as a woman who has not adapted and who exaggerates the abusive attitude of her husband and Reeve is seen as being directly outside the Glasshouse system and the cohort itself.

The second section of this thesis has intended to analyse *Glasshouse* from the its innovations regarding gender, which are speculative, as we cannot be sure about the changes that gender politics will undergo in the following centuries. Firstly, the role that nonbinary gender identities, play in Stross's narrative has been analysed. Although *Glasshouse* provides the reader with a post-human 27th century "what if" scenario in which individuals can have any body shape, Robin and Kay are physically described as wearing orthohuman conventional bodies because post-human gender is directly infused by the essence of humanity in itself and post-humans take under consideration their gendered condition once they are under the direct influence of human paradigms.

As it has been attested, and although it seems that bodies are the essential elements that guarantee the assertion of post-human identities, it stands to reason that *Glasshouse* is experimenting with gender so as to challenge heterosexuality and patriarchal dominant positions. Stross is using temporary transgenderism with the aim to explore the post-human individual in detail, which turns *Glasshouse* into a "thought experiment" that is genuinely transforming the gender line. Robin and Kay can be read as genderfluid characters and, Stross's chief motive to activate this process is to allow them to become more sympathetic and understanding with the other gender. In fact, there is no reason to believe that the concept of being "transgender" as such exists in a post-human society because it is precisely the fluidity and the constant manipulation of the post-human body as a routine without social or psychological implications the one that disempowers the consideration of post-humans as being transgender individuals or transsexuals, because none of them nor wish nor consciously desire medical assistance to transition from one sex to the other. Therefore, Robin and Kay should not be read as transgender individuals because despite having the possibility of changing their physiology, they are not conscious about the social gendered implications and they do

not see their bodies as the main source that defines who they really are. Accordingly, the innovations regarding temporary transgenderism that Stross's is presenting in *Glasshouse* are what also shape the limitations of the post-human identity per se.

Also, the persistence of a dualist pattern of gender in *Glasshouse* is manifested linguistically. Stross seems to have major trouble to stop using the gendered pronouns *he* and *she*, which proves that language becomes a tool that clearly establishes biological differences between male and female post-human characters too. Thus, Stross only subverts the gender binary partially and this proves how the innovations that Stross is trying to apply in his depiction of post-human gender are limiting post-human individuals.

Furthermore, Stross presents gender not only as a psychological prison but also as a physical one, as he constructs both the gender binary and the post-human gender-bending process as singular panopticons where the post-human individual is trapped. In this sense, Stross has built up a new and foregrounding approach to gender, as gender becomes a metanarrative structure in itself because inside the Glasshouse polity, Reeve and Sam understand and read their new gendered-bodies as suffocating prisons.

After the experiment is over, post-humans decide to forge their identity according to prototypical human living conditions, proving that the post-human identity per se does not exist because being a post-human implies having inherited some aspects from an antecedent human ancestor. Moreover, the last pages of the novel also emphasise Stross's usage of temporary transgenderism as a tool to explore gender limitations with regards to the physicality of the post-human body. With the experiment's ending, Reeve and Sam do not longer exist as corporeal beings and in both cases, they have learnt to read their bodies not as prisons but as learning tools. Indeed, it seems that Reeve / Robin's forefront position at the end of the novel is a mechanism

through which Stross is trying to show that whereas the masculine body is what really empowers men during the experiment, the feminine body becomes a cage that traps women in the Glasshouse Polity but that ironically, becomes the only element that enhances Robin's understanding regarding his real persona.

Last but not least, it would be interesting to do some further research on the differences that may arise between the depictions of post-human gender in Stross's *Glasshouse* and Ursula K. Le Guin's *The Left Hand of Darkness* regarding the use of transgenderism and gender fluidity. In addition, it would also be interesting to extend the comparison of Stross's *Glasshouse* with cultural discourses that go beyond the literary realm. In fact, nice parallelisms could be drawn between *Glasshouse* and HBO's TV Series *Westworld*, created by Jonathan Nolan and Lisa Joy. The story takes place in a fictional and high-tech Wild-West theme park inhabited by the "hosts" – a group of android robots who imitate humankind, both in behavioural and physiological terms – and visited by the "guests", humans to visit the park with the aim to indulge their wildest fantasies and who are not afraid of the "hosts", who have been programmed not to harm humans. It would be interesting to draw parallelisms between Stross's novel and HBO's production, as Westworld could also been as a kind of glasshouse in which the "hosts", as it happens with Stross's post-humans in the Glasshouse polity, feel themselves trapped and manipulated living a fictional and narrated lives that do not depend on them.

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