ephemera | articles
theory & politics in organization

ISSN 1473-2866
www.ephemeraweb.org
volume 10(2): 152-176

The primitive, technology and horror: A posthuman biology

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abstract

Recent works have explored the concept of posthumanism as a radical decentring of the human, humanism and the humanities in the wake of the complexificaiton of technology and systems, and new insight into nonhuman life (Pettman, 2011; Wolfe, 2009). In this article, we argue that posthumanism is not just an epistemology (Wolfe, 2009), but an aesthetic that blends three elements – the primitive, technology and horror. The interrelation of these three elements produces an aesthetic sensibility, that says three things about non-humanist conceptions of life. First, we draw attention to *metamorphosis* as an engine that encourages the viewer to recognise life not as being, but as perpetual becoming. However, as an antidote to the liberatory promises of 'flow', we specifically argue for a distinction between *morphing* and *mutating*, showing how each articulates opposing fantasies of posthumanism. Second, the concept of *primal technology* is introduced, which injects the humanist understanding of technology with an alternative, subterranean and posthuman supplement. Third, *proto-atavism* introduces the concept that multiple paradigms of life exist on the peripheries of humanist life. Ancient and future evolutionary traits exist in the *present* – both in the aesthetic imagination and in everyday life. Ultimately, we work towards a more wide-ranging idea – *a posthuman biology* – an ethical imperative which reminds us that, in a technological age, life is no longer containable in 'simple' life.

Introduction – techno-anxiety

The Golem, one of the oldest legends of artificial creation, may have originated as wooden or clay models of human beings that were placed in graves to act as servants of the dead. A fear that life itself could be conjured up in this mass of wood or clay through the power of Jewish cabbalism rendered the Golem an ambivalent figuration, supposedly the servant of man, but one that threatened to overpower him. The Golem legend can be traced back to Jewish psalms of the 6th century, where the formation of life (*golmi*, literally 'unformed limbs'), was seen as something that could emanate both from the mother's womb *and* from the (nonhuman) earth itself (Graham, 2002: 87).

The Golem is an example of a perennial horror in the western imagination, and it is striking how it exemplifies that western humanist versions of technology tend to create a master–servant dialectic and anything that threatens this divide invokes horror. With its fixation with 'Frankenfoods' and genetic engineering technologies (Thompson, 2004: 165), the 'revenge of nature' or 'nature out of control' leitmotif is a common one in the contemporary west, its roots embedded in the Romantic tradition. However, since

antiquity, technology has been simultaneously imbued with magic and rationality, evil and redemption, trickery and transparency (Scheper-Hughes, 2001).

Modern science has significant origins in medieval alchemy, astrology, and other occult arts (Davis, 1999). In the Hermetic tradition of the Renaissance, ancient fascinations with automata were reinvestigated and reinvested with scientific concepts. Descartes, the philosopher who provided the western imagination with the most enduring model of the human to date, was fascinated with the automaton, comparing it to the human body, and thus creating an enduring preoccupation with mechanism as something that pervaded machines, bodies and animals but never the non-material, spiritual realm of the mind.

As well as the considerable eschatological significance attached to technology (Wagar, 1982),[1] it is possible to discern a 'doubleness' (Bell, 2001: 7) surrounding technology; a desire for it and a dread of it that speak of the ambivalent position that technology still maintains in the west today – a 'schizoid' stance, alternating between the technophobic and the technophilic (Thompson, 2004). Huyssen (1986) attributes this to the two poles of experience people had with new technologies in the late 19th century. On one hand, technics was aestheticised and fetishised (world expos such as the Crystal Palace, garden cities, the *cité industrielle* of Tony Garnier, the *Città Nuova* of Antonio Sant'Elia, the *Werkbund*), and on the other the military machinery of World War I which alienated human life while at the same time making the human inhuman (Seltzer, 1992). The avant-garde expressed this bipolar experience in various ways in Dadaism, Futurism, Cubism and Constructivism (Rutsky, 1999)

Throughout western human history we can observe technology as revolt. In the double sense of the word, technology is imagined as rebellious and repellent. Why is this so? Baudrillard's (1968) psychoanalytical reading of technology describes it as a force which, despite its outward association with progress and human civilisation, is perennially 'haunted by the temptation of a reverse evolution which coexists in it with the potential for progress' (Baudrillard, 1996: 130). In his eyes, humans unconsciously produce technologies that are partly dysfunctional, and hence will never be infallible, because humans are terrified of the potential infallibility of the technological. We could call such an imaginary 'techno-anxiety'.

Many of these diverse concepts seem to conflate the primitive, technology, and horror. These three tropes may seem unrelated and contradictory, but in this article we will first of all explore each trope in turn, and consider what these interrelations can tell us about the logic of contemporary technoculture. Following this we will attempt to tie these tropes together by placing them in the wider context of studies on monsters, also known as teratology. We will use a sample of images from contemporary visual culture that blend together the aesthetics of the primitive, technology and horror. Turning specifically to advertising, we will explore two exemplars of this visual economy in detail – Nike *Mutant Foot* (Publicis Mojo, Melbourne, 2005) and Audi *Spider* (Lynn

1 Wagar argues that 'an apocalyptic imagination' exists in the western world, arising from the fears surrounding 'the ends and the beginnings of self', the 'dread of nature' and the 'lethal effects' of science and technology (Wagar, 1982: 66–67).

Fox, London, 2005). While concentrating on these two primary texts, we will draw from a larger intertextual repertoire consisting of advertising, film and other images in visual culture to bring to light the different facets of the dynamic that is created when the primitive, technology and horror come together. We argue that the aesthetic conflation of the primitive, technology and horror points to three new concepts. We call them *metamorphing*, *primal technology*, and *proto-atavism*. Metamorphing is a prevalent technique which does two things. It points to a logic of identity as a constant state of becoming and it emphasises flow as a necessary way to understand processes, objects identities. We critique the almost universal celebration of flow in contemporary philosophical thought. Primal technology is a concept we use to contradict the humanist and pervasive concept of technology as (i) modern, (ii) progressive, (iii) clean and (iv) nonalive. Proto-atavism is a concept we introduce as a supplement to atavism – the idea that evolutionary traits from the past can exist in the present. In contrast, proto-atavism argues that evolutionary traits from the future can also exist in the present. In explaining these terms, we argue that they present us with fantasies about technology which enliven the cultural imaginary. Together, they work to produce a conception of life which we could understand, paradoxically, as a type of 'posthuman biology'.

A) Technology and the primitive

There are deep contradictions and connections between the primitive and technology. Historically, the primitive has mainly been conceived as the Other of western civilisation recorded in simple terms as a site of primordial simplicity or originary unity (Foster, 2003: 384; Derrida, 1997: 119 This is because the history of technology is told from a western lens – one that is predicated on gradual progression and sophistication of the technical:

> the presence or absence of specific technologies has often been read as a marker of cultural 'backwardness'… Technology is [thought of as] something that comes from the West and does something to other people in other places, such as the 'Third World' – a framework which, even when well-intentioned, denies both agency and contemporaneity to the 'other'. (McQuire 2006: 255)

But to say that the primitive is simply that which existed before technologies of progress is to ignore the complexity of this important concept. First, technological progress is not a force that is unique to modern 'civilised' society; it is intimately bound with art and antiquity – the primitive and the technological arise from the same logic (Heidegger, 1977; Wills, 2008). Heidegger asks us to consider that original conception of technology as manifest in ancient Greece. Then, technology referred to the ways in which realities are brought into the world; technology was not a mere means or instrument, but a mode of 'unconcealing' [*her-vor-bringen*] reality (Heidegger, 1977: 10). However, as Heidegger reminds us, every unconcealment of reality is also by necessity a concealment of another reality: 'Bringing-forth-hither brings hither out of concealment, forth into unconcealment' (Heidegger, 1977: 10). Such a process Heidegger calls poi*e*sis, from the Greek concept of 'bringing-forth'. The ancient Greeks realized this profundity about technology, argues Heidegger, and he points out what western consciousness has forgotten: that the Greek word *technē* referred to both technology and art.

Second, the absence of technology has often served as an indicator of primitivism without any sort of reflection about what one might mean firstly by technology and secondly by the primitive. So-called primitive societies such as paleolithic hunters have been shown to have been affluent and technologically advanced (Douglas, 2006: 72-76; Rutsky, 1999: 2-3; Sahlins, 1976). McQuire (2006: 255) argues that technology is read through a uniquely western historical lens; 'the presence or absence of specific technologies has often been read as a marker of cultural "backwardness"… Technology is [thought of as] something that comes from the West and does something to other people in other places, such as the "Third World" – a framework which, even when well-intentioned, denies both agency and contemporaneity to the "other"'. As an antidote, Edgeton (2006) speaks of 'technologies of poverty' such as the bidonvilles or networked and provisional 'shanty towns' in parts of India – overlooked because we favour 'rich-world' technologies.

Third, on an aesthetic level, many subcultures of high-technology as diverse as rave culture and 'new-age' science incorporate primitive icons of shamanism, esotericism, hermeticism, the occult and mythology into their philosophies, exhibiting a strange aesthetic that we could call 'technological primitivism' (Davis, 1999; Stefik, 1996)[2]. Fourth, despite the proliferation and sophistication of technologies in the west in the nineteenth and twentieth centuries, we still often associate them with the occult, the preternatural, and the uncanny (Sconce, 2000; Freud, 1925). The era of telegraphy, for example (1844 saw the first official test of an electromagnetic telegraph line), re-activated ancient and repressed fantasies about the mind coming loose from the physical body and travelling great distances without the constraints of time and physicality. In Sconce's words: '[f]or a world that had waited weeks to receive messages across the ocean, and days to receive messages from across the nation, the ability to contact London from New York in only seconds must have truly tested the limits of credulity' (Sconce, 2000: 19). The new technology of telegraphy was appropriated by the New Spiritualist movement which saw the telegraph as a high-tech 'medium'; if it could cross the Atlantic in seconds, it would surely take only another few seconds to contact the souls of the dead.

B) Technology and horror

From a visual culture perspective, visions of horror have always been interesting because they were theorised as conduits to the unconscious fears and desires that exist in the cultural imaginary (Smith and Higgins, 2000; Hardy, 1996; Russo, 1994). Despite this, the construction of horror in commercial images is under-theorised, viewed in the narrow sense of fear appeals that act to discourage or warn (Ford, 2006; Shimp and Stuart, 2004; LaTour and Rotfeld, 1997). Like the primitive, horror is a historically specific form and not an eternal constant; what constitutes horror in one age may be

2 For example, the Esalen Institute founded in California in the 1960s, and dedicated to developing radical psychology was an eclectic blend of yoga and science, but 'amidst the body oil, drug trips, and nude hot tub comminglings, the headier characters of Esalen also helped refashion the paradigm of cybernetics and information theory into a hands-on, and dispassionate approach to the new mutations of the bodymind' (Davis, 1999: 181).

completely 'unhorrific' in the next, and vice versa (Halberstam, 1998). Further, horror is an aesthetic that can often merge elements of science-fiction and primitivism, as evidenced in films such as *Johnny Mnemonic* (1995), *The Island of Dr. Moreau* (1996) and *I Am Legend* (2007). Horror is sometimes conceived of as a liberatory or avant-garde, genre because one of its functions is to disturb cultural and ideological categories we may have taken for granted. As with the trope of technology and the primitive, this may provoke a feeling of ambivalence (Jones, 2002; Tudor, 1997; Carroll, 1990). At the same time, horror may also be viewed as a genre that repeats stereotyped images of female-as-victim and female-as-horror, which maintain the apparatus of phallogocentrism (Halberstam, 1998).[3] Therefore, we argue that the genre of horror is *undecidable*; neither entirely reactionary nor entirely liberatory, it works to produce figures that contain within them an overflow of contradictory signs.

The 20th century produced a vast and complex canon of literature and film which depicts technology out of control, inducing horror in the humanist consciousness. In social life too, high-tech machines induce horror. Bruno Latour suggests that this is because technology appears to most people when it is at its finished, completed stage – appearing suddenly and already fully formed, and therefore alien and inhuman – 'fall[ing] on [our] heads like an external fate as foreign, as inhuman, as unpredictable as the olden *Fatum* of the Romans' (Latour, 1987: 15).[4] This feeling of inhumanness associated with technology makes it seem unpredictable, beyond human calculation.

Within the complex vista of contemporary identity, there is a marked trend in contemporary culture for borderline or liminal figures which are both primitive and technical – replicants, androgynes, zombies, androids, posthumans, avatars, clones, the undead and such 'almost-not-quite ontologies' (Thrift, 1998: 124) Globalisation, questions of history, social change and political movements, as well as the collapse of communism (Woodward, 1997), fundamentalism, feminism and post-communist nationalism (Braidotti 2005), global immigration flows (Rodowick, 2005), as well the massive trans-national projects of the Human Genome (Thacker, 1998) and the Digital Human (Waldby, 1995; Waldby, 2000), create new processes and quasi-objects which seem not to rest one or other side of humanist dualistic concepts. Such processes and objects confuse the distribution of values according to simple self-other dichotomies, displacing the unitary subject of classical humanism (Braidotti, 2005; Hayles, 1999; Haraway, 1997).

The possible connections between and within the terms 'mothers', 'monsters' and 'machines' are used by Braidotti to theorise alternative paradigms of identity (2000; 1997; 1996a; 1996b; 1994). By looking at the historical interconnections of these three themes, she shows how configurations between them can produce new ways of thinking

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3 '[I]t is not always so simple to tell whether the presence of Gothic registers a conservative or a progressive move' (Halberstam, 1998: 23).

4 The idea of the *Fatum* comes from ancient Rome, and it means something said or spoken (from the verb *fari*, 'to speak'). It was believed that only divinities uttered fata, mostly in poetical literature. The presence of the Fatum reminded the Romans that their lives were controlled by divine fate, a fate that was often cruel and unpredictable. Latour (1987) notes that the imagination of technology is sometimes like the Fatum of the Romans; it seems beyond human comprehension, and has a life of its own which controls human destiny.

about being human in contemporary debates (such as those concerning biotechnology and artificial reproduction), and induce theory-building on science, technology and human identity to produce paradigms of 'alternative subjectivities' (Braidotti, 1994: 1). The terms 'monsters' and 'machines' are used in the broadest senses; 'machines' referring to the scientific, political and discursive field of technology (Braidotti, 1997: 61), while 'monsters' emblematises the history and philosophy of the biological sciences, as well as their relation to difference and different bodies. For example, the Enlightenment project worked to create a comprehensive philosophical and scientific discourse which positioned people of colour, native Australians, females, slaves as 'nearly-humans' vis-à-vis the liberal human (male, white) subject. Other nearly-human creatures such as scaipods, cynocephali, tailed men and giants also inhabited the Enlightenment imaginary: '[I]n the interstices between humans and apes, there was plenty of space to locate speculative or imaginary creatures: *similititudines hominis*… beast-men, monsters with human resemblances, or examples of degeneracy' (Fernández-Armesto 2005: 66).

The posthuman has been called 'one of the most important concepts in contemporary literary theory, science studies, political philosophy, the sociology of the body, cultural and film studies, and even art theory' (Gane, 2006: 431). It is a term associated with celebratory declarations of the end of humanity as we know it, heralding an era when human being will be superseded by technical being, which, ironically, promises to vouchsafe human being for eternity. It is also used as a liberatory term which seeks to displace the arrogance of the human, humanism and the humanities as the ultimate and sole authorities of meaning. Therefore it is a nascent term that is replete with ideological positions which range from the horrific to the hopeful (Campbell et al., 2010). Horror accompanies the posthuman when seemingly immutable spaces are crossed between boundaries (animal, human, inanimate or technological). Squier (1995) examines the circulation of three images in visual culture which she argues cross the space of the immutable human being – the ectogenetic foetus, the surrogate mother and the pregnant man (Image 1). She remarks that such images serve not so much to articulate a single ideological position, as to provide a site on which positions *can be contested*.

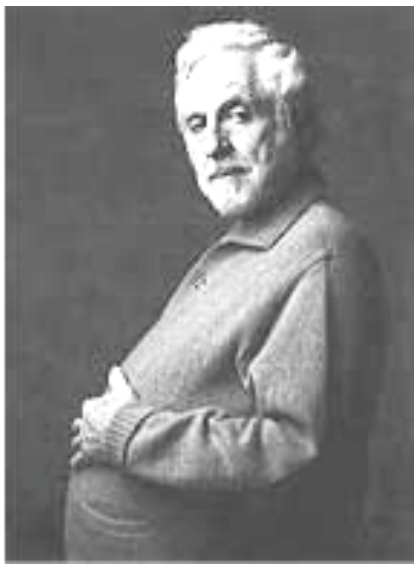

Image 1 'The Father of the Phill, Dr. Carl Djerassi as a pregnant man' (J. McDonald, 1992, in Squier, 1995: 114)

Adding to this, we argue that images which conflate the primitive, technology and horror not only contest, but also evoke, humanistic taboos of previous eras. Such an evocation-contestation dynamic is often evident in images of the pregnant men and in the fear-fantasy of miscegenation.

Monstrous logic

Having related the tropes of the primitive, technology and horror, we now place them in a wider context of studies of monsters, also known as teratology. Monsters are not just physical manifestations; the term monstrous can also characterise written texts, especially when they seem to defy canonical categories, or when their meanings erupt ordered interpretative strategies, are manifestations of this axis. Halberstam (1998), for example, uses the term 'Gothic' not simply as a genre, but to describe any type of text that makes coherent interpretation fail, because the text suffers from an overload of contradictory meanings which make it literally fall apart at the seams[5]. The trace of the horrific within the aesthetic, the primitive within the highly technological, and the inhuman in the human is evident in Gothic fiction such as Shelley's *Frankenstein* (1818), Stevenson's *Dr. Jekyll and Mr. Hyde* (1886), and Stoker's *Dracula* (1897).[6]

The monstrous is also a strategy which subverts humanist projects, especially when it defies neat categories, or when its meanings disrupt ordered interpretative strategies. Derrida's project of deconstruction invokes elements of the primitive, technological and horror; a project he describes as making people 'turn their eyes away when faced by the

5 'The production of fear in a literary text… emanates from a vertiginous excess of meaning. Gothic, in a way, refers to an ornamental excess (think of Gothic architecture – gargoyles and crazy loops and spirals)' (Halberstam, 1998: 2).

6 For example, on *Dracula*, Halberstam comments: '[h]e is monster and man, feminine and powerful, parasitical and wealthy; he is repulsive and fascinating, he exerts the consummate gaze but is scrutinised in all things, he lives forever but can be killed' (Halberstam, 1998: 88).

as-yet unnameable which is proclaiming itself, and which can do so, as is necessary when a birth is in the offing, only under the species of the nonspecies, in the formless, mute, infant and terrifying form of monstrosity' (Derrida, 1978: 293).

Milburn (2003: 603) remarks that in Derrida's work 'the figure of the monster embodies a means of thinking otherwise – a means of passing "beyond man and humanism" and reaching for other posthuman futures – that have travelled under the name of deconstruction. The "event" of the Derridean text, signalling a "rupture" with the discourses in which it gestated, terrifies with its unprecedented deformation of the normal and its threat to the boundaries of conventional thought'. Milburn draws a similarity between Derrida and Darwin: both were engaged in the practice of revealing monstrosity to the world, whether biologically through the dissolution of the human into the animal, or philosophically by the dissolution of logocentrism: '[f]or Darwin and Derrida deconstruct Eden through Satanic invasion, releasing their hideous progeny into the garden gates, and as progenitors of a teratological discourse centralising deviance and empowering the alien… Darwin and Derrida themselves become the monsters in Eden' (Milburn 2003: 609). The juxtaposing of the discourse of posthumanism with that of monstrosity reminds us that posthumanism is not concerned simply with the 'future human', but with deconstructing the human as an ancient concept (Campbell et al., 2010).

The monster is also a term used to express a social identity. According to Braidotti, we live in the times of the 'postmodern Gothic' (2005: 173), where the social imaginary of post-industrial societies produces teratological, monstrous formations – monstrous precisely because their technological character transgresses conventions of taxonomical description. Her term 'cyber-teratological' describes her fascination with the grotesque and the technological. Her mission is to analyse what she sees as the growing numbers of *non-unitary subjectivities* (Braidotti, 2005: 172) that are emerging in post-industrial society. Teratology comes from Greek *teras* (Braidotti, 1997: 61), meaning both horror and marvel, while the term 'monster' comes from the Latin *monstrare*, which means 'to show' (the scientific imperative to 'de-monstrate' is thus a derivative of vision and monstrosity). In fact, since third millennium BC Babylonian culture, monsters were used for *teratoscopy* – that is, for prediction and cosmic divination as they were regarded as sites of otherworldliness (Braidotti, 1996a: 136). Braidotti (1997; 1996a) argues that monstrosity is something that both underlines and undermines the human by analysing what she sees as three eras of monsters. Greek and Roman civilisations carried a notion of a 'race' of monsters; as an ethnic entity that were both horrific and fantastic. The Baroque and Enlightenment eras began to produce a 'scientific' discourse of monsters. During this time, monsters were viewed as something wondrous and fantastic, rare and entertaining;

> [j]ust like the madman, the dwarf and other marvels, [the monster] participates in the life of his/her town and enjoys certain privileges. For instance, dwarfs as court jesters and fools can transgress social conventions, and say and do things that 'normal' human beings cannot afford to say or do. (Braidotti, 1997: 68).

Braidotti characterises the third era of monstrosity as manifest in 'the genetic turning point in the post-nuclear era, also known as cybernetic teratology, and the making of new monsters due to the effects of toxicity and environmental pollution' (Braidotti,

1996a: 141). Thus, the conflation of the primitive, technology and horror, can be put in a wider context of a monstrous logic, which describes physical, social and philosophical monsters. We contribute to this work on teratology by introducing three concepts – meta-morphing, primal technology and proto-atavism. We will take images in contemporary visual culture to demonstrate that the cultural imaginary is preoccupied with these three concepts. We will briefly introduce two recent artefacts of visual culture – advertisements for Audi and Nike – in order to make concrete the three concepts.

Audi *Spider* (2005)

Audi *Spider* was designed by the advertising agency Lynn Fox (London) and post-produced by The Mill (London) for the launch of Audi's RS4 automobile in December 2005.[7] Their brief was to create a heavily industrialised advertisement where Audi is likened to a predator, ensnaring and devouring its rivals.

The setting is a dark, eerie, industrial space, damp and leaking. Suspended throughout are dismembered cars entombed in masses of thick, moist and choking cobwebs (Image 5). The music suddenly alerts us to a scuttling, menacing movement within one of the cocoons. The sound of the violins is cacophonous; grating and off-key, it resonates with the scurrying movement of the creature. The camera zooms closer into one of these larvae-like webs; a car-wheel which is grinding to a halt is just visible. Inside the dark tomb is the cobweb-covered dashboard of a car from whose music device a song is playing. The music stops, ending in a strangled choke. We hear and see the scuttling of a spider that moves through the cocoon frenetically, falling abruptly to the floor. The camera zooms out to reveal the huge, bulbous, shiny black spider, which resembles a black widow, with prominent, skeletal legs. It fixes itself squarely in front of the camera and lunges towards us – the outline of its fangs and laser-like eyes flash for a brief moment. As it runs toward the camera screeching, it morphs into a shiny black Audi RS4 (Image 6). The advertisement ends with Audi's iconic message, *Vorsprung durch Technik* written in Gothic-style jagged, suspended cobwebs.

7 During this time Audi also sponsored a series of films in UK entitled 'Sinister Cinema', in association with Guardian press and Odeon Cinemas. The website includes analysis of the horror music for Audi's *Spider* advertisement (2005), as well as an investigation into horror film in general. [http://film.guardian.co.uk/sinistercinema]

Image 5 Audi *Spider* (Lynn Fox, London, 2005)

Image 6 Audi *Spider*: Black Widow sequence (Lynn Fox, London, 2005)

Nike *Mutant Foot* (2005)

Nike's *Mutant Foot* is a television and film commercial created by Publicis Mojo (Melbourne), and post-produced by The Mill (London), in August 2005. The brief specified a hybrid of the Nike Free Running shoe and a human foot. The aim of the advertisement was to convey the feeling that running with these shoes is like running in bare feet. The advertisement is described by the post-production agency as follows:

> The Mill London [has] created what might be the "future of the foot" for the new Nike *Free Running* shoe commercial. Showing the potential evolution of the human foot, the spot shows us that in time we may evolve into only having one big toe with more flexibility and possibly gills so

that our feet can 'breathe'… This "organic thing" is living and breathing in a world surrounded by micro organisms reacting to its movements.

Image 7 Nike, Mutant Foot (Publicis Mojo, Melbourne 2005)

Metamorphing – Fantasies of flow and a critique of becoming

In this next section, we will explore what these two artefacts of visual culture, dealing with the tropes of the primitive, technology and horror, can tell us about the posthuman imaginary today.

While Cartesian humanist logic speaks of a world of fixed entities and cleanly defined ontological systems, posthumanism is often characterised as polymorphic unfixity, articulating a logic of identity as decentred, ontologically confusing and in a state of transition (Braidotti, 2006; Badmington, 2003; Halberstam and Livingston, 1995; Haraway, 1989). In many of the images that collapse the primitive, technology and horror, we see a dynamic movement in the image from one entity to another. What does this tell us about the experience of the world of high-technology? In this section we will explore metamorphosis as an aesthetic convention. We will argue that the concept of morphing, or *flow*, is almost universally regarded as positive, or at least apolitical, in poststructural theory. We distinguish two types of metamorphosis, which we will call morphing and mutating. These two types of metamorphosis tell us about contradictory fantasies of posthuman existence.

Morphing

In images that contain the primitive, technology and horror, many types of boundary are transgressed. The term 'morphing' is used to describe the feats of an imagined technological posthumanism which cruises effortlessly and seamlessly through ontologies. One of the most iconic examples from film is the T1000 Terminator in the second of the *Terminator* film trilogy. T1000 is terrifying because it can instantly morph into anything and anyone in its vicinity. An apt corollary in advertising is

Nissan's *Pathfinder* (2006, image 9), which imagines a world where technology does not battle with natures; it moves in and out of them. Nissan's automobile envisages a shape-shifting technology which seamlessly moves between the animal and technical. This type of metamorphosis tells us something crucial about the cultural imagination of the posthuman. The automobile metamorphoses without any trace of its metamorphosis. It bears no marks, scratches, dents or damage, despite the impression of a mighty, industrialised rendering of one thing into another. This is a future world of ontological mobility; entities are not fixed; their morphing into other entities is not painful, but a natural, instantaneous reaction to their environment.

Image 8 'Shifting Capabilities' Nissan *Pathfinder* (TWBA, Paris, 2006)

Digital morphing is a common production device in contemporary visual culture, and it can have a distinctly uncanny effect. In *Faces*, (BBC, 2005) we see a visual representation of the experience of digital television (Image 9). In the advertisement, many small human heads morph together to form a giant, disembodied head that roams across hilly countryside.

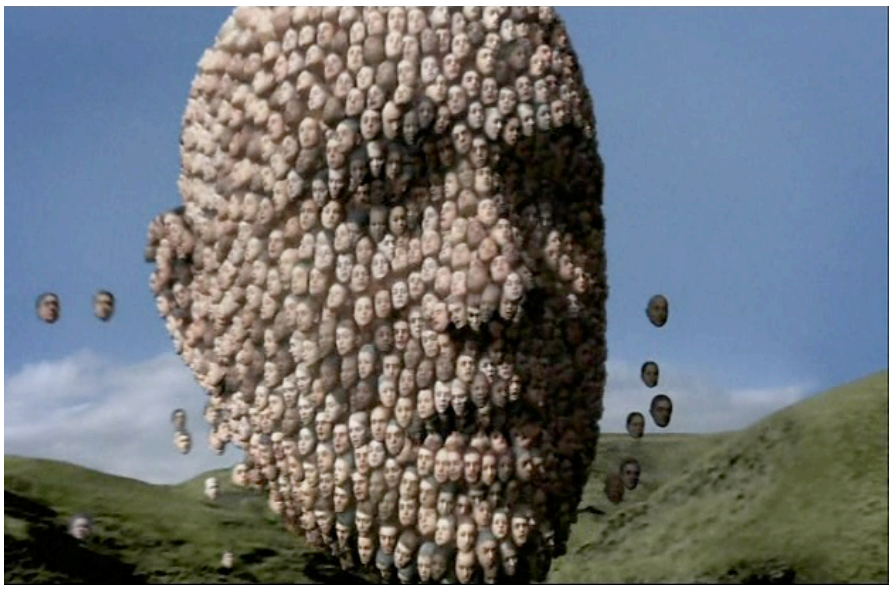

Image 9 BBC Digital *Faces* (Duckworth, Finn, Grubb and Waters, London, 2005)

The first shot in the advertisement is a close-up of a single head, which asks: 'Is it me, or does everyone seem to have digital television nowadays?' The questioning of self is more than a rhetorical strategy; the camera zooms out to reveal many human heads, amalgamating to form a giant, larger head. What is horrific about such an image? Why did this advertisement evoke such a strong repulsion in its audience?[8] This image works to disrupt the very icon of humanist thought – the head. The miniature heads seem frighteningly disembodied, while the meta-head morphs from shape to shape with many heads trailing behind. Both strategies emphasise the indistinctness of this head-like shape; an affront to a humanist sensibility of integral, bounded being. The eye sockets and the lips of the meta-head are especially horrific; instead of flesh and sinew they are filled with tiny selves. This image may be situated within the genealogy of monstrous and mythical forms – that of the homunculus. The homunculus was popular during the Hermetic revival of the Renaissance when the Swiss scholar Paracelsus (1493–1541) imagined that he had created a false human. That the human could create a 'little human' or homunculus by 'unnatural' means is a recurrent idea in literature and scientific endeavour.

A central debate in posthuman literature is whether consciousness has qualities that make it different from a material event. In other words, debates about humanness are broadly monist or dualist in approach. Dualistic notions argue that while there is indeed a material dimension to the human individual, certain qualities (which go under the various titles of 'spirit', 'consciousness', 'soul' or 'essence') exist on a plane which is beyond material analysis. The 'mind', or spirit, it is argued, is a uniquely human attribute which is separate from the brain, separate from mere material. A monist conception, on the other hand, argues that mind and other 'immaterial' processes are identical to any other brain process – they are essentially made up of the same stuff. A

8 The BBC *Faces* advertisement for digital television was removed in December 2005 after the British Advertising Association acknowledged complaints of its disturbing character.

posthumanist view would argue that all mental thought, all consciousness and spirit, can be attrituted to the operation of micro-material processes distributed in the autopoietic (self-creating) body. In *Digital Faces*, we are confronted with a visualisation of the idea that the self possesses no central consciousness, but instead is a programme by many small autonomous, self-running programmes that can build to form a decentralised system (Deleuze and Guattari, 2004). This is why *Faces* is so disturbing on a level which is difficult to articulate; it represents the fear that the self is an amalgam of autonomous programmes – diffuse, material, beyond centralised control and above all, indistinguishable from the inside of a computer.

Images such as these speak about how morphing defies ontological fixity, showing how technology does not oppose nature, but simulates it (*Pathfinder*), how the morph causes a radical splintering of consciousness (*Faces*), and how it is a visualisation not of *being*, but of *becoming*. We argue that the dynamical aspect of existence often mobilises an attendant implicit belief that this is necessarily a liberatory view. Flow is regarded as the *sine qua non* of existence, and it is almost universally coded as positive. For example, in pointing out that the morph in contemporary visual culture enacts a logic of 'quick-change' which is embedded in our contemporary engagement with the entertainment and computer industries, Vivian Sobchack (2002) argues that morphing creatures have a deconstructive ability to destabilise dominant western metaphysical concepts. As a result, the social imaginary of the west is gripped by the imagination of excession; where entities slip and slide from one ontology to the other. Morphing is intimately related to the logic of high-technology. Technology theorists such as Donna Haraway (1997), Rosi Braidotti (2005) and Katherine Hayles (2005) theorise how contemporary technologies have caused many systems, objects and bodies to exceed their boundaries. Many embodiments of the era of high-technology are difficult to categorise; we are surrounded with artefacts that are collapsing humanist categories of existence, such as the cyborg, the foetus, the ecosystem, the database, the genome (Haraway, 1997), and the cellular automaton (Hayles 2005: 239–244) to mention but a few. As a result, the social imaginary of the west is gripped by the imagination of excession; where entities slip and slide from one ontology to the other, resulting in a loss of structure and a new sensibility of process and flux which is considered liberatory. In the next section, we consider the logic of flow and use the term 'mutating' as an antidote to the assertion that flow is necessarily positive.

Mutating

We distinguish between two fantasies of the posthuman that are at work in the cultural imaginary. The term 'mutating' is used to describe an aspect of the posthuman different from that of morphing. These images are also concerned with the nexus of the primitive, technology and horror, and also undergo transformation, but they depict the visceral, painful and embodied experience that results from ontological boundary clashes. We can see that mutation conveys the other side of the posthuman utopian imagination by hinting at the pain and difficulty of the flesh in becoming its ontological Other. Some critical theorists argue that technological imagery is ideologically utopian – portraying a simple and painless ascent into a silicon existence that ignores the embodied realities of the subject (Gabilondo, 2002; Gromala, 1996; Balsamo, 1995). We introduce here the distinction between *morphing* and *mutating* in order to highlight a morphing into other

entities that is seamless and effortless, but also a *mutating* into otherness. Instead of drawing attention to the ability of technology to move effortlessly between ontologies, mutation is a concept which 'stops the flow'[9] or presents the difficulty involved in considering flow as pure liberatory experience. The posthuman is a double-edged sword. On the one hand it mobilisies a sense of co-extensive, systemic flow between and through human and nonhuman. This is an ethical imperative, because it considers other perspectives that are not 'purely human' or 'purely animal' or 'purely machine', producing new modalities of existence. But it does not pay attention to other possible conundrums that a sensibility of flow might bring about. Two possible conundrums are the importance and place of inertia, and the pain of flow. Here we will discuss the pain of flow. (See Campbell et al., forthcoming, on the logic of inertia.)

As the name suggests, Nike *Mutant Foot* is concerned with the trope of mutation. The advertisement depicts a runner in a dark, undefined environment which is afloat with 'micro-organic particles'. Its foot is a monstrous hybrid of what seems to be a fowl, a human foot and a high-tech running shoe. The small toes have merged, and some of the worn toenails are missing. The big toe protrudes and it is heavily calloused (Image 7). The skin is stretched over bright blue veins that bulge and protrude all over the front of the foot, and a black material is enmeshed along the midfoot. The entire sole and the sides of the feet are serrated. The foot is an exemplary embodiment of the primitive, technology and horror.

We could say that this future foot reminds us of a *chimera*, a term biotechnological discourse uses to refer to the evolution of elements that do not belong together. But the term has a much older history in Greek mythology as a savage beast that was part lion, part goat and part snake – a 'triple hybridity' that evokes the defiance of the 'natural order'. Biotechnological discourse still uses the term 'mutant' or 'chimera' to refer to genes that threaten to exceed a conceptual boundary of what is 'normal' or 'benign'. Unlike the other fantasies of flow, the mutant foot evokes a worn and laboured transition from human to posthuman which leaves behind traces of pain, but also a strong connotation that an entity has defied the 'natural order', and has suffered for it. The image of the 'foot of the future' contains within it the supplement of its embodied, visceral, human existence, a potent reminder of the human within the posthuman

Primal technology

In this next section we show how a conflation of the primitive, technology and horror contradicts the humanist logic of technology as a (i) modern, (ii) progressive, (iii) clean (iv) nonalive force.

A commonly held and seldom interrogated notion about technology is that it is an instrument which accords the human with a gradual ascent towards increasing civilisation, linear progress and power over her or his environment. But looking at contemporary images which coalesce the tropes of the primitive, technology and horror

9 In conversation with Dr. Caitríona Leahy, Department of Germanic Studies, Trinity College, Dublin, whose forthcoming book takes difficulty as its central concept.

can offer alternative versions of this humanist legacy. It can work to encourage a seemingly paradoxical scene of technology as a primal, instinctual force. We could call this aesthetic *primal technology*. The images we consider in this section can be subdivided. Two aesthetic types of primal technology – 'dirty technology', and 'technological primitivism' – offer an alternative, post-humanist understanding of technology.

Dirty technology

Looking closely at Audi *Spider*, we notice that the industrial environment is visually resonant with the strange spaceship in which the alien lifeform is found in Ridley Scott's film trilogy *Alien* (1979). Like the spaceship Nostromo in *Alien*, the cocooned, labyrinthine formations of the spider's layer seem to be made of a combination of inorganic and organic material (see Creed, 1998).

One of the most striking similarities between *Alien* and *Spider* is that in both, we gaze on a contradictory vision of technology as *dirty*. What can we infer from such an aesthetic? In the contemporary western world, we intuitively imagine that the further technology advances, the 'cleaner' it becomes. Futuristic scenes of high-technology are often depicted with spotless, laboratory-like minimalist functionality, as in the hibernation/beds in *2001: A Space Odyssey* (1968) or the cryotube beds of the astronauts on board the *Nostromo* in *Alien* (1979). In contrast, the alien's technology in *Alien* is superior to that of the human's, despite the fact that (or, more accurately, because) it possesses an uncanny, abject viscerality, exemplified in the discovery of the alien's egg-filled, dark and matted lair.. Similarly, *Spider* depicts a lair swathed in a thick, cobweb-like substance. Together with the dark dampness of the scene, a subterranean, visceral technology is evoked that is more powerful than the man-made car.

Dirty technology works by implying that technology is not a sterile, inanimate instrument that the human has mastery over. Rather, the dirt and dampness of dirty technology suggest an animate, sweating, breathing life-force – a concept which disrupts our normative, humanistically-inherited and instrumental perspective of technology by forcing us to consider *technology as life*. Dirty technology is an aesthetic which combines the sterile, pristine and inorganic efficiency of technology with the visceral, leaking decaying disorganisation of animal life. This induces horror because it shows technology covered in its own dirt, which implies life, which in turn implies disorganisation, which implies a disintegration of borders between 'us' (bounded) and 'them' (unbounded), which implies loss of control. Because this technology is soiled, damp and leaking, it disrupts our linear perspective of technology as an inherently progressive phenomenon. Audi *Spider* is effective in inducing horror because the damp, dark and leaking space containing the moulding cocoons of the spider and the clean, cold, untouched technological artefact are one and the same – it seems that the motivations, goals or logic of this life form cannot be recovered within the economy of the human.

Technological primitivism

Technological primitivism is concerned with the ways in which 'primitive' icons are used in discourses of high-technology. Combining images of the primitive with high-technology creates undecidability in meaning as the technological merges into the mythological, and the ancient merges with the modern. We use the term 'technological primitivism' to refer to the aesthetic that technology produces in fusing the ancient (often in the portrayal of a symbolically resonant ancient life-source) with the high-tech (often in the form of a 'technical' life-source). Such a logic is exemplified in David Cronenberg's science-fiction horror *eXistenZ* (1999), where technological hardware and software for computer games have been replaced with biotechnology – the pod is plugged into the base of the spine using an umbilical-cord 'bioport'. The games console (the 'pod') is envisioned as a high-tech-primitive blend of 'amphibian eggs' and 'synthetic DNA'.

The most obvious indicator of technological primitivism in Audi *Spider* is the spider itself, which is an index of the logic of technoculture. The spider links the world of the primitive with high-technology – not just in its metamorphosis into automobile, but in its multiple and contradictory genealogy. The spider is a recurring symbol of primitive thought, one that reappears in fairy tales, surrealist painting and psychoanalytical theory. Freud, for example, argued that the sight of the spider can induce a crisis of neurotic anxiety. This is evidenced in the nursery rhyme of Miss Muffet or in the labyrinths of modern life (Campbell, 2000: 73). Campbell (2000), citing Freud, argues that this fear comes from an unconscious association of the spider with the image of the phallic mother and the web, the spiral web, which threatens to engulf us, swallowing us whole into her. A similar argument has been used to describe the alien in Ridley Scott's trilogy as a technologised embodiment of the phallic mother, initiating a salient set of analogies between technology and the concept of the monstrous feminine (Bundtzen, 2000; Constable, 1999; Creed, 1998).

Although this is the most recognisable symbology of the spider, it is not the only one. Two centuries ago, poisonous spiders were not regarded only with fear, but were also considered the technical forefront of medicine, used for the treatment of smallpox, plague and fever (Cloudsley-Thompson, 1987). The mythology of Arachne[10] connects the spider to the ancient activity of weaving, but also connects the primitive to high-technology. The computer emerges out of the history of weaving; the first computers were based on the logic of the loom, which so often was said to be the quintessence of women's work (Plant, 1995; Babbage, 1864), and from which the high-technology metaphors of the World Wide Web and the matrix[11] emanate. In fact, contemporary technoculture is an era of *insectophilia*, or a love of insects and arachnids; spiders, ants,

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10 In Greek mythology, Arachne, a young woman, was so skilful at weaving that she was rash enough to challenge the goddess Athene to a contest. She was transformed into a spider and was doomed to weave forever.

11 And each of these words in turn contains folds of meaning that demonstrate the primitive and high-tech collapse. The word 'matrix' for example comes from the Latin *mater*, meaning womb (Lupton, 1995). The matrix is a undecidable term in technoculture, possessing the potential to nurture and to trap (as in the recent film trilogy *The Matrix* 1999, 2003, 2003, where the Matrix is a massive computer simulation which uses humans as raw bio-material).

and bees appear with regularity in images of high-technology, enlisted because they embody the logic of high-technology which values decentredness, microprocessing and swarm intelligence. Bees, ants, spiders and worms provide ways of conceiving life in a posthuman era. Colonies, swarms and teems create metaphors to understand decentredness, rhizomaticity, distribution and microprocessing. This view has also appeared in social theory, where insects of all kinds become tropes for existence in a technocultural world. The insect acts as a metaphor and an epistemology (for example in Brooks, 2002; 1991; 1989), as well as an ontology (Deleuze and Guattari, 2004; DeLanda, 1997: 267–8; Shaviro, 1995; Haraway, 1995b) which in turn informs an insect aesthetic (Stelarc, 2006; Parikka, 2005). Audi *Spider* collapses the ancient into the high-tech, reflecting attempts in the cultural imagination to understand technology as a force in a longer line of forces and fantasies. It is also overdetermined, as its signifiers connote long histories of mythical, technological and political dramas that contradict, disrupt and confirm the dominant narrative.

Proto-atavism

In this section, the progressivist nature of humanist technology is questioned. Atavism is a concept that refers to how supposedly primitive evolutionary traits which had disappeared generations ago reappear in contemporary human or animal life. It has been used as a biological and political discourse to account for 'other' people who exhibit evolutionary traits of a former time but still exist in the present. Reversing this concept, we could argue that the images which conflate the primitive, technology and horror present a 'proto-atavism', in that they exhibit *future* evolutionary traits in the present. This concept undermines the humanist ideal of the human approaching a state of teleological perfection through an orderly ascent of increasing complexity and sophistication, as the tropes of dirty technology and technological primitivism also demonstrate. Proto-atavism functions as a way of collapsing the quality of linear time. As such, it presents technological progress as *nonlinear*, punctuated and multiple. In this way, proto-atavism contains a strong echo of Manuel de Landa's conception of nonlinear history:

> much as a given chemical compound (water, for example) may exist in several distinct states (solid, liquid, or gas) and may switch from a stable state to stable state at critical points in the intensity of a temperature (called phase transitions), so a human society may be seen as a 'material' capable of undergoing these changes of state… if the different 'stages' of human history were indeed brought about by phase transitions, then they are not 'stages' at all – that is, progressive developmental steps, each better than the previous one, and indeed leaving the previous one behind. On the contrary, much as water's solid, liquid, and gas phases may coexist, so each new human phase simply added itself to the other ones, coexisting and interacting with them without leaving them in the past. (DeLanda, 1997: 16-17)

But by exhibiting atavistic traits of the evolutionary past and future, such figures confuse the linear progress of evolution, and instead argue that past, present and future are humanist responses to disorder. In a posthuman imaginary, all three 'stages' coexist. Proto-atavism is the argument that multiple paradigms of life exist on the peripheries of humanist life. Ancient and future evolutionary traits exist in the *present* – both in the aesthetic imagination and in everyday life. This has one important consequence; it shows us how (human) life may not be a singular progression but a cacophony of co-

existing, interacting states of past, present *and* future existences with no recourse to a single, reassuring Origin.

One visual convention of this kind of thinking of multiple life states is found in images which make it difficult to trace their lineage. Toffoletti (2004; 2005) reminds us that the image-saturated world often constructs visual representations which are ambivalent, which often do not have a signifier in an external 'real' world. These images exist – in Baudrillard's rhetoric – as a *simulation*; an object that is a copy of something which does not 'exist' (Baudrillard, 1994). Toffoletti's analysis of artist Patricia Puccini's *Protein Lattice* (Image 10) argues for visual readings which produce 'potentialities, possibilities or processes beyond a dichotomy of what is real and what is illusion' (Toffoletti, 2003:2). The images we see in the nexus of the primitive, technology and horror are those which 'suffer' from origin horror; they refuse the secure telos of an Origin which can link back to a primary source of either technology or organicism (see Wills, 2009). Nike's *Mutant Foot* suffers from origin horror. And in turn it horrifies, firstly because it does not have an analogous representative in our contemporary world, but more importantly, we cannot trace it back to an originary, ideal category of existence, in organism or in technology. Such images exceed the bounds of description.

Image 10 Patricia Puccini *Protein Lattice* (1997), Toffoletti, 2005

Conclusion: A posthuman biology

Biology as the science of life and the study of living organisms has been extremely influential in deciding the borders of existence – where life begins and ends. By way of summarising the concepts that were introduced in this article, we could think about a

seemingly paradoxical concept – a posthuman biology – as a potential theory that focuses on alternative ways to think about life at a time when technology is creating new paradigms of life, as well as investigating and revising long-established assumptions about humanist life. Shaviro (1995–1997) remarks that we live in an age of technosubjectivity, where biologists such as Margulis theorise the symbiotic basis of eukaryotic cells, and Dawkins posits the existence of selfish genes and the extended phenotype. Contemporary philosophers such as Deleuze and Guattari (2004) and sociologists such as Lash (2001), as well as literary writers such as Burroughs, and film directors in the vein of Cronenberg have attempted to invent paradigms of life in the interstices of the organic and machinic. Systems theory radically subsumes human life into an all-encompassing concept of system, of which the human is merely a 'psychic system', where the only important unit of analysis is systems ('human', 'cell', 'society', 'the law') which share similar abilities (Luhmann, 1995; Maturana and Varela, 1980). Hard science and science-fiction both become legitimate sites to explore ideas about life that contravene the taken-for-granted dichotomous notions of singularity and plurality, natural and technical, bounded and dispersed. These formulations abound in contemporary western bio-fiction, from astrologist Sagan's (1992) notion of a 'metametazoa' – a multiple creature afloat in the 'onmisexuality' of bacterial exchange, to Octavia Butler's acclaimed science fiction trilogy *Xenogenesis*, which imagines posthuman, polysexual interspecies reproduction, which she calls xenogenesis. In *The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others* (1995), Haraway calls for 'the generation of novel forms – [which] need not be imagined in the stodgy bipolar terms of hominids', and terms this vision 'differential artifactualism' – a diffractive, interruptive, mutative (anti-reflective), and indeed to humanist eyes, monstrous logic (Haraway, 1995a: 299, 300). Differential artifactualism makes ontological room for the idea of *naturecultures*; for those objects in the world that science has either condemned as uncanny, monstrous or exceptional, or has simply tried to tame and move as far away as possible, categorising them into essential differences because anything else was quite simply monstrous.

Such conceptions of life exist on the edges of humanist life. Thacker (2008) calls this *biophilosophy*, and talks about some of the ways life overwhelms the rigidity of humanist life. He speaks for example of 'extrinsic life', or the kinds of life that cannot be contained inside itself – such as the epidemic 'which cannot be limited to the individual organism, for its very nature is to pass between organisms, and increasingly, to spread across species borders (and national boundaries)' (Thacker, 2008). To this, he adds concepts such as 'lifelike death' and 'swarm intelligence' which seem to depict more accurately the strangeness of life in an era that is technological.

For her part, Haraway (1995b) is fascinated in how even humble entities in existence in our contemporary world fly in the face of humanist life concepts such as unity and agency. She takes as her extended example a rather humble lifeform – the *Mixotricha paradoxa* – a creature that exists in the hindgut of a South Australian termite. This lifeform is a protist – a classification of life that does not belong to the animal, plant,

fungus or bacteria kingdoms[12]. She describes the amazing transgression of conventional life systems of the *Mixotricha Paradoxa*:

> a mixed up, paradoxical, microscopic bit of 'hair' (*trichos*)… a nucleated microbe with five distinct kinds of internal and external prokaryotic symbionts, including two species of motile spirochetes, which live in various degrees of structural and functional integration with their host… Opportunists all, they are nested in each other's tissues in a myriad of ways that make words like competition and cooperation, or individual and collective, fall into the trash heap of pallid metaphors and bad ontology. (Haraway, 1995b: xvii-xviii)

Literary and scientific works which theorise the posthuman sometimes blend the discourses of the primitive, technology and horror to explain or explore various accounts of the posthuman condition. Posthuman biology focuses on alternative ways to think about life at a time when technology is creating new paradigms of life as well as investigating and revising long-established assumptions about humanist life. A posthuman biology is the argument that the monolith of humanist life is myopic. By thinking of the edges of our conceptions of life, we live in a time where a posthuman biology is not only an interesting suggestion, but an essentially ethical precondition of life in high-technology.

In this paper, we are interested in adding to these diverse concerns by introduction the term 'posthuman biology'. We think that images which conflate the tropes of the primitive, technology and horror are an interesting starting point. They express the state of the posthuman imagination by at once critiquing and emphasising its fundamental concerns. We introduce a number of terms to help us think through the posthuman imaginary. The first – metamorphing – relates how the background to much posthuman theory is premised on the liberatory potential of *flow*. Processes, objects and living systems are thought to be in a constant state of becoming. We critique this aspect by asserting that flow is not always a liberatory metaphor. A politics or logic of inertia is needed as an antidote to the contemporary politics of flow. This is evident in areas as diverse as the materials economy, and studies on disposal (See Campbell et al., forthcoming). Second, the concept of primal technology is introduced as a way to think differently about the predominantly humanist logic of technology that exists in the western world today. It argues that technology is not always a progressive, civilising and inanimate force. 'Primal technology' injects technology with a posthuman logic, arguing that it is a destructive-constructive, progressive-regressive, rich-poor, lively-inanimate force in the world. Finally, the concept of proto-atavism attempts to be a posthuman antidote to the humanist concept of atavism (i.e. that evolutionary traits from the past can exist in the present). By arguing that future traits can exist in the present, proto-atavism seeks out the modes of living that exist at the edges of humanist life (Thacker, 2008). A posthuman biology is the argument that the monolith of humanist life is myopic. There are ethical reasons for proposing so. It is through observing the high-tech (cellular automata, genome) and ancient (Mixotricha Paradoxa) and fundamentally posthuman ways of being in the world that humans will acknowledge their place in it.

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12 Algae, slime moulds, amoebae and ciliates are all protists, which Haraway says 'constitute a kingdom of their own dubious morphology' (Haraway, 1995b: xviii).

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