Technological Regulations in the World of *Autonomous*

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The paper explores the influence exerted by technology at the individual and societal level, discernible in the novel *Autonomous*, authored by Annalee Newitz. *Autonomous* features a technologically advanced society comprising robots and humans who live together in relative harmony. While technology is present throughout the narrative fabric of the novel, its depiction is not just limited to an accessory but as an extension of a person. Individuals connect to the world around them with the help of technology, making it responsible for the formation of individual subjectivity. There is an impact on society as well, resulting in a curious, paradoxical mix of posthumanism, transhumanism and humanism. This paper explores the aforementioned aspects using the concepts of micro and macro perception of the technological medium as described by Richard S. Lewis in his book *Technology, Media Literacy, and the Human Subject: A Posthuman Approach*. Based on the two approaches, the paper aims to determine the role played by technology in the constitution of a subject and how it shapes the culture of the society depicted in the novel.

Keywords: Posthumanism, transhumanism, embedded technology, subjectivity, capitalism, humanism, indenture

Annalee Newtiz's *Autonomous* is set in 22nd century Canada, where humans live and work alongside robots that are composed either entirely of metal or a combination of biological and

metal parts. In a world where artificial intelligence and robots are commonplace, the citizens embrace technology quite willingly, especially in ways that are closely connected to their bodies. Consequently, this gives technology the ability to shape subjectivity. Additionally, as technology becomes an indispensable part of life, it gains the ability to exert influence on many spheres of society, such as politics, economy, health services and the environment. For example, the economic system practised by the Federal Government in *Autonomous* is monopoly capitalism, and many technological gadgets are used as tools for enforcing this system. Much of the wearable technology that people readily adopt, such as "ear clips, goggles, perimeters, implants and specialised invisible devices" (Newitz, 2017, p. 109), are capable of recording oddities and are also connected by a network, which would make it possible for any government agency to gather information through surveillance. Furthermore, the pharmaceutical industry, presiding over much of the health sector, makes use of powerful and secretive technology to manufacture drugs that endow consumers with better bodies and lengthier lifespans, which are requirements for obtaining better-paid jobs. Another sector closely regulated by technology is the indenture system, where people are contractually obligated to provide their labour to the corporation they sign up for.

This paper proposes that technology regulates the individual and society in *Autonomous*. The dual attributes shall be explored using the approaches of micro and macro perspectives stated by Richard S. Lewis in his book *Technology, Media Literacy, and the Human Subject: A Posthuman Approach*. Lewis uses these two terms while discussing individual and cultural relations to the medium of technology. According to Lewis, the microperceptual approach "focuses on the embodied and embedded perspective of a human subject. In contrast, the macroperceptual approach focuses on the broader socio-cultural context that the particular human subject exists within'' (Lewis, 2021, p. 10).

Lewis applies postphenomenology at the micro level and media ecology at the macro level to understand the relationship between humans and technological objects. Postphenomenology is a particular

approach in the philosophy of technology that helps investigate the mediating relations between humans and technology. It focuses on the embodied and embedded perspective of human beings, thereby helping to understand the mediating role of technology. Therefore, the domain of postphenomenology aligns with Rosi Braidotti's proposition that "posthuman subjects are technologically mediated" (Braidotti, 2013, p. 57). The human subject that Lewis describes is indeed posthuman, reflecting the intricate interrelationship between technology and the individual. Media ecology, on the other hand, helps deepen awareness about the manner in which different types of (technological) mediums shape and regulate cultures (p. 56). Using the above theories, the novel *Autonomous* can be regarded as a great directive tool for helping readers navigate through the complexities of technological relations in a rapidly changing posthuman world.

The point of view in *Autonomous* shifts between the two protagonists Jack Chen and Paladin. Jack Chen is a genetic engineer who makes generic versions of patented drugs to increase their availability to the general public. Her generic version of the latest productivity enhancer drug 'Zacuity' ends up being addictive and causes fatal deaths. This is because the original drug itself had addictive components and is illegal with the current patent laws. The patent system in *Autonomous* is different from what exists today. In patent systems today, inventors receive temporary monopolies to produce, sell or license their inventions, but detailed information about the invention is also disclosed to the public. That way, inventors can build on and improve the patented information. However, in the novel, inventors retain perpetual patent monopolies while withholding specific details. This means that the drug companies can continue to make patented drugs and charge inflated prices for years and years but anyone who figures out how to make a generic version of the drug is breaking the law.

Therefore, genetic engineers like Jack are deemed 'pirates' and she is blamed for the deaths caused by Zacuity overdoses. Jack is pursued by Eliasz and Paladin, two government agents who are part of a body called the IPC, responsible for maintaining patent law. Paladin is a military grade robot who works under the service system

of indenture that is practised widely in the country. Robots like Paladin are sent on missions after a period of training and Eliasz is assigned as his partner for this particular mission.

Furthermore, in addition to the patent system, another system, called the Franchise exists. Franchise is a sort of citizenship package available for people to purchase. This is a requirement to own property, work jobs, go to school or even move to different cities. Your family purchases a franchise for the type of work you would like to do, for example if you desire to start a farm, you buy an agricultural franchise. It is when your family is unable to afford it that your children would get indentured to various corporations.

Microperception

The microperceptual approach focuses on the embodied and embedded perspective of a human subject. In this approach, Lewis uses the field of postphenomenology in particular, to explore "the micro level of the embedded and embodied human subject" (p. 10). In postphenomenology, the core concept of technological mediation is encapsulated in the formula, 'I-technology-world' (Ihde, 1990; Rosenberger & Verbeek, 2015, as cited in Lewis, p. 61). Instead of taking the term mediation to mean "the in-between role that technology performs between a person and the world" (Van Den Eede, 2011, as cited in Lewis, p. 61), it is more advisable to "understand that both subject and world (as well as the specific technology) are constituted through the mediating role of the technology" (Lewis, p. 61).

Lewis also discusses four categories of technological relations in order to better explain the 'I-technology-world' formula: "embodied (where we perceive the world, through the technology, such as with eyeglasses); hermeneutic (where we read the technology to better understand the world, such as with a thermometer); alterity (where we interact with the technology as a quasi-other, such as with an ATM machine); and background (which affect us but mostly go unnoticed, such as a heating and cooling system for one's house)" (p. 11). Postphenomenology is proficient at examining the microperceptions individuals encounter during their interactions with the technologies present in their daily lives (p. 11). The sections that

follow will also examine instances in the novel which correspond to the four technological categories given by Lewis.

Embedded Technology

Embedded technology is one of the most apparent elements in the novel that comes within the purview of microperception. Many characters in *Autonomous* are enhanced with various types of "embedded technology", a term used by Lewis (2021) to describe wearable technology that has a "brain to machine interface" (p. 89). The perimeter is the most widely used example of this type of technology in the novel. It is an invisible network of nanowires merged with sensory nerves just below the surface of the skin. It is made of bio-glass wires; it can be powered up, switched off, removed before sleep or during injury and even be destroyed. Apart from this, the perimeter system has the quality of receiving and sending messages, reading data and setting alarms for waking up, much like how smartphones are used these days.

When Jack senses an intruder in her ship, she powers up her perimeter and heads in the direction of the sound. On finding the thief, she throws a knife straight at his neck, not without realising that there was "no time to consider a nonlethal option". The weapon, "aided by an algorithm for recognizing body parts" lodges itself in the trachea, thereby killing the thief (p. 11). Jack has to think quickly to avoid further danger from the thief and promptly commits murder. Therefore, in the beginning of the novel itself, embedded/wearable technology is presented as something that contributes to the wearer's safety.

In addition, it aids Jack in living her life of hiding. She has to live a life of subterfuge on account of her being a 'pirate' (her activist job involves making generic versions of expensive patented drugs, which is a crime in the capitalist Federation government). She is heavily reliant on technology to keep herself hidden from the law. Although her perimeter is nowhere near the military complexity of Eliasz's, it still provides her with information necessary for making survival plans. The knife she wears on her belt is not just a weapon but is also a device for routing "all her communication through an anonymizing network that stretched across the Earth and through at least two

research facilities on the moon", which makes it difficult to trace her whereabouts (p. 101).

The IPC agent Eliasz is another character whose perimeter system readers are introduced to. It is an integral part of his existence, evident in the manner he automatically touches his "forehead, shoulders and belt to verify his perimeter and its local network of weapons" (p. 27)**.** Incidentally, he feels like he is crossing himself whenever he does that. This action signals ritualistic undertones, revealing his expectations of safety and security from the perimeter system. It is almost always a part of him and is disabled only during rest or injury. It is capable of defending him against attacks and can in fact be considered an elaborate shield and weapon system for him. When Jack kicks his head in the final encounter between them, Eliasz's perimeter delivers a "powerful electric shock", so powerful that it ends up partly melting the soles of her shoes (p. 213).

Along with the perimeter, several other technologies are openly embraced in the world of *Autonomous*. When Eliasz and Paladin are scouting the African Federation for clues regarding the whereabouts of Jack, they come across many people using "ear clips, goggles, perimeters, implants, and specialised, invisible devices", a testament to the ubiquitous nature of technology for the characters in this novel (p. 109). All of these wearable technologies correspond to the category of 'embodied relation', where users perceive and interact with the world using the technology. By wearing the perimeter, the user's "perception of the world is mediated and transformed, both in an enabling way" (by providing information and protection from enemies) "and a constraining way" (the perimeter needs to be taken care of; it can be destroyed) (Lewis, p. 62).

The user's subjectivity is shaped according to the rules fixed in these technologies. Both Eliasz and Jack use the perimeter to defend themselves and keep their surroundings safe. Neither of them thinks of non-lethal options when it comes to disarming an opponent. Their perimeters are used to generate safety and protection, and this guides their subjectivity along the lines of a strict individualism. Therefore, the perimeter can be regarded less as an accessory and more as a

part of the body even though it can be removed. In the final encounter between Jack and Eliasz, Jack's friends arrive heroically on the scene and end up shooting Eliasz and Paladin with a kind of goopy sticky virus containing substance that causes hair to sprout up in the affected area. This leads to Eliasz's perimeter being destroyed while Paladin ends up losing the brain embedded in his[1] core. In the aftermath of the event, the robot muses that both of them had "lost parts of themselves" (p. 225).

So far, most of the functions of the perimeter appear to be under the control of the user. However, there are instances where this system exhibits behaviour beyond user control. When Paladin goes through his first training mission, his arm gets blown off as part of a test. It results in a lot of pain and the severed arm is still "broadcasting its status" with a "short-range signal" (p. 15). Paladin realises that he would have to kill his perimeter network to silence the arm, but doing so would render him very defenceless. Neither choice is appealing and he is "stuck feeling a torment that echoed between the inside and outside of his body" (p. 15). The bot also reads Eliasz's perimeter to infer that the latter may be attracted to him. The neural connections of Eliasz's perimeter help Paladin to read and note the changes in his persona, giving him the idea that Eliasz may be attracted to him.

Indenture

Indenture is the second element in the novel that can be studied under microperspective. Indenture is defined as a "period of service" (p. 26) mostly intended for bots because it is necessary to make worthwhile the investment that went into their manufacture. Incidentally, several humans, too, are subjected to this system of slavery, especially if their families happen to be poor. The difference between indenture for bots and humans is that it is easier for the former to earn their way out of ownership after many years. This section will explore how technology comes to have an impact on the indentured characters named Threezed and Paladin.

Threezed is one among the intruders that Jack catches red handed in her ship. He is introduced in the novel when Jack encounters him and his owner stealing drugs from her submarine. At first sight,

she actually thinks he is a bio-bot (a robot with biological parts manufactured to resemble a human) shoddily put together, with him looking beaten up and bloody in places. It is only later that she realises he is fully human. She takes pity on him, especially after having killed his owner in front of him. She bemoans the fact he is human because if he was a damaged bot, she would have the means to fix him, but fixing the "wrecked cognition" of an indentured human was not a task she could take on (p. 22).

Technology is used to regulate and monitor the practice of indenture. This is achieved through a tracker[2]. Most indentured humans are fitted with a tracker, which serves the purpose of tracking them in case they decide to run away or go missing. Jack kills Threezed's tag because she cannot risk getting caught, especially after she murdered his owner. On hearing this, he actually gets angry because the tracker is something he has lived with his whole life. Being deprived of this component suggests he must now explore and establish a new identity for himself, something he is not ready for. When it comes to his identity itself, Threezed's sardonic personality and sarcastic sense of humour are a response to the trauma he has been subjected to throughout his life. Jack goes as far as describing it as his perimeter weapon, because of how important it must have been for maintaining his sanity over the years.

Threezed also used to maintain an online journal to document his thoughts and changing circumstances. The journal is titled *Slaveboy* and the feed contained posts that detailed the cruelties of his indentured life. Threezed was initially contracted to a school and had been pursuing an education, but when the school went bankrupt, his contract was sold to a mechanical engineering shop that specialised in turbines. In one of his early posts, he writes:

> Somehow, through a legal loophole I don't understand, my contract has been reset to the state it was in when I was first indentured. I will work here until I'm 24, and I have two jobs. The first is to learn about engine design, which is so far all about transduction—the transformation of one kind of energy into another. And the second is, apparently, fucking. That's right. My supervisor has made me a man. If the school hadn't gone broke, I'd still be trading

> dinner for a public terminal. Now it's blowjobs for a mobile and a private net connection. It's not such a bad deal, and at least I get to eat dinner every night. (p. 188)

The trauma resulting from indenture changes Threezed and the way he sees technology. Technology becomes a way for him to document proof of the indenture laws being violated. This is discernible in the experience of Threezed. Once the initial shock and fear at the murder of his owner dissipates, he gets comfortable with Jack, constantly flirting and trying to charm her. She conjectures that the charm and coquettish nature of his behaviour was most probably part of his training.

The emphasis his training must have had on the physical aspect of his body is evident in the services he offers her, which are always physical in nature, whether it is offering to clean and repair the submarine or making sexual overtures to her. He thinks his body is the only thing he has to offer. Indenture is thus, not just about shaping a personality for the type of service offered but is also about erasing whatever previous identity the person may have had. There is in fact an entry in the *Slaveboy* journal where he says, "he's like a bot because he doesn't remember anything before indenture" (p. 182). His very name is derived from the last two letters branded into his neck, further solidifying his status as a slave. However, despite suffering unalterable damage to his psyche, he chooses to employ the strategy of testimony to reveal the reality of indenture for humans.

Paladin is another character subjected to the practice. Technology plays a much deeper role in his subjectivity than in the case of Threezed because the bot undergoes a technological birth process as part of their manufacture. His very existence is thus generated by technology. A bot manufactured for any purpose, whether military or commercial, would work for ten years according to international law. Although the law mandates ten years, the Federation "interpreted the law fairly liberally" (p. 26). It was probable that Paladin would have to wait twenty years before finally getting autonomy. He realises:

> More likely, he would die before ever getting it. But he wanted to survive—that urge was part of his programming. It was what

> defined him as human-equivalent and therefore deserving autonomy. The bot had no choice but to fight for his life. Still, to Paladin, it didn't feel like a lack of choice. It felt like hope. (p. 26)

Technology also occupies the role of a double-edged sword when it comes to this bot character because, while he relies on it plenty to regulate his actions and navigate through the world, it may not always provide him with the information necessary to understand human behaviour. There is always a limit to what he can achieve with technology, despite being moulded by it. During a training session, when he first realises that Eliasz may be attracted to him, he searches for information about sexual relationships between military bots and humans on the internet. He yields no useful information and realises he has to figure it out on his own.

Newitz's representation of indenture can also be interpreted in terms of Foucualt's concept of biopower. In his book *History of Sexuality Vol.1* (Foucault, 1998), Foucault defines his theory of biopower as "an explosion of numerous and diverse techniques for achieving the subjugation of bodies and the control of populations" (p. 140). The control and regulation are specially targeted towards the biological and social aspects of a population. Based on this definition, indenture evidently functions as a system for controlling bodies. It is designed to control the economic output of the population (whether robots or humans), and technology is simply the tool used for enforcing it. Biopower functions through surveillance, normalisation and the regulation of bodies to optimise economic productivity. Similarly, indenture uses trackers for surveillance, laws to regulate the system, while normalising it through repeated practice.

Robots like Paladin occupy a significant position in the capitalist economy of the Federation. They are necessary for driving economic growth and are solely generated for fulfilling this duty. Their programming instils a strong sense of duty and loyalty towards the Federation which makes it compulsory for them to devote themselves to work. In accordance with this, one is reminded of the distinction Foucault made between two forms of biopower: sovereign power, which focuses on the right to take life or let live, and disciplinary power, which regulates and shapes life processes. The practice of

indenture exhibits strains of both forms of biopower, because it manufactures life and regulates it. Simultaneously, the prospect of autonomy is presented as an incentive to robots, to give them hope, as visible from Paladin's example. The title of the novel *Autonomous*, in fact, refers to the status that Paladin and most other beings in the novel, whether robots or humans are aspiring towards.

Indenture works to ensure that any indentured being (robot or human) has little option but to continue being a part of the structure dictated by the government. Robots are forced to participate in the narrative of generating a secure workforce for big corporations and unsurprisingly so, they have no say in how their bodies may be used or manipulated. This is observable in a conversation between Paladin and Fang, a fellow bot. Paladin asks how long Fang's period of indenture has been, who replies by showing him a slideshow of reports that gives seven years as the answer. But it turns out that Fang had not stayed in one single shape/form throughout the years:

> "What happened to all of your bodies?"
>
> "The Federation always needs specialized morphologies. It's easier to port an existing bot into a new body than make a new one."
>
> "You'll see. Don't get too attached to that body - sooner or later, they'll change it." (p. 166)

Macroperspective

The macroperceptual approach emphasises the wider sociocultural context in which the individual human subject is situated. This approach is used to understand how technology influences cultural relations and society. Lewis uses the theory of media ecology to further explain this approach. Media ecology "is a macro approach that describes media environments", and typically entails inquiries into the overarching impacts of media on cultures and societies (Lewis, p. 11). Marshall McLuhan (1994) is commonly linked with media ecology, as he persistently endeavoured to draw society's attention towards the concealed influence of the medium that moulded the content of media. His renowned aphorism, "The medium is the message" (Lewis, p. 7), exemplifies this effort. He frequently elucidated this concept using the figure/ground analogy, where individuals typically focus on

the figure (in this case, the content of media), while overlooking the ground (in this case, the medium) (Lewis, p.12).

The macroperspective analysis of *Autonomous* will focus on how transhumanism, posthumanism and humanism exist side by side in this society. The possibility of all three doctrines or systems of thought appearing within a single fictional world might sound absurd to readers but should not come as a surprise since these doctrines happen to be connected to each other. Transhumanism is a "reinforcement" of humanism, while posthumanism critiques the "crisis of humanism" (Ranisch & Sorgner 2014). Transhumanism seeks to overcome the intellectual and physical barriers of humans while posthumanism wants to overcome humanism (Jansen et al., 2021).

Transhumanism

Proponents of the movement of transhumanism advocate for the "continuation and acceleration of intelligent life beyond its currently human form and human limitations by means of science and technology" (More, 2005). They believe that the human condition ought to be improved with the help of technology in order to upgrade longevity and intelligence. According to their beliefs, a posthuman should possess the ability to:

…reach intellectual heights as far above any current human genius as humans are above other primates; to be resistant to disease and impervious to aging; to have unlimited youth and vigor; to exercise control over their own desires, moods and mental states; to be able to avoid feeling tired, hateful, or irritated about petty things; to have an increased capacity for pleasure, love, artistic appreciation, and serenity; to experience novel states of consciousness that current human brains cannot access. ("Transhumanist FAQ")

A few characteristics in the novel point to an allegiance with the transhumanist thinking described above. Firstly, the use of various technological apparatus and gadgets, such as the embedded technology discussed under microperception, align with the transhumanist agenda. Perimeters, implants and other invisible devices are often merged with the body, resulting in a significant number of people becoming technologically enhanced and augmented. Such humans in the novel

would be described as posthuman beings in transhumanist thought. This definition of posthuman also includes Artificial Intelligence.

Secondly, the utilisation of big pharma drugs for a multitude of purposes. The very drug at the centre of the story is Zacuity, which is a pill that goes "deep into the reward centre and gives the user a massive dopamine rush" (Newitz, p. 87). The company that manufactured it, Zaxy, had previously come out with other work enhancement drugs, all marketed under names such as Smartifex, Brillicent and others. There also exist drugs to lengthen lifespan, stabilise mood, prevent diseases and stimulants that amplify sensations. This shows a clear inclination towards the Enlightenment notions of reason, rationality and intelligence, which transhumanism sees as ideals worth achieving, along with the ability to overcome the weaknesses of the human mind. Thirdly, transhumanism is not concerned with equality of resource distribution. Only the rich are able to afford the expensive drugs in *Autonomous*, which help them get better jobs while the poor pass down poverty and unhealthy bodies to the next generation.

Posthumanism and Humanism

Posthumanism, in all its variations (cultural, critical, philosophical to name a few) is conscious of the need to bring an end to humanism and promotes a way of being that accommodates multiple entities. With its origins in feminism, inclusivity plays an important role in this theory. With this in mind, it grants agency to non-human objects. Unlike transhumanism which prioritises technological enhancement of humanity, posthumanism champions for a changed understanding of human identity. There are two characters in the novel who are posthumanist in their own ways - Jack Chen and the robot Paladin. As a genetic engineer, Jack's decision to come up with her program of 'reverse engineering' is crucial in situating her as a posthuman figure. With the help of her friend Krish, she realises that the patent system was "at the root of a lot of social problems. Only people with money could benefit from new medicine" (p. 42). The poor on the other hand, "couldn't keep their minds sharp enough to work the good jobs and didn't generally live beyond a hundred" (p. 42). Her interaction with Krish thus inspires her to reform the patent system by inventing

the program of reverse engineering, which makes it possible for an ordinary citizen to manufacture a generic version of a patented drug.

For the character Paladin, his openness and ability to change are what make him posthuman. When his internet searches on human-robot relationships leave him confused and with no clear answers, he accepts that there is a gap between what the internet says and his own experience with Eliasz. He understands that he must learn to extend and create a new self beyond the descriptions of society and remake his world. He may be a robot manufactured to work for the IPC but it is evident that his interaction with Eliasz builds and amplifies his consciousness. When Paladin manages to do well on an intel gathering exercise that Eliasz had given him, the bot actually "felt a flash of something that went beyond the usual programmed pleasure at completing a task and pleasing Eliasz. He was having fun" (p. 111).

After interacting with Eliasz and realising a mutual attraction, he also becomes aware of the importance of gender for humans:

> From endlessly researching the word "faggot," and finally reaching an approximate understanding, Paladin knew that human gender was part of sexual desire. But he was starting to perceive that gender was a way of seeing the world, too. (p. 138)

Hence, he goes on a quest to figure out the origins of the brain embedded in his core. When he finds out that the brain belonged to a dead female soldier, the bot assumes the female gender for the sake of Eliasz. Admittedly, he is acquiescing to his handler's anthropomorphizing but the bot still manages to work through complicated emotions to arrive at a newer and better understanding of his being.

The government also promotes posthumanism by granting indenture rights for robots. Even though they are programmed to be loyal and dedicated to labour, it is worth noting that the government at least sees them as entities worthy of having rights. However, despite having elements of posthumanism, humanism still maintains a hold on this society. While walking through Aberdeen Centre (a large bot-controlled marketplace) for an assignment, Paladin sees a display banner saying "For bots, industry always precedes autonomy" (p. 168). A declaration of this nature underscores how bots will always

be perceived in the market-driven world of *Autonomous*. Even with rights and the provision to gain autonomy, their labour must consistently take precedence over other desires they may have.

One of the leading principles of humanism is positing nature and culture against each other. In essence, humanity's ability to triumph over nature or tame it has always been celebrated as something to be proud of. This is conspicuously evident in the way the pharmaceutical industry operates when it comes to the production of work drugs like Zacuity. This drug enhances productivity and helps workers enjoy work, no matter how tedious or boring it may be. But this comes with the side effect of reduction in the "number of dopamine receptors on the neurons in the midbrain and prefrontal cortex" which eventually "interferes with decision-making and makes the brain extremely vulnerable to addiction" (p. 87). Thus, a man-made product having the capacity to make significant alterations to the natural state of an organ in the body, manages to wreak havoc and endanger several lives.

The affirmation of binaries is another facet of humanism. Several characters in the novel end up enacting this through their actions. Their actions or choices are always this or that, with both options being such stark contrasts to one another. There is no attempt to navigate a middle ground. For example, when Jack has to choose between a career in doing patents for startups or being a pirate (someone who fights big pharma by making generic versions of expensive drugs), she chooses the latter, clearly evading the greater moral-ethical picture. However, all blame cannot be placed on Jack alone because the value system driving the society and economy in *Autonomous* is mostly based on humanism, thereby making her own actions prone to its influence.

Conclusion

The study establishes that the approaches of micro and macro perspectives are essential in understanding the effects of the technological medium on individual subjects and the culture. Richard Lewis's convictions establish that an intertwined approach helps in understanding the manner in which technology affects the individual and society. Both perspectives insist on relationality "as a means to

understand how we are constituted and transformed by the technological relations in our lives" (Lewis, p. 10). Technologies like the perimeter network end up becoming a part of the user's subjectivity because they are crucial in influencing the ethical and moral position of a character. Indenture relates to embodiment as it emphasises the labour potential of a body. Threezed and Paladin recognise that serving a master is essential for survival, which shapes their subjectivity around servitude. When Jack frees Threezed from his former master, he sees new possibilities for his life. Likewise, when Eliasz liberates Paladin, she experiences privacy for the first time, achievable only when freed from corporate control over her programming.

The macroperspective analysis shows that the society in *Autonomous* blends elements of transhumanism, posthumanism, and humanism. Transhumanism aims to enhance human life through technology but often favours the privileged, leading to unequal access to resources, like expensive pharmaceuticals. This economic disparity results in many being vulnerable to indenture, perpetuating poverty across generations. Humanism is evident in the prioritisation of culture over nature and affirmation of binaries, deeply rooted in capitalist systems like the indenture and patent systems. The characters, like Jack Chen, Paladin, and Eliasz embody traces of posthumanism, driving forward change despite their individualistic tendencies.

Footnotes

1. This paper uses the pronouns he/him/his for the robot Paladin because these are the pronouns used by the author in the first half of the novel.
2. The tracker can also be read as another example of embedded technology covered in the previous section but is still explored under the heading of 'Indenture' because it is a device not worn of one's own volition

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