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Introduction: Technogothics

A radioactive sea monster emerges from Tokyo Bay and ravages the city. The creature's atomic breath unleashes death and destruction. Bombardments of shells, army tanks, fighter jets and a 50 000 volt electric fence are ineffective. Tokyo is in ruins. Thousands lie dead or wounded. Hospitals overflow with victims. Radiation poisoning is rampant. Survivors evacuate the city, fleeing to bomb shelters. The only hope is a secret weapon, the Oxygen Destroyer, which disintegrates oxygen atoms, leaving organisms to die of a rotting asphyxiation. The device is planted deep in Tokyo Bay. Divers descend into the water, where they find the monster at rest. The weapon is activated. The monster begins to suffocate and resurfaces. It expels a final roar before disintegrating into a massive skeleton. The odious weapon is destroyed by its inventor. He kills himself and the secrets of the

Oxygen Destroyer die with him.

This description of Godzilla's first appearance in 1954 underscores the relationship between monstrosity and technology. This is particularly striking when we consider that the original film *Godzilla*, a Japanese production, was released only nine years after the real atomic bombings of Hiroshima and Nagasaki. The technology of advanced weapons systems, made possible by the splitting of the atom, forms the backdrop of Godzilla's entrance into popular culture. In fact, early in the film, scientists ascertain that the monster's birth is really a rebirth: a series of underwater atomic experiments have revived and mutated an ancient dinosaur. Suffused with radiation, the creature has almost immortal powers of resilience and an atomic ray that he breathes like fire. The atomic, undead creature embodies the 1950s public outrage against nuclear technology that was uppermost in public consciousness in the wake of the terrible tragedies Hiroshima and Nagasaki.

If Gothic is the dark side of Enlightenment rationalism, then it can also digress from the modern technological course of an imagined sense of progress. As the dinosaur returns from extinction, the evolution of technology engenders the devolution of life. Human beings are threatened by an atavistic monster that is created by an advanced technology that ends in savagery. The strand of Gothic wherein technology generates monsters has a long history ranging from, for instance, the biotechnology of Dr. Frankenstein to the transformative chemistry of Dr. Jekyll to the grotesque medical experiments of Dr. Moreau. Reckless experimentation, unwise medical tests, the dissection of living tissue and the meddling with 'nature' permeate Gothic texts from the eighteenth century to the present: the Gothic Bluebook 'The Black Spider' (ca. 1798) and Wilkie Collins's *Heart and Science* (1883) feature mad scientists who engage in inhuman acts and concoct dangerous chemicals; films as diverse as Fritz Lang's *Metropolis* (1927) and Stuart Gordon's *Re-Animator* (1985) explore experiments that create new life-forms that threaten humanity; and video games like *Fallout* (1997) and *S.T.A.L.K.E.R.: Shadow of Chernobyl* (2007) are set in places devastated by the disastrous fallout of advanced technologies. These technologies cannot be contained; they unleash death, destruction and chaos.

In this narrative trajectory, technology takes revenge on deserving individuals and sometimes cultures. Often in the form of monsters, hi-tech advances turn on their creators. We created Godzilla, just as Victor Frankenstein created the creature. Hubris and arrogance are repaid by bedlam and ruin. In films such as James Cameron's *The Terminator* (1984), the humanoid cyborg goes on a murderous rampage. The future of technology looks bleak: humans are on the run from their own creations. Technology engenders regret. We crossed a line that inadvertently heralded our own destruction. These plots revolve around the fear that the technology we control will twist around and start to control us. Here, technology exerts a dehumanizing power that will kill us, or enslave us, or make us into mere nodes on a digital grid. This makes technology the Other. It must remain passive and conquered for us to rule, and yet it always threatens us with revolt.

This anxiety about technology-based dehumanization also forces us to reconceptualize what it means to be human. Within our troubled views of technology, we find films such as Ridley Scott's *Blade Runner* (1982) where replicants appear to be human; they have emotions, and even bleed when they are cut. Enslaved to the human population, those who rebel are hunted down and terminated. Ultimately, Deckard concludes that some replicants – Rachael, himself (?) – should not be treated in this 'dehumanizing' way. Exploited, degraded and enslaved, we have sympathy for those replicants, like Roy Batty, who are forced to do terrible things. Here technology is not Other; rather, it has become abjected – the replicants are simultaneously human and not human – and provokes self-reflexive questions: how we define ourselves as human? And how do we distinguish ourselves from the technology we create? If the replicants are a threat to society, then it is

because the position they hold is unjust.

Mary Shelley's *Frankenstein* (1818) includes the narratives of both Otherness and abjection. On the one hand, technological advances result in death and destruction; on the other, we are encouraged to reflect on how we define monstrosity in relation to both abjection and humanity. Victor unleashes this 'monster' on the world. He must distance himself from the grotesque physical nonconformity he has created. The creature's deeds are terrible, but there is a direct correlation between Victor's refusal to take responsibility for his creation and the creature's active nonconformity. Sympathy for the monster arises when Victor tries to treat his creation as merely a failed experiment, not an extension of himself. Defined as monstrous, the creature embodies Otherness: he must be contained, confined and conquered. Victor's demonization of the creature as a perversion, a wretch, is an attempt to displace responsibility; the wretch becomes the monster because, for Victor, the creature embodies his own ties to monstrosity and must be subjugated. He defines the creature as monstrous based on his own desire to make the wretch his Other. What is monstrous? Is it the grotesque creation – the creature – that is alienated because of Victor's rejection? Or are the creature's acts simply a byproduct of marginalization and alienation?

The impact of technology on human action, its influence on ethics and institutional flux, is at the knotty center of our sense of responsibility and autonomy. New technologies and their implications lead us far beyond considerations of 'material progress' or manipulations of our physical environment. They have a way of disrupting the binaries of life and death, organism and machine, human and non-human to radically alter the contexts in which they operate, a fact of significant political and ideological import. Our technology alters the possibility of action, changing its range and timing and enlarging its consequences; technology can usurp the power often associated with human will. But technology usurps and empowers simultaneously. It might empower through the relief of suffering or increased quality of life. Yet it also usurps authority at precisely the moment of empowerment, and this paradoxical effect means that it challenges boundaries, crosses borders and confounds categories.

In Nathaniel Hawthorne's 'The Birthmark' (1846), the skilled scientist, Almyer, is obsessed with a mark on his wife Georgina's skin: he sees the birthmark as a blemish on her otherwise perfect beauty. A story about, among other things, technology and biomedical science, Alymer mixes a chemical that he believes will erase the mark. Georgina agrees to drink the mixture, even though Almyer warns her about potentially dangerous side effects. Georgina falls asleep and the birthmark fades until it is nearly gone. She awakes and Alymer is pleased by the results, but suddenly she begins to wane and tells her husband she is slowly dying from a fatal side effect of the potion. Once the mark fades completely, Georgina dies with it. As with Victor, Alymer's pursuit of what he considers to be beauty and perfection ends in tragedy. His attempt to push the boundaries of science suggests that the effort to obtain knowledge about nature can bring about destruction. In this, the story is a critique of medical materialism, which attempts to understand what it means to be human by understanding the material body. And the text explores how science and technology can reverse or eradicate natural flaws with impunity. Yet the conclusion suggests that scientific investigation invariably falls short. When techno-science is pitted against nature, the manmade creation is less powerful than the natural world. Technology invades, disempowers and leads to ruin.

Hawthorne's story has been appropriated by social conservatives in the United States. In 2002, the political debates over reproductive technologies and embryo research motivated President George W. Bush to appoint a bioethics committee to examine stem-cell research. It was led by Leon Kass – a 'theocon' whose moralizing views on bioethics were shared by the President – and he began the committee's work on January 20, 2002 with a discussion of

‘The Birthmark’. For Kass, Hawthorne’s text invoked a Faustian narrative: by searching for biological perfection, Aylmer brings tragedy on himself. Thus, Kass established the tone of the discussion and asserted that ‘The Birthmark’ deals ‘with certain important driving forces behind the growth and appreciation of modern biology and medicine, our human aspiration to eliminate defects and to pursue some kind of perfection’ (qtd. in Ball 257). In the ensuing debate, Kass called attention to the repulsive side of Aylmer’s goal: he derided those scientists who sought to eliminate insignificant cosmetic blemishes; he condemned those who sought to use genetic engineering to clone ‘better’ children; and he warned against biotechnology that intervened in the ‘natural’ reproductive processes. In Kass’s reading of ‘The Birthmark’, the text is a parable about attempting to eliminate all biological limitations – even mortality. In fact, Kass saw the birthmark not as a trivial flaw but as a problematic scientific intervention in the human condition: ‘I do not think the sign of the birthmark is superficial’, he argued. ‘What it means is deep and the attempt to go after the human condition to save it even from its mortality [...] means that there is something in the culture at large and something in medicine today, however modestly practiced, that almost says, “Look, we will never stop until we can deal with mortality as such”. The question is, is that a worthy aspiration or is there something that necessarily gives rise to shuddering as a result of our efforts to do that?’ (258). Kass’s analysis of Hawthorne’s nineteenth-century story in the context of twenty-first-century bio-medical research seems curious, for he asks the ethics committee to read the text in a historical vacuum, as an ‘atemporal index of human repulsion to the hubris inherent in “the pursuit of perfection”’ (259). Yet it fits his political agenda: he seeks to curb stem-cell research, inhibit reproductive technologies to stop cloning and to demonize those scientists who he sees as ‘playing God’.

Anxieties about ‘playing God’ are bound up with fears about the loss of what is ‘naturally’ human. When techno-science threatens to cheat death, Gothic discourses are invoked by politicians, writers and critics who mourn the loss of ‘humanity’ and express nostalgia for a problematic paradigm of a universal humanism. It is also invoked by those who seek to conflate technology with neo-colonialism – those who argue that the advanced technologies of hyper-capitalism replicate the techno-modernity that fuelled 18th and 19th century imperialism. And it is used by writers and cultural critics who are more generally wary of technology – those who identify the integration of humanity and machinery as a frankensteinesque turn that threatens us with inhumanism. For instance, in *Language and Silence: Essays on Language, Literature and the Inhuman* (1970), George Steiner mourns what he sees as the lost object of the human, not in any nostalgic sense, but with the horror that he sees arising from the identity crisis of the *inhuman*. In an age in which rapidity of technical communication conceals obstinate ideological and political borders, Steiner asks if this situation,

represents technological advance or refinement [...]. What is the measure of man this work possesses? It is not a question which is easily formulated. But our time is not of the ordinary. It labours under the stress of inhumanity, experienced on a scale of singular magnitude and horror; and the possibility of ruin is not far off. There are luxuries of detachment we would like to afford, but cannot. (9)

It would seem the apocalypse is upon us. An apocalypse that arises out of a language that is corrupted by advanced technology and the language it spawns: ‘advertising’, ‘spin’ and a ‘vulgarity, imprecision, and greed [...] in a mass-consumer democracy’ (vii). Frenzied by the threat of a technology that produces inhumanity, Steiner invokes gothic discourse – not just of horror – but of ‘the silence of a cosmic space that strikes terror’ (13). It is not just the horrors of popular consumer culture that engender this discourse; it is also Steiner’s critique

of the mass communication technology, the rise of a technology-based market-driven mass media and a subsequent dystopian narrative of a technology-based Global Village. This demonization of technology and its impact on economics, society and culture conflates the inhuman within the finite of 'man' and casts advanced technology as a potentially defective feature of human existence, something that is not proper to the true end of men/women but that we have thus far failed to control.

This demonization of technology is taken up by Jean-François Lyotard. In his 1988 book *The Inhuman* (a collection of loosely connected essays), Lyotard associates technology with the 'threat of inhumanism' and he argues the case for an 'anti-inhumanism' by criticizing those technologies and institutions that force us to 'surrender to the designs of the inhuman' (60). He warns us against the threats of advanced capitalism and its ideology of technological development. He worries about a seemingly endless appetite for expansion and scientific innovation in what he calls the new 'technological megalopolis'. He critiques a contemporary rejection of 'heterogeneity, dissensus [...] and the unharmonizable' (63). And he refers to Artificial Intelligence and Artificial Life as colonising imperatives – imperatives that development does its best to expedite. In particular, Artificial Intelligence is defined by Lyotard as being reductive. In response to the question 'Can Thought Go On Without a Body?', he concludes that AI does not produce thought that is flexible or complex. Rather, it responds mechanically to binary code; and yet it is a threatening form created by the human, seeking to usurp human power. 'The separation of Thought from the Body', Lyotard writes, 'leaves behind a poor binarized ghost of what it was beforehand'; what is lost is a 'natural' form in which human dimensions remain at the forefront (66). Here, in Lyotard's double-speak (binary-speak?), the binary-code of AI leads to a dichotomized spectral figure of what used to be. The potential loss of the human in the wake of inhuman technologies, then, suggests that technologies have not diminished the realm of ghosts. Scientific or technological thought is not, in other words, responsible for relegating ghosts to a pre-modern, pre-technological past. Rather, in an inhuman condition, modern forms of technology project ghosts into the future and their power – a hauntology – increases its dominion.

Lyotard's future projection of the loss of the human at the hands of advanced technology is described as engendering 'threat and *terror*: shadows, solitude, silence and the approach of death may be 'terrible' in that they announce that the gaze, the other, language or life will soon be extinguished. One feels that it is possible that soon nothing more will take place' (67). This 'threat' and 'terror' is not far from a Burkean or a Kantian reflection on the sublime terror of being faced with extinction. In fact, Kant suggests that attempts to imagine the excesses of the sublime result in the recognition of an 'abyss' which generates fears of losing the rationality and logic that compromise the human subject. Mental confusion through the collapse of the imagination arises when one is pushed by the sublime toward a redefinition of his or her own sovereignty by confronting incompleteness in the presence of limitlessness, turbulence and the ungraspable. But it is, for Lyotard, a technological sublime that generates this response and moves the human into the realm of inhumanity. For Lyotard is careful to distinguish between two forms of the Inhuman. The first is the monstrous thing he calls 'development', which we might recognise as a form of globalization, with its seemingly endless appetite for expansion and technological innovation. The second is the Imperial Logic of Artificial Intelligence and Artificial Life which bends human beings to its will and has little regard for the individual: 'within the inhumanity of the system', he writes, development has become an end in itself and its appropriation of techno-science is designed to raise new levels of performative efficiency, the consequence of which will be even greater power and higher profits (69). Nor will development ever be satisfied: it will always push to a higher level and, if left unchecked, Lyotard argues, development will lead to a culture based

on inhuman principles. Something which, for him, must be resisted at all costs.

There is a discourse of human self-alienation here, which is consistent with many social-scientific accounts of technology. For advanced technology and advanced capitalism are human creations that are seen to require urgent socio-political collective regulation because they have escaped the grasp of their creators. In this context, the inhuman is understood as a finite limit of man, a defective feature of human existence that is not proper to the true end of man but that we have thus far failed to control in, for example, Artificial Life, Artificial Intelligence and commodification. These phenomena are compared to monstrous forms, threatening beasts, ghosts and associated with death. For they are characterized as sub-human precisely because they are improper to us but also reducible to us and must be overcome or transcended if we are to actualize the freedom that is our due.

Technology has a profound impact on the productive body in terms of manufacturing, distribution and dissemination. Working subjects are inseparable from their tools and means of production, thus bringing into view the human, non-human and technological dimensions of productive subjects/objects and bio-assemblages wherein pencils, desks, prostheses, computers and digital networks are integrated into the productive body. Moreover, the technological mutations of the apparatus of production require the disciplining of the body into the production of labour to create the body-machine. For the productive body is the body of a capitalist regime; it is a body that is regulated and re-engineered within an economic system based on consuming and consumption, supply and demand, labour and discipline. The constitution of productive bodies and economic productivity is paramount in the emergence of industrial workforce organization as well as the establishment and integration of markets within the rise of capitalist modernity. The corporeal and material dimensions of production highlight the body in its intrinsic relations with 'the economic' and the generation of economic subjects. Productive bodies are vital to the industrial systems that emerged after the threshold of biopolitical modernity in the late 19th and early 20th centuries. Materialist, industrialist and Fordist manufacturing relied on mechanical bodies that were optimized to generate products for distribution. The model of the 'human motor', borrowed from thermodynamics, was crucial for the constitution of productive bodies at the end of the 19th century. Likewise, in post-industrial and post-Fordist economies, resources are regenerated through techniques of the self that are described as 'body therapy', 'wellness' and 'self healing' in order to maintain the productive body. For while there have been transformations of the human motor and transitions between hegemonic subjectivities of the carbon and the silicon age, advanced capitalism continues to thrive off the productive body. Earlier models of the body-machine have not been directly or thoroughly replaced by new ones.

Yet the body-machine is more than the reduction of the living being to a machine. This is part of it. But the body-machine also relies on signification through the production of images. Because the machine is the extension of corporeal activity, the representation of the body-machine contributes to the ideology of production: the living being must become machine, for the machine is the sign of an accumulative potential that is inscribed on the living body. According to François Guéry and Dider Deleule,

What is implied in the representation of the body-machine is [...] the progressive reduction of the manual act to a mechanical operation, even before the machine purely and simply replaces the mechanical gesture. But it consequently appears that this gesture itself is both the reduction of the skilled, complex task to its simplest expression, and the simulation of living work. The result is that this implication will only be justified in its historical 'effects' which will uphold the representation, without the invocation of any theory of reflection. (106-7)

The biological body does not exist outside of social conditions, nor does it have a fundamental essence and external meaning. Biological bodies must be understood within an economic system of productivity and work through the migration of productive energies into capital: the biological body is also the productive body, the motor body and the body-machine. 'Mechanism's theory of the body-machine', conclude Guéry and Deleule, 'brings to light the process, inherent to technology, which consists in withdrawing natural and immediate finality from living beings in order to transfer it in a mediated and secret manner to a domain that remains foreign to the living being' (107).

The monitoring and policing of productive bodies are part of a biopolitics, which Foucault attributes to the intricate workings of power in the transition from human to subjects. Biopolitics are part of the creation and management of populations, and regulates the social and productive body. 'The biopolitical demands placed on the social body', writes David Ruffolo, 'establish populations that support and produce technologies of government that instill the desire for subjects to govern themselves – for bodies to be aware of themselves as subjects' (12). In this, bodies are governed as subjects through techniques (procedures) and technologies (reflections) to engender 'technologies of self'; every technique of production requires modification of individual conduct not only in skills but also in attitudes and processes of normalization. The subjugated technologies of the self allow for the possibilities of subjects to construct themselves as social beings and result in the normalization and abnormalization of bodies (as healthy, ill, degenerate, delinquent or model citizens). To illustrate this point, Foucault points to the social divisions in Medieval European society whereby the techniques and technologies of the self created the human monster. Foucault writes,

[T]he monster's field of appearance is a juridico-biological domain. The figures of the half-human, half-animal being (valorized especially in the Middle Ages), of double individualities (valorized in the Renaissance), of hermaphrodites (who occasioned so many problems in the seventeenth and eighteenth centuries) in turn represented that double violation; what makes a human monster a monster is not just its exceptionality relative to the species form; it is the disturbance it brings to juridical regularities (whether it is a question of marriage laws, canon of baptism, or rules of inheritance). (51)

The abnormal body of the monster-human is caught up in a matrix that elevates the productive, transformative and manipulative body through a system of signification that clearly marks out the perimeters of normalcy. Signs, then, work through a technology of power that dominates and objectivizes the subject, even while permitting operations within the normalizing borders that define agency. From this perspective, technologies of the self are mechanistic; they constitute the mechanisms employed by individuals and the society to perpetuate the consumption and regulation of individuality. The structured set of policies within a lived environment fall under the nuances of a technological structure that is man-made with the image of a particular type of environment in relation to the discourse between people living within the social structure.

For some cultural critics, new technologies have the potential to usher in a new and improved posthuman species. Cloning, nanotech, genetic engineering, gender reassignment, neuropharmacology and body modification blur the boundaries between technology and the biological body and suggest, for optimists, that we will eventually transcend our finite flesh. Following this line of thought, technology can usher in superior life for our species; the limits of time and space will no longer impede us; we will overcome the restrictions of our corporal selves. For some theorists, the drive toward the posthuman has already begun: artificial

cardiac pacemakers can keep the heart beating, electrical impulses can provide deep brain stimulation, prosthetic devices can help breathing, antipsychotic medication can regulate chemical imbalances, limbs can be replaced by prostheses, cosmetic surgery can dramatically alter appearance, hearing and other senses can be expanded with amplifiers. The human body is more plastic and open to manipulation than ever before. But the notion that we can transform the human condition and move beyond its limits also means we must remain in control of these technologies. Mechanical and digital equipment needs to stay under the thumb of human mastery; if we lose control, if it slips away from us, then the technology threatens to become a constraint, not an emancipation. After all, the power of technology is also the power to alienate; it can alienate us from ourselves and dehumanize us through the monsters we have created.

Gothic narratives conjure up the dark side of the cyborg, particularly when the hybrid mix of technology and organic matter trouble epistemological categories and the taxonomies of nature. This is striking when the nightmare of the human mind and self-awareness is metaphysically divorced from the body. Here, the mind is disembodied, part of a digital download or robotic substrate so that a being with intellect, self-awareness, and self-interest exists in a nonbiological substance. Once imagined to be a sinister vision of the future, cybernetics and artificial intelligence are now part of everyday life. According to Fred Botting,

There is nothing special about monstrosity in an age of cybernetics and Frankenstein pets. The future, once so monstrous, has already collapsed on an indifferent present. Gothic cedes to 'cybergothic': cloaked in reassuringly familiar images, technology envelops humanity in a resolutely inhuman system [...] The identification of and with Gothic and cyborg figures renders both increasingly familiar: outsiders and monsters move within the culture they have redefined. At the same time, cybergothic shapes appear as no more than the surface effect of a thoroughgoing transformation of all the relationships and differences of modernity, a transvaluation in which life is lived in posthuman or transhuman terms. (14)

The dark future is the shadowy present. High tech merges with low life: advanced science and information technology collide with the biological body under the backdrop of a post-industrial landscape. Technological monstrosity is an everyday condition. 'Monsters, ghosts and vampires', Botting continues, 'become figures of transitional states representing the positive potential of posthuman transformation: they participate in a fantastic flight from a humanised world and towards an inhuman technological dimension, figures for developments in genetic and information science, cyborgs, mutants, clones' (14). Cybergothic monsters are part of a Frankesteinesque narrative trajectory; technology might turn against us in a 'playing God' story, but in this scenario the monster does not expect the father-creator to save it or to make it more human.

A dystopian vision of the cyborg endures in *Star Trek's* Borg, the cybernetically enhanced humanoid drones organized as an interconnected collective, the hive. The Borg collective has one objective: the incorporation of the technological and biological diversities of other species into their own in order to achieve perfection. This is fulfilled through forced assimilation, a process that takes individuals and advanced technologies into the hive, so the drive for perfection includes the eradication of individuality, empathy and human emotions that might impede rationality and mechanical efficiency. Robbing the subject of individuation, the horror of the Borg parallels the loss of self in zombification and vampirism: the undead enter a collective of killing machines, driven by a single purpose. In the case of the Borg, organic wholeness is a weakness; human body parts are replaced with

technologically advanced prostheses so that implants supersede eyes, arms and legs. Emotion and ethics are eradicated; they are zombified drones wired up to a collective that shares a brain pattern, a group consciousness, that is devoid of individual thought. Dark and unfathomable, these cybergothic monsters – hybrids of organic matter and technology – are undead figures designed to seize other beings and assimilate them into the hive.

In *Limits of Horror: Technology, Bodies, Gothic* (2008), Fred Botting examines, among other things, the anxieties engendered by modern media, the powerful forces of mechanization and digitalization, as well as the shifts in Gothic that are energized and lost in new technologies. The desire for the real, the demands to overcome the fantasies proliferated in the media, have led to a hyperreality where social criticism is infected by horror. Or, to put it another way, horror is social criticism. Technological creations have left a void in personal experience; horror no longer has an impact on subjective experience but exposes the emptiness of its audience. ‘What distinguishes contemporary horror is its relationship to technology’, Botting writes, ‘the capacity to realise visually what had, before, to remain as fantasy, thereby evincing the capacity to reformat reality itself. The former depends on the imagination of readers, on their credulous investment in the restoration of a paternal symbolic order, while the latter requires only the passive consumption of the spectator, intoxicated by the realism of images generated by special effects’ (171). Indeed, technology highlights the difference between modern and postmodern horror: the former relies on the imagination, the latter uses machinery and technological advances to realize fantasy, making it visible. The power of technology crushes Gothic by emptying it of affect and leaving no room for modern Gothic conventions: ‘Horror’s production bypasses the human figure and, simultaneously, becomes the last source of human horror: it discloses the human figure as nothing but surface, a fabrication evaporating in the destiny of images’ (171).

The subject is imitated, duplicated and eradicated by the power of technology. The mechanization of nature and the uncanny nature of doubling reduce individuality through a reliance on surface, the erasure of depth. The absence of a core sense of humanity is a byproduct of an empty corporate media that disseminates and promotes an absorption in popular culture. Botting extends these ideas in his contribution to this volume, employing the terms uncannimedia and technospectrality to capture how the virtual effects of technology have transformed spectral figures into the norm of contemporary life. The ghosts that haunted the dark spaces of modernity are no longer liminal, shadowy figures that remain elusive. Spectral forms and figures are now pervasive: they appear in cell phones, videogame consoles, television screens, computer monitors. The hallucinatory effects of new technologies mean that shadowy figures are no longer relegated to the margins; they are the banal images of our everyday lives. These ghostly reanimations normalize spectrality.

Gothic fiction arose during a historical moment when printing and publishing techniques began to make the production of mass-market fictions possible. Gothic melodrama also thrived during the expansion of British theatres as venues for mass entertainment in the 1790s. Because Gothic formally and thematically fixates on monstrosity, illegitimacy, and disintegration, it lends itself to new and hybrid forms of mass-media, particularly because such forms are inherently Gothic objects, loci of mystery and fear. Moreover, the cultural elite often react to new media forms much as they react to a Gothic hero-villain: they disseminate warnings about the power to corrupt and undermine the social order. In this volume, Joseph Crawford tracks how, since the eighteenth-century, Gothic has been at the centre of the anxieties provoked by each new media technology, and how such fears have perpetuated moral panics over penny dreadfuls, horror comics, horror films, ‘video nasties’ and, most recently, horror-themed computer games. Gothic includes the discourses of mutation and the threats posed by new media technologies. Crawford thus considers this recurrent pattern, exploring how new and hybrid media technologies give birth to Gothic

narratives, and the extent to which Gothic may, itself, be considered a side-effect of the rise of modern media technologies. According to Crawford, Gothic could not thrive in the traditional oral and manuscript cultures of pre-modern Europe. With reference to Matthew Lewis's ground-breaking Gothic melodrama *The Castle Spectre* (1794) and the 'Slenderman' horror video sequences on YouTube, Crawford shows how Gothic has repeatedly mutated in order to both express and take advantage of the possibilities and anxieties generated by each new popular forms of media technology.

Gothic is often considered a visual mode. For literary critics such as Dale Townshend, the auditory field became an eighteenth-century Romantic response to the disturbing visuality of novels like Matthew Lewis's *The Monk* (Townshend). If the eye was the primary form of communication for the Gothic novel, then Keats and Wordsworth turned to sound and the ear that hears it as the privileged organ of imaginative communication. However, with the advent of sound recording, digital sound files, sampling and other auditory technologies, the ear is the portal to experiences that leave us with a sense of the uncanny – that which is eerily familiar, haunted and holds an inbetween position by crossing borders and blurring boundaries. In *Gothic Music: Sounds of the Uncanny* (2012), Isabella van Elferen considers Gothic sound in music, film, videogames and television to illustrate how auditory technologies produce experience that is akin to the spectral revenant because of its non-signifying, non-referential nature (27). Ephemeral and open to unlimited inscriptions of meaning, auditory Gothic is phantasmal, for it relies on mechanic ghosts, digital distortions and eerie acoutemologies. Justin Edwards explores some of these ideas in his chapter, which reads Roald Dahl's 'Sound Machine' (1949) and Leonora Carrington's *Hearing Trumpet* (1974) as examples of an auditory Gothic wherein technological extensions to the ear open up new epistemologies. Here, technologies enhance soundscapes by amplifying sensory perception into advanced ways of hearing: understanding, beliefs, emotions, compassion and nightmares are transformed by new forms of consciousness. By amplifying sensory perceptions, listening devices extend situated, embodied, cognitive practices and offer insights into how acoustic epistemology provide a form of supra-rational knowledge based on a model of transduction between material sound energy and the conceptual. This challenges traditional epistemology by questioning a logocentric and rational model of knowledge, for the role of extended auditory experience can open up the 'mindful ear' and enter Gothic spaces that depart from rational epistemology.

Isabella van Elferen's work on Gothic music is expanded in the chapter, co-authored with Charlie Blake, on the relationship between humanity and musical technology, the musical man-machine who is half human and half *Überthing*. Blake and Elferen's formulation of Sonic Media And Spectral Loops (SMASL) describes a scenario wherein sonic natality mixes with uncanny technological extensions to stir apprehension and hesitation in the listener. An uncanny sensation arises out of the doubts regarding the origins and sources of the sound: advanced musical technology has the power to actualize echoes and reverberations, original bases and perceived endpoints. Spectral presences are thus engendered through the technologies of sound that blur borders and discombobulate the listening experience. Articulating a new analytical model, SMASL, Blake and Elferen pose a series of ontological, locational and perceptual questions about the emergence of spectral sounds, what they are and how we can theorize them. Gothic sound is also the subject of Kelly Gardner's contribution, which refers to the word 'Braaiinnss!' as an audible signifier of zombification. With reference to zombie-themed video games, Gardner explores the role of sound and its effects on the immersion in and engagement with the gamer. In so doing, this chapter reflects on how the figure of the zombie inspires fear in the player with just a single sound and how various narrative techniques are subsidiary to audio stimulation.

The structures of knowledge-based economies situate new technologies alongside

information and communication as indefinite commodities that are forever becoming-other as they circulate through global markets. One of the ways knowledge-based economies have had a profound impact on identity is by transforming the body – becoming-other – through biotechnological innovations. Biotechnologies have extended far beyond the promotion of health and the treatment of diseases: ‘biotechnologies not only engage life by healing and treating life forms but more importantly *produce life itself* through the biovirtualities of such innovations’ (Ruffolo 159). In their book *A Machine to Make a Future: Biotech Chronicles* (2005), Paul Rainbow and Talia Dan-Cohen reflect on how the human genome project has produced knowledge that goes far beyond health and well-being; the findings provide a powerful apparatus that can lead to the production of life and the redefinition of death (2). In this volume, these ongoing technoscientific and biomedical revolutions are taken up by Roger Luckhurst, who demonstrates how the borders separating life from death have been redrawn in Gothic texts. With reference to works such as *Coma*, *Fringe* and *Resident Evil*, he examines the cultural extension of a new order of liminal ontologies – the new dead – in a thanatological paradigm that has been woven into the Gothic since the 1960s. Similarly, Rune Graulund’s reading of Ian McDonald’s 1994 novel *Necroville* focuses on nanotechnology as the Gothic technology that simultaneously haunts the past and the future. The various forms of corporeal technogothics of the novel, Graulund suggests, include the resurrected dead, remnants of the undead (zombies and vampires), androids, cyborgs and robots. Death in the past is haunted by the nanotech future: what happens to death as post-human bodies begin to emerge? By filtering the discourses of nanotechnology through a Gothic lens, Graulund reveals some of the significant dilemmas of biotech and its relationship to the technologies of the Gothic.

Biotechnologies also feature in the contributions by Sara Wasson and Barry Murnane. In Wasson’s chapter, Jean-Luc Nancy’s essay ‘The Intruder’ (2002) and Claire Denis’s film *L’intrus* (2004) illustrate how the rhetoric of ‘the gift’ of organ transfer is challenged through the Gothic’s preoccupation with alienation from the body. Both texts, according to Wasson, represent transferred tissue as alien and active: the transplanted organs engender narrative crises about identity, for the ‘self’ is transformed by the foreign presence that ensures survival. In these cases, the medical intervention of new biotechnologies unravels a coherent story of selfhood that necessitates the narration of a new subjectivity. Organ transfer and competing narratives are also the subjects of Murnane’s research into the media coverage of George Best’s 2002 liver transplant and his death from organ failure in 2005. This chapter offers a salient case study of how Gothic language creeps into the mass media narratives of extended life, death and dying in the context of a high-profile biomedical case. For Murnane, the recent advances in biotechnology and organ transfer transform the tenor of Gothic by incorporating its language into modern medicine; as a result, Gothic discourses are normalized by both the media and the medical profession.

In *Skin Shows: Gothic Horror and the Technology of Monsters* (1995), Judith Halberstam tracks the historical changes of monstrosity from the early nineteenth century to the late twentieth century. She finds that ‘monsters’ are overdetermined signifiers, figures of excess that structure the dynamics of discourses, tempting audiences to suppress some discourses and highlight others. Based on the Foucauldian model of the incitement to discourse, the monster provides the crucial trope for Gothic discursivity: the monster makes the process of interpretation visible, unveiling more about those who define monstrosity than the monster itself. The ideological implications of this are clear: rhetorical devices make the monster; it is a textual machine and a discursive technology that produces ideology with one hand while deconstructing it with the other. Halberstam’s ideas inform the chapters by Alan Gregory and Maisha Wester. For Gregory, the disabled body in Patrick McGrath’s novel *Martha Peake* (2000) exemplifies the technology of monsters because the exaggerated

contours of Harry's body extend beyond corporeality. What is visually inscribed on the monster's deformed body is soon displaced onto anxieties about the excessive transgressions of violence, grotesque performances and incest. For Wester, the tales of Sawney Bean and Sweeney Todd continue to haunt British and American culture through their numerous tellings and re-tellings in various forms. The complexly interwoven, and at times contradictory, meanings of the stories illustrate how each tale is a meaning machine through its production of excessive anxieties. What seem to be stories of robbery, murder and cannibalism, Bean and Todd consolidate anxieties about racial difference, colonization and industrialized capitalism into an intricate system of meaning.

Linnie Blake's chapter focusses on three British Steampunk novels by Mark Hodder: *The Strange Affair of Spring Heeled Jack* (2010), *The Curious Case of the Clockwork Man* (2011) and *Expedition to The Mountains of the Moon* (2012). In this Burton and Swinburne trilogy, the narratives include a scientifically engaged and technologically saturated vision of a nineteenth century that marshals imperial Gothic's preoccupation with bio-social liminalities and degenerations alongside the horror of internal and external assaults on imperialism. These narratives are not only about an imagined past; they also reflect the horrors of the neo-liberal politics of the present. Through time travel and various technological advances, Hodder's texts revisit the scientific preoccupations of nineteenth-century Gothic to explore contemporary neo-liberalism which, for Hodder, pervades our lives through the power of military, industrial and economic forces. By combining nineteenth-century imperialism and contemporary neo-colonialism, Blake argues that the trilogy interrogates the refashioning of the self in neo-liberal discourse (as modality of capitalist flow), thus erasing traditional regional variations, gender roles, ethnic relations and class hierarchies for transnational incorporation and a corporatized bio-technology that refashions humanity itself.

Technology is not only limited to cell phones, super computers, biotechnology, satellites or the dark web. Speech and language are also basic communication technologies that connect people and lead to other technological artifacts: quills, pencils, pens, paper, typewriters, fiber-optics, email. Augmented with these technologies, and connected in communication with people in other times and places, we enhance connectivity but we also open out to that which is foreign, unfamiliar and potentially threatening. The threat of language as a virus or parasite is taken up in Peter Schwenger's chapter, which reads Tony Burgess's 1998 novel *Pontypool Changes Everything* and Bruce McDonald's 2008 film *Pontypool* as part of the Gothic technologies of language. Here, language is toxic; it spreads quickly and threatens to kill its hosts. Language as a technological system might seem to be benign on the surface but it is deeply dangerous: outbreaks of glossolalia in Neal Stephenson's *Snow Crash* (1992), for instance, infect a future society. Once language has incubated in its hosts, it goes viral and becomes malignant.

All of the contributions to this volume explore the plethora of technologies associated with Gothic literary and cultural production. In this, the contributors address a series of engaging inquiries into the links between technologies and the proliferation of the Gothic: Frankensteinesque experiments, Moreauesque hybrids, medical and chemical experimentations, the machinery of Steampunk, prostheses, and the technologies of the self. Throughout this volume, we address how Gothic technologies have, in a general sense, produced and perpetuated ideologies and influenced the politics of cultural practice. We also explore significant questions: How has the technology of the Gothic contributed to the writing of self and other? How have Gothic technologies been gendered, sexualized, encrypted, coded or de-coded? How has the Gothic manifested itself in new technologies across diverse geographical locations? We thus explore how Gothic technologies textualize identities and construct communities within a complex network of power relations in local,

national, transnational and global contexts.

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