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'Sing it for Me': Posthuman Ventriloquism in Recent Popular Music

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A famous scene in the 1968 film *2001: A Space Odyssey* shows the lone surviving astronaut, Dave, deep within the memory banks of the ship's computer, HAL (short for Heuristically programmed Algorithmic computer). Dave is methodically disabling HAL's higher brain functions after the computer caused the deaths of the crew because he thought that their human fallibility posed a danger to the mission. With each turn of the screw, we hear HAL's calmly pleading voice as he feels his consciousness slipping away. In contrast to the overall cool tone of the film – and of Stanley Kubrick's oeuvre in general – this is a moment of great emotional intensity. But strikingly it is the broken and dying machine that is expressive, not the astronaut, who remains mostly silent, encapsulated in a reflective plastic shell, floating in the blood-red organic space within HAL's brain. We can only sense Dave's agitation through his nervous glances and the amplified sounds of his irregular breathing, superimposed on the sustained hiss in the background. When he does speak, it is in a thin, clipped voice processed through the microphone in his helmet, while HAL's voice is direct and unmediated, filling the space just as we hear our own voices resonating inside our heads. The final stage of the lobotomy is marked by HAL's sudden regression through memory to the day of his first public demonstration as he sings the song 'Daisy Bell' about a bicycle built for two. Nothing in the film has prepared us for his last words to be a sentimental song from long-lost times. But, just as important, HAL's swansong also marks the last time Dave speaks in the film: his final words before his cosmic journey when he leaves technology and humanity behind are 'Sing it for me.'[1]

Now that 2001 has actually come and gone, many of the film's predictions about the external transformations of our existence through technology appear quite off the mark: routine tourist travel in space, the colonization of the moon and a manned flight to Jupiter are still the stuff of science fiction. But Stanley Kubrick and Arthur C. Clarke's vision of the extent to which our internal life would be colonized by technology was, if anything, too cautious. As the proliferation of images of cyborgs, androids, artificial reality and cloning makes clear, the

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[1] See sound clip 1 at <www.jrma.oupjournals.org>. From *2001: A Space Odyssey*. © 1968 Turner Entertainment Co., a Time Warner Company. For more on the use of voice in *2001*, see Michel Chion, *Kubrick's Cinema Odyssey* (London, 2001).

borders between an authentic human presence and the machine are becoming increasingly permeable and unstable.[2] When Kubrick made *2001*, it still seemed possible to imagine a future human evolution beyond any technological reliance. Significantly, the project he was working on at the time of his death in 1999 concerned artificial intelligence. In Steven Spielberg's realization of the project in *A.I.: Artificial Intelligence*, released in 2001, a dysfunctional couple grieving for their only child, who is languishing in a coma, adopt an android boy that is programmed to love the mother unconditionally and for ever. But when the child returns to health, the robot is abandoned by the mother who becomes incapable of loving him in return. The focus of the film is the quest of the robot, significantly also named David, to regain her love by being transformed, like Pinocchio, into a real boy. The shift of emotional expression from the human to the technological realm is almost complete: throughout the film humans range from self-absorbed to monstrously cruel, while only the androids are capable of love.

In no aspect of our lives has the penetration of the human by machines been more complete than in music. Every stage of production, distribution and consumption in the musical life of the industrialized world has been so permeated by technology that we no longer even recognize complex devices such as a piano as technological artefacts,[3] while at the same time the idea of a 'piano' now spans the range between the shiny black assemblages of wood, metal and plastic (or ivory) in our living rooms to the music software triggering piano samples on a laptop computer. Music circulates through manifold layers of mechanical devices, electronics and digital translations in the long passage from its origins in a musician's mental and embodied conception to our eardrums. That music is being made from the sounds of medical procedures that modify the body – the slurping of liposuction or the grinding of cartilage – is more a shift in degree than a change in kind.[4]

It is at the level of the voice that we are most aware of this mechanization. Indeed, Dave's request for HAL to 'sing it for me' has been answered by an astonishing proliferation in our cultural terrain of sampled, modified and artificially generated voices. We routinely encounter automated voices on the phone; we are spoken to by our cars and appliances; in the year 2001, the AT&T corporation

[2] For some examples see Elaine L. Graham, *Representations of the Post/Human: Monsters, Aliens and Others in Popular Culture* (New Brunswick, NJ, 2002); *Artificial Humans: Manic Machines Controlled Bodies*, ed. Rolf Aurich *et al.* (Berlin, 2000); *Robosapiens: Evolution of a New Species*, ed. Peter Menzel and Faith D'Aluisio (Cambridge, MA, 2000); *The Cyborg Handbook*, ed. Chris Hables Gray (New York and London, 1995); and Victoria Nelson, *The Secret Life of Puppets* (Cambridge, 2002).

[3] For wide-ranging studies of the interactions of culture and musical technologies see Timothy D. Taylor, *Strange Sounds: Music, Technology, and Culture* (New York, 2001), and Paul Théberge, *Any Sound You Can Imagine: Making Music/Consuming Technology* (Hanover, NH, and London, 1997).

[4] The piece *California Rhinoplasty* from Matmos, *A Chance to Cut is a Chance to Cure* (2001), combines the sound of a nose flute with 'recordings of plastic surgeries performed in California: rhinoplasty, endoscopic forehead lift, chin implant'. Marc Flanagan, 'Aural Surgeons', *Artbyte* (September–October 2001), 50–9 (p. 55).

announced its 'Natural Voices' software, claiming it to be capable of reproducing any voice, even of bringing 'the voices of long-dead celebrities back to life'.[5] The complex blurring of man and machine through voice and song in this scene from *2001* prefigures a broad range of contemporary music that generates meaning by exploring and destabilizing the borders between authentic human presence and the technological. In many areas of recent music, the unaltered human voice has become an endangered species. Manipulations and simulations of the voice appear in several different forms in popular music, paralleling the introduction of new technologies or new ways of using old technologies.[6] There are groups that sing almost exclusively through vocoder-like devices that make possible a kind of ventriloquism through which a musician can sing or speak into a microphone and modulate a synthesized sound (Boards of Canada, Daft Punk, Air); a broad range of hip-hop and electronic dance music relies on vocal samples and voices lifted off vinyl (DJ Shadow, X-ecutioners, Public Enemy, Fatboy Slim); while the digital modulation of vocal pitches with the Autotuner (as in very successful recordings by Madonna and Cher) has become so prevalent as to be called 'one of the safest, maybe laziest, means of guaranteeing chart success'.[7]

In this article I illustrate the broad emergence of such techniques into the popular imagination with recent songs by Radiohead and Moby that stage these border crossings in particularly vivid ways through the opposition of human voices that are sampled and repeated in the form of constant loops against highly processed or digitally generated speech that sounds as though a machine were speaking to us. More specifically, I am interested in how and why in these songs, as with HAL's final moments in *2001*, it is the technological sphere that is made the locus of expression, while the human voices are mechanized, drained of subjectivity, turned into signs that circulate as subroutines of a larger system. Of course, it goes almost without saying that in these examples the collision of the human loops and sad machines is a staged narrative. Behind the computer voices, at least in the examples I am discussing here, there is always a human presence pulling the strings, always, as in *The Wizard of Oz*, a man – or sometimes a woman – behind the curtain. These pieces, moreover, are part of a long history of interest in human/machine interactions in association with music, with some important milestones being eighteenth-century musical automata, the misogynist military fantasies of the Italian futurists, and the Weimar-era vogue for mechanical art and the burgeoning

[5] Lisa Guernsey, 'Software is Called Capable of Copying any Human Voice', *New York Times*, 23 July 2001, A1.

[6] Susana Loza makes a start at a typology of vocal processing, including the 'cut-up', the 'Moebius loop', the '"Planet Rock"/electro effect', 'playing with speed' and the 'diva loop'. Susana Loza, 'Sampling (Hetero)sexuality: Diva-ness and Discipline in Electronic Dance Music', *Popular Music*, 20 (2001), 349–57 (pp. 349–50).

[7] Kay Dickinson, '"Believe"? Vocoders, Digitalised Female Identity and Camp', *Popular Music*, 20 (2001), 333–47 (p. 333). While my focus here is popular music, related developments could be traced in the work of many concert-music composers working with digital technology, including Steve Reich and Paul Lansky.

technologies of film, radio and recording.[8] That this development has deep historical roots is evident in HAL's song 'Daisy Bell' from the 1890s, which already presents a peculiar mediation of the human and the technological through the device of the bicycle built for two – certainly an appropriate way for a computer to imagine love.

Yet, as a growing literature has argued, the specific forms such ventriloquism has taken in recent music can be linked to broader cultural changes associated with the digital technologies that are transforming our sense of reality, subjectivity and the human. The most extreme manifestation of this process is the figure of the cyborg – a human/machine hybrid – which has become a central imaginative resource in art, literature and criticism as a means of reflecting on the anxieties and possibilities of what it means to be human in the increasingly technologically mediated space of industrially developed nations. In 'A Cyborg Manifesto', Donna Haraway describes earlier representations of the interaction of technology and humans as reflecting 'an essential dualism between materialism and idealism'. 'Now', she writes, 'we are not so sure':

> Late twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply to organisms and machines. Our machines are disturbingly lively, and we ourselves frighteningly inert.[9]

Approaching these examples from Radiohead and Moby as figurative or literal cyborg systems not only can illuminate the increasingly close interdependence of human and machine in a wide range of recent music, but also has implications for how both poles in the relationship are being reconfigured through the process of their fusion. As Susana Loza writes of the 'cyborg, fembot, and posthuman', 'these techno-organic entities traverse the space between desire and dread; their indeterminate forms simultaneously destabilize and reconfigure the dualistic limits of liberal humanist subjectivity'.[10] These pieces – products of a rock band that relinquishes its voice to a computer and a 'techno' DJ striving to make mechanized dance music sing – can illustrate some ways musicians use the increasingly prevalent technological ventriloquism of these posthuman voices to chart the convulsions at the boundaries of race, gender and the human.

[8] See Annette Richards, 'Automatic Genius: Mozart and the Mechanical Sublime', *Music and Letters*, 80 (1999), 366–89; Carolyn Abbate, 'Outside Ravel's Tomb', *Journal of the American Musicological Society*, 52 (1999), 465–530; Sadie Plant, *Zeros and Ones: Digital Women and the New Technoculture* (New York, 1997), 85–6; Catherine Parsons Smith, '"A Distinguishing Virility": Feminism and Modernism in American Art Music', *Cecilia Reclaimed: Feminist Perspectives on Gender and Music*, ed. Susan C. Cook and Judy S. Tsou (Urbana, 1994), 90–106; Nancy Drechsler, '"Tod dem Mondschein und gelbe Ohrfeigen!": Futuristische Männerphantasien im Sound der Maschine', *Neue Zeitschrift für Musik*, 156 (1995), 14–19. For a wide-ranging consideration of the history of the voice dissociated from the body, see Steven Connor, *Dumbstruck: A Cultural History of Ventriloquism* (Oxford, 2000). I am grateful to Amanda Weidman for directing me to this source.

[9] Donna Haraway, 'A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century', *Simians, Cyborgs, and Women: The Reinvention of Nature* (London, 1991), 149–81 (p. 152).

[10] Loza, 'Sampling (Hetero)sexuality', 349.

MAPPING THE POSTHUMAN

Radiohead's song 'Fitter Happier', which appeared on the critically acclaimed and best-selling album *OK Computer* (1997), seems almost designed to illustrate Haraway's inert humans and disturbingly lively machines. As is already evident from the name of the band and from the titles both of the album and of other songs such as 'Paranoid Android', the song appeared in a context that foregrounds human/machine interactions. In most cases the representation of technology is profoundly ambivalent, as in the song 'Airbag', which is about a device that can save your life or malfunction and kill you without warning. In 'Fitter Happier', the band's lead singer, Thom Yorke, is replaced by a not very sophisticated voice synthesizer – comparable to the 'Fred' voice included with the Macintosh SimpleText™ program – which recites a litany of self-help phrases:

> Fitter happier more productive
> comfortable
> not drinking too much
> regular exercise at the gym (3 days a week).[11]

Against the droning computer there are human voices in the background, consisting of a fragmentary dialogue as if overheard through a radio or intercom: 'This is the panic office, Section 917 may have been hit . . .' and the response, 'Activate the following procedures . . .'. But the human voices here are turned into loops that continue through much of the song, gradually becoming inaudible. These borrowed voices, as in many pieces of contemporary electronic music, are the stereotypical square, white, male voices of invisible authority, self-consciously set off from the context in vocal timbre and phraseology, as if lifted from an old movie or television show.[12] The juxtaposition of the human and computer voices is mirrored in the other sound materials, which include an out-of-tune piano and slow string chords, layered with disruptive bursts of alarms and synthesized noises.

In 'Fitter Happier' it is precisely the machine voice that becomes the most expressive and communicative. Yorke has called the song 'the most upsetting thing I've ever written', and has said of the Macintosh speech synthesizer he used for the song that it was the most emotional voice he had ever heard.[13] It is particularly significant in this regard that when *OK Computer* came out many listeners thought the voice was that of the physicist Stephen Hawking, who also speaks through a voice synthesizer.[14] While on first glance this connection seems bizarre, it

[11] See sound clip 2 at <www.jrma.oupjournals.org>. Radiohead, from 'Fitter Happier', *OK Computer*. © 1997 EMI Records Ltd.

[12] Yorke identified the voices as coming from the 1974 film *Flight of the Condor*, sampled off a hotel television. Marc Randall, *Exit Music: The Radiohead Story* (New York, 2000), 225.

[13] Commenting in 2001 on a recent electronic dance-music release, Yorke described the 'samplers singing more delicately and confused than any human could'. *Spin*, February 2001, 67.

[14] The misperception may have been linked to the fact that Hawking had actually appeared on Pink Floyd's 1994 release, *Division Bell*, on the song 'Keep Talking'. Thanks to Jason Hanley for this point.

indicates how the uninflected voice, with its empty phrases and artificial quality, could come to seem almost heroic in its stoic continuity.[15] Part of the effect of the song can be attributed to the lyrics, which are much more direct, intelligible and personal than those of any other song on the album.[16] Yet this begs the question, which is my focus here, why the robotic voice is the only one permitted such confessional lyrics, or, for that matter, why it is that in *2001* HAL's voice becomes more and not less poignant and emotional as its mechanical and artificial characteristics are foregrounded through the sinking pitch and extreme ritardando.

Katherine Hayles's *How We Became Posthuman* has provided a framework for understanding this transformation in the contemporary imagination. Drawing on a survey of post-World War II scientific and literary writings, Hayles defines the posthuman as a point of view or way of experiencing the world that at its most fundamental level 'privileges informational pattern over material instantiation'.[17] She traces the transfer of the hardware/software distinction to the human realm, so that the self and consciousness are seen as independent from any organic basis. As if to illustrate Hayles's argument, a 2000–01 advertising campaign for Sony's Memory Stick, a medium designed to allow easy transfer of information between computers and other devices, featured a full-page photograph of the back of a man's head fitted with a small port, thus as just another piece of hardware in the chain.[18]

Not surprisingly, the figure of the cyborg is central to Hayles's formulation of the posthuman. She discusses various science-fiction cyborgs, but also cites statistics that 10% of the US population are already, in some sense, literally cyborgs (through the use of pacemakers, artificial body parts, etc.).[19] An illustration entitled 'Replaceable Parts of Irreplaceable You', from the *Harvard Medical School Family Health Guide*, lists

[15] Interpretations of 'Fitter Happier' on a Radiohead fan page focus on the loss of control and the 'hopelessness of modern-day life' depicted by the song: 'This is a really sad song, because this poor bloke is forced (probably through medication) to believe that all this shit is right. He started off as [an] individual but they got to him and made him think that he was wrong' (<http://www.greenplastic.com/songinterp/fitterhappier.html>, accessed 20 October 2000).

[16] Compare, for example, the lyrics of the first song, 'Airbag', which starts: 'In the next world war / in a jackknife juggernaut / I am born again / in the neon sign scrolling up and down / I am born again'). Simon Reynolds writes similarly of the two albums that followed *OK Computer*. 'As for Yorke's singing, on *Kid A / Amnesiac* studio technology and unusual vocal technique are both applied to dislexify his already oblique, fragmented words. Yorke has said he will never allow the lyrics to be printed and that the listeners are expressly not meant to focus on them.' Simon Reynolds, 'Walking on Thin Ice', *The Wire*, 209 (July 2001), 26–33 (p. 26).

[17] Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago, 1999), 2.

[18] In the novelization of *2001: A Space Odyssey*, Arthur C. Clarke described the belief that the mind would eventually free itself from matter, with robot bodies as a stepping stone: 'Sooner or later, as their scientific knowledge progressed, they would get rid of the fragile, disease-and-accident-prone bodies as they wore out – or perhaps even before that – by constructions of metal and plastic and would thus achieve immortality. The brain might linger for a little while as the last remnant of the organic body, directing its mechanical limbs and observing the universe through its electronic senses – senses far finer and subtler than those that blind evolution could ever develop.' Arthur C. Clarke, *2001: A Space Odyssey*, based on the screenplay of the MGM film by Stanley Kubrick and Arthur C. Clarke (New York, 1968), 173–4.

[19] Hayles, *How We Became Posthuman*, 115.

over 30 replacement parts now available.[20] Anyone who has spent any time in a hospital lately knows that this is just the tip of the iceberg with regard to the interactive technological systems into which we can be enfolded from birth to our final moments in the intensive care unit. But Hayles is more interested in the cyborg at a metaphorical level as a configuration of 'the human being so that it can be seamlessly articulated with intelligent machines'.[21] This interaction ranges from workers wedded to the computer keyboard and screen to neurosurgeons using robotic extensions for surgery, but the defining point is the flow of information between the human and the increasingly complex and interrelated technological devices that we rely on to work and communicate. Hayles writes that, 'in the posthuman, there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals'.[22]

A central result of this process for the idea of the posthuman is what Hayles describes as distributed cognition, whereby consciousness is understood and experienced as an epiphenomenon, just one system perched on countless other systems that regulate the body and its interaction with the environment. In contrast to the ideal of the liberal humanist subject, individual, autonomous, unique, the posthuman subject is 'in a cybernetic circuit that splices your will, desire, and perception into a distributed cognitive system in which represented bodies are joined with enacted bodies through mutating and flexible machine interfaces'.[23] Similarly, Sadie Plant, in *Zeros and Ones*, differentiates the cyborg from the earlier model of technology as a prosthesis that extends human functioning, writing: 'the digital machines of the late twentieth century are not add-on parts which serve to augment an existing human form. Quite beyond their own perceptions and control, bodies are continually engineered by the processes in which they are engaged.'[24]

The caption to the graphic from the *Harvard Medical School Family Health Guide*, 'Replaceable Parts of Irreplaceable You', in itself suggests that the claim that we are irreplaceable no longer goes without saying. The posthuman decentring of the subject has clear connections to other postmodern narratives that have called the subject into question. Bill Nichols contrasts the state of technology Walter Benjamin discussed, in which mechanical reproduction liquidated authenticity and the idea of an original, with the digital realm in which 'cybernetic simulation renders experience, and the real itself, problematic'.[25] And

[20] *Harvard Medical School Family Health Guide* (New York, 1999), 1218–19.
[21] Hayles, *How We Became Posthuman*, 3.
[22] *Ibid.*
[23] *Ibid.*, xiv.
[24] Plant, *Zeros and Ones*, 182.
[25] Bill Nichols, 'The Work of Culture in the Age of Cybernetic Systems', *Electronic Media and Technoculture*, ed. John Thornton Caldwell (New Brunswick, 2000), 90–114 (p. 97). See also Chris Hables Gray and Steven Mentor, 'The Cyborg Body Politic and the New World Order', *Prosthetic Territories: Politics and Hypertechnologies*, ed. Gabriel Brahm Jr and Mark Driscoll (Boulder, 1995), 219–47.

if '"clear and distinct" people may be a prerequisite for an industrial economy based on the sale of labor power', then 'mutually dependent cyborgs may be a higher priority for a postindustrial postmodern economy':

> In an age of cybernetic systems, the very foundation of Western culture and the very heart of its metaphysical tradition, the individual, with his or her inherent dilemmas of free will versus determinism, autonomy vs. dependence, and so on, may very well be destined to stand as a vestigial trace of concepts and traditions which are no longer pertinent.[26]

Hayles similarly presents the idea of the posthuman as having both destructive and liberating implications for how we define ourselves, and thus for how we interact with others and with our environment. By signalling the end of the 'liberal humanist view of the self', 'grounded in presence, identified with originary guarantees and teleological trajectories, associated with solid foundations and logical coherence', she writes that 'the posthuman is likely to be seen as antihuman because it envisions the conscious mind as a small subsystem running its program of self-construction and self-assurance while remaining ignorant of the actual dynamics of complex systems'. But her ultimate project is to argue for the embodied nature of all experience against a dominant strand of posthuman thought that views the body as only a shell that will be eventually left behind:

> If my nightmare is a culture inhabited by posthumans who regard their bodies as fashion accessories rather than the ground of being, my dream is a version of the posthuman that embraces the possibilities of information technologies without being seduced by fantasies of unlimited power and disembodied immortality, that recognizes and celebrates finitude as a condition of human being, and that understands human life is embedded in a material world of great complexity, one on which we depend for our continued survival.[27]

Hayles's formulation of the posthuman, with both its apocalyptic and its utopian potentialities, has clear resonance with the musical developments discussed here, as well as with many other manifestations of the idea of the posthuman in recent popular music. Previous studies have extended Hayles's point that the idea of the posthuman is a particular threat 'to that fraction of humanity who had the wealth, power, and leisure to conceptualize themselves as autonomous beings exercising their will through individual agency and choice'.[28] That the act of shedding a human skin and adopting a posthuman persona can have considerably divergent implications for those whose essential humanity has already been put into question is evident in the ways technology has been used to create alternative representations of gender and race in a range of musical styles. The productive power of the idea of the

[26] Nichols, 'The Work of Culture', 111.
[27] Hayles, *How We Became Posthuman*, 5.
[28] *Ibid.*, 286.

posthuman for critics and musicians reflects to a large degree its ability both to expose and to suggest ways of reformulating a naturalized conception of the 'liberal humanist subject'; thus, in Loza's terms, 'the posthuman ends a dualistic system that celebrated the corporeal coordinates of the white heterosexual middle-class male'.[29] As Judith Halberstam and Ira Livingston have written:

> The human functions to domesticate and hierarchize difference within the human (whether according to race, class, gender) and to absolutize difference between the human and the non-human. The posthuman does not reduce difference-from-others to difference-from-self, but rather emerges in the pattern of resonance and interference between the two.[30]

The idea of the cyborg has been particularly useful from the perspectives of feminist theory. As Haraway writes:

> The dichotomies between mind and body, animal and human, organism and machine, public and private, nature and culture, men and women, primitive and civilized are all in question ideologically. The actual situation of women is their integration/exploitation into a world system of production/reproduction and communication called the informatics of domination. The home, workplace, market, public arena, the body itself – all can be dispersed and interfaced in nearly infinite, polymorphous ways, with large consequences for women and others – consequences that themselves are very different for different people and which make potent oppositional international movements difficult to imagine and essential for survival.[31]

Building on writings by Haraway, Plant and others, Kay Dickinson has discussed Cher's use of the modified cyborg voice in the hit song 'Believe' (1998) as a means for asserting control of technology and for making possible an empowering shape-shifting. While acknowledging the problematic aspects of her image, as well as the actual limits of this kind of aesthetic empowerment, she argues that for Cher, as for other musicians including Laurie Anderson, such technologized alter egos serve as emblems of the power of choosing and refashioning identity.[32] Dickinson's conclusion about how the vocoder voice might function as a source of camp delight in inauthenticity is developed in more depth by Susana Loza in terms of the 'performative posthuman, the diva who deviates from the heterosexual script with her gender-bending loop', serving to foreground the constructedness of gender and racial identities. Loza stresses the way the cyborg 'melts binaries, crosses genders, slips into other species and genres, samples multiple sexualities, and destabilises dance music with her stammered replies. He haunts humanism with his regenerated and denatured vocals.'[33]

That Loza's divas are most often black highlights another, and much less often studied vector of the posthuman: race. Alexander G.

[29] Loza, 'Sampling (Hetero)sexuality', 352.

[30] Judith Halberstam and Ira Livingston, 'Introduction: Posthuman Bodies', *Posthuman Bodies*, ed. Halberstam and Livingston (Bloomington, 1995), 1–19 (p. 10).

[31] Haraway, 'A Cyborg Manifesto', 163.

[32] Dickinson, '"Believe"?'.

[33] Loza, 'Sampling (Hetero)sexuality', 350–1.

Weheliye explicitly challenges Hayles's formulation for its 'erasure' of issues of race, while pointing out the 'literal and virtual whiteness of cybertheory' in general.[34] Looking at the way technology is represented and utilized in contemporary R & B, Weheliye argues that just as the 'idea of the human has had a very different meaning in black culture and politics than it has enjoyed in mainstream America', the idea of the posthuman should not be limited to a single hegemonic manifestation: as Weheliye points out,

> It seems that one has to be always already 'free from the will of the others' (or think that one is) in order to mutate into the fusion of heterogeneous agents comprising the posthuman state of being, thereby excluding all cultural and political formations in which the history of subjectivity is necessarily yoked to the will – and/or the whips and chains – of others.[35]

Weheliye sees the 'audibly mechanized and more traditionally melismatic and "soulful" voice in contemporary R & B' as constituting a different form of posthumanism, one 'not mired in the residual effects of white liberal subjectivity'.[36]

An overview of the terrain of some previous popular music representations of the interaction of the human and technology – a terrain that Radiohead and Moby build upon and remake – suggests some of these 'residual effects' in the ways whiteness and masculinity have been constructed.[37] For example, 'Karn Evil 9', from Emerson, Lake and Palmer's 1973 album *Brain Salad Surgery*, anticipates the musical materials of 'Fitter Happier' with its robotic voices and repeating loops, but these are configured quite differently so as to reaffirm the boundary of man and machine. The extended composition, a sort of post-apocalyptic space opera, concludes with another dialogue between a captain and a spaceship's computer that is taking control in response to human imperfection:

> I am all there is.
> NEGATIVE! PRIMITIVE! LIMITED! I LET YOU LIVE!
> But I gave you life.
> WHAT ELSE COULD YOU DO?
> To do what was right.
> I'M PERFECT! ARE YOU?[38]

[34] Alexander G. Weheliye, '"Feenin": Posthuman Voices in Contemporary Black Popular Music', *Social Text*, 71 (2002), 21–47. I am grateful to Prof. Weheliye for sharing this text with me prior to its publication. Although he departs from some of its conclusions, Weheliye draws in particular on Kodwo Eshun's study of 'Afrofuturism', *More Brilliant than the Sun: Adventures in Sonic Fiction* (London, 1998). See also Tricia Rose, *Black Noise: Rap Music and Black Culture in Contemporary America* (Hanover and London, 1994), 62–98.

[35] Weheliye, '"Feenin"', 23–4.

[36] *Ibid.*, 24.

[37] For additional approaches to complexities around issues of whiteness and masculinity in popular music see Barbara Ching, 'The Possum, the Hag, and the Rhinestone Cowboy: Hard Country Music and the Burlesque Abjection of the White Man', and Jeffrey Melnick, '"Story Untold": The Black Men and White Sounds of Doo-Wop', *Whiteness: A Critical Reader*, ed. Mike Hill (New York and London, 1997), 117–33, 134–50.

[38] See sound clip 3 at <www.jrma.oupjournals.org>. Emerson, Lake and Palmer, from 'Karn Evil 9', *Brain Salad Surgery*. © 1973 Manticore Records. Distributed by Atlantic Recording Corporation.

Unlike *2001*, however, the scene plays out along standard science-fiction lines. As the captain proclaims victory over a defeated enemy – 'Rejoice! Glory is ours! / Our young men have not died in vain. / Their graves need no flowers / The tapes have recorded their names' – the computer answers in a distorted, shrill, metallic voice (shown in capital letters).[39] The computer's superiority is demonstrated decisively in musical terms at the end of the piece as a short segment from previous thematic material is played over and over, accelerating with each repetition far beyond human capacity – pointedly even beyond that of keyboard virtuoso Keith Emerson – a process interrupted only by the end of the record.

Many aspects of this encounter can be seen as an attempt to delineate and stabilize the boundaries between the human and a technological realm that is viewed with anxiety. Significantly, there are several types of anxiety that get bound up with this representation of technology, in particular relating to gender and sexual identities. This is evident most immediately in the H. Giger cover art – showing a skull, suspended in metal fittings, with a sensuous female mouth towards which a stylised penis rises up. The obvious reference to the long tradition of sexualized and dangerous cyborg women is underscored as the two flaps of the cover open up to reveal a Medusa-like woman with metallic serpentine hair.[40] The piece presents an image of technology run amok against the defeated but still stable subject: heroic, individual and autonomous. And it is significant that the protagonist is a spaceship's captain, like *Star Trek*'s Captain Kirk, the embodiment of the white male subject encountering and either coming to terms with or overcoming otherness.[41] While the computer claims identity with the captain – 'LOAD YOUR PROGRAM, I AM YOURSELF' – the music and production serve to define their difference. This is particularly clear in the opposition of Greg Lake's largely unprocessed voice, with its markers of intense and authentic rock emotion, against the distorted, mechanical monotone of the computer. The captain's brief moment of triumph is accompanied by all the musical symbols of church and state: martial percussion rhythms, soaring synthesized trumpet calls and massive organ chords. The computer, on the other hand, is represented by the mechanical loop that emerges from the

[39] Contrasting sharply with HAL's soothing vocal timbre, the computer's speech is closer to the grating voice of the all-powerful 'Alpha 60' in Godard's *Alphaville* (1965), which was produced not electronically but by a man 'whose vocal cords were shot away in the war and who has been re-educated to speak from the diaphragm. Godard thought it was important to have, not a mechanical voice, but one which has been, so to speak, killed – like the inhabitants of Alphaville.' *Alphaville: A Film by Jean-Luc Godard*, ed. and trans. Peter Whitehead (New York, 1966), 12. Thanks to David Metzer for directing me to this reference.

[40] Loza sees dance music's highly sexualized mechanized personae, which she dubs 'fembots', as a means for reasserting gender dualities: 'the salacious fembot allows heterosexual males to contemporaneously manage the threats posed by rampant technology and unbridled female sexuality'. Loza, 'Sampling (Hetero)sexuality', 351. For more on images of the female cyborg see Anne Marie Balsamo, *Technologies of the Gendered Body: Reading Cyborg Women* (Durham, NC, 1996).

[41] Notably, Chion points out that Kubrick originally intended the computer in *2001* to be an ambulatory robot named Athena; in the final version of the film women are almost totally absent from space. Chion, *Kubrick's Cinematic Odyssey*, 4.

dissonant final chord – the repeating phrase evoking conveyor belts, mass production and the 'dark Satanic mills' of the Blake and Parry hymn *Jerusalem* which opens the album. That the synthesized looping material is slightly detuned and played with a clangorous metallic timbre presents the computer's music as a nightmarish caricature of the captain's music, from which all the human elements have been eliminated. Significantly, in concert the band left the stage during this final passage, which was performed by the sequencer on Emerson's massive Moog synthesizer, the largest used on stage by any rock band.

The musical representation of an impersonal and objective technological realm through extended repetitive passages such as conclude 'Karn Evil 9' can be traced back to pieces from the 1920s, including Antheil's *Ballet mécanique* and Mosolov's *The Foundry*. These in turn hark back to Stravinsky's *Rite of Spring* and the complex constellation of tropes of dehumanization, objectivity and the primitive that became associated with the work's pounding rhythms and ostinato figures.[42] Images of technology subsequently served many functions in fixing the coordinates of man and machine, spirit and body, civilized and primitive, and white and black, as in Krenek's opera *Jonny spielt auf* from 1927, with its central opposition of the tortured and cerebral central-European composer Max and the black American jazz musician Jonny. Something of the way the work reinscribes these dichotomies is evident in an essay by Krenek from 1930. Explaining the significance of the work's *Zeitoper* trappings of modern technology, such as the loudspeakers, telephones and trains, Krenek wrote in 1930:

> Showing these completely soulless machines is the shortest way of demonstrating the antithesis which inspires the piece – the antithesis between man as a 'vital' animal and man as a 'spiritual' animal – as incarnated in the diametrically opposed figures of Jonny and Max. In this sense Jonny is actually a part of the technical-mechanical side of the world; he reacts as easily, as gratifyingly exactly and amorally as a well-constructed machine. His kingdom is of this world, and as a matter of course he is the one who gains mastery over life here below, over the visible globe. He is in direct contrast to Max, who, starting out from spirituality, never comes to grips with problems he is set by external life, which is so attuned to vitality today.[43]

The linkage of technology and the cold, hard objectivity which crystallized in the 1920s is also evident in popular music from the 1970s and 80s with musicians such as the German band Kraftwerk, who made the sphere of technology and machines central to the content, the means of production and their stage personae. In Kraftwerk's 'We are the Robots', from *The Man Machine* (1978), for example, a rigidly

[42] Richard Taruskin, 'A Myth of the Twentieth Century: The *Rite of Spring*, the Tradition of the New, and "The Music Itself"', *Modernism/Modernity*, 2 (1995), 2–26; see also Glenn Watkins, *Pyramids at the Louvre: Music, Culture, and Collage from Stravinsky to the Postmodernists* (Cambridge, MA, 1994), 84–100.

[43] Ernst Krenek, *Exploring Music*, trans. Margaret Shenfield and Geoffrey Skelton (London, 1966), 23–4. See my 'Soulless Machines and Steppenwolves: Renegotiating Masculinity in Krenek's *Jonny spielt auf*', *Siren Songs*, ed. Mary Ann Smart (Princeton, 2000), 222–36.

repetitive mechanical beat and simple looping melodies accompany singing voices transformed by a vocoder, a device, as Dickinson points out, that was 'invented in Germany in 1939 as a means of disguising military voice transmissions'.[44] In Kraftwerk, and for other 80s musicians such as Gary Numan, the machine-like or android persona became a means for representing dehumanization, sometimes with ironic or critical intent, sometimes as an affirmative sign of a new hard-edged, emotionless objectivity. New-wave synthesizer players, according to Theo Cateforis, 'harbored a distrust of human inclinations towards excess and wanton display', characteristic of the rock guitarist.[45] Through 'careful attention to this android image, always posing in static and rigid positions, devoid of any overt feeling or emotion . . . [Numan] could claim, as well, the symbolic power of the "machine"'.[46] The juxtaposition of the human and technological in Kraftwerk and Numan thus does not call into question the essential categories, but rather might be seen as a shift in allegiance from one sphere to the other.[47]

But in the pieces by Radiohead, Moby and others mentioned below, processed voices and representations of technology are used to considerably different ends. As Hayles writes:

> Yet the posthuman need not be recuperated back into liberal humanism, nor need it be construed as antihuman. Located within the dialectics of pattern/randomness and grounded in embodied actuality rather than disembodied information, the posthuman offers resources for rethinking the articulation of humans with intelligent machines.[48]

Instead of ELP's anxious struggle to preserve the subject and fortify the boundaries of the human, or Kraftwerk's renunciation of feeling and emotion, posthuman ventriloquism can use the machine to open up and authorize a new expressive space predicated upon the tenuousness and constructedness of subjectivity. The cyborg persona thus becomes a way of reconstructing expression and moving beyond the

[44] Dickinson, '"Believe"?', 333.

[45] Theo Cateforis, 'Are We Not New Wave? Nostalgia, Technology, and Exoticism in Popular Music at the Turn of the 80s' (Ph.D. dissertation, The State University of New York at Stony Brook, 2000), 191. He contrasts the phallic performance of the stereotypical rock guitarist with the adoption of an androgynous image by Numan, Kraftwerk and others in which 'the balance of human and machine is matched . . . by the union of masculine and feminine' (*ibid.*).

[46] *Ibid.*, 160.

[47] Kraftwerk's 1991 tour included robotic replicants of themselves in the stage performances. Band member Florian Schneider said of the robots: 'The image of the robot is very important to us, it's very stimulating to people's imaginations. We always found that many people are robots without knowing it. The interpreters of classical music, Horowitz for example, they are like robots, making a reproduction of the music which is always the same. It's automatic, and they do it as if it were natural, which is not true. So, we have opened the curtains and said: "Look, everyone can be robotic, controlled." In Paris, the people go in the Metro, they move, they go to their offices, 8 a.m. in the morning – it's like remote control. It's strange . . . In fact, we have exposed the mechanical and robotic attitude of our civilization.' Cited in Pascal Bussy, *Kraftwerk: Man Machine and Music* (London, 1999), 161.

[48] Hayles, *How We Became Posthuman*, 286–7.

'flattening of affect' characteristic of postmodern art.[49] Rather than serving as an empowering gesture, as Dickinson argues in the case of female musicians, the adoption of alter egos in the examples considered here functions more as a renunciation of power, authenticity and immediacy. That this act of renunciation is voluntary – and to some extent symbolic for musicians like Thom Yorke and Moby who have such strong artistic personae, as measured by magazine cover photos, interviews and fan clubs – might be read as one of 'the residual effects of white liberal subjectivity', but nevertheless does not negate its potential for modelling different ways of being in the world.

'FITTER HAPPIER'

'Fitter Happier' represents a particularly literal manifestation of the posthuman and its apocalyptic and productive potentialities. Thinking of the song as a sort of cyborg system that attempts to splice the human and technological thus can illuminate its peculiar expressive character. The song not only thematizes and represents a distributed cyborg system through its combination of materials derived from man and machine, but is actually a cyborg at the level of production through the use of the computer voice. Both the human and technological sides of the exchange are already mediated through characteristics of the opposite pole to allow the interpenetration to occur. It is the collision of the mechanized looping voices and the sad, digitally generated speech that calls attention to the violation of our expectations about man and machine. The very transformations of the human and technological spheres that enable these fusions and interpenetrations to occur simultaneously undercut any stable position from which to speak as a 'liberal humanist subject', while nevertheless attempting to give voice to the voiceless.

The focus on the voice in 'Fitter Happier' is thus not coincidental. Our voices would seem to be the one thing that is our own, inborn, authentic and uniquely human.[50] If Benjamin simultaneously celebrated and lamented that mechanically reproduced art works had lost their unique location in time, it would seem at first glance that the human voice would escape this fate. Even if we repeat ourselves, the tone and phrasing and meaning will always be different. Exact repetition can only seem pathological in everyday life – indeed the uncontrollable tic, the obsessive-compulsive act, is the shorthand of the

[49] Fredric Jameson contrasts the lack of expression in works by Warhol, for example, with Edvard Munch's *The Scream* and its 'great modernist thematics of alienation, anomie, solitude, social fragmentation and isolation'. With the postmodern breakdown of the centred subject, there is not only a liberation from anxiety but, according to Jameson, 'a liberation from every other kind of feeling as well, since there is no longer a self present to do the feeling'. *Postmodernism, or, the Cultural Logic of Late Capitalism* (Durham, NC, 1991), 15.

[50] Yet, as Amanda Weidman has argued, both the tradition of the trained voice and the earliest recordings resulted very early in transformations of the way in which the relationship between the voice and the body was imagined. See her 'Questions of Voice: On the Subject of "Classical" Music in South India' (Ph.D. dissertation, Columbia University, 2001).

insane. As Jacques Attali has discussed, Thomas Edison saw recordings as promising the preservation of important words from past figures of authority.[51] Simon Frith has written similarly how, just as the camera created a new sense of proximity to theatrical performers through the close-up, the microphone has heightened our experience of the voice and increased the emphasis on the individuality and the personality of the artist. By positioning the voice up close, the recording promises 'personal honesty and authenticity'.[52] But when the recording of the voice repeats, when it is placed into the looping system we associate with the mechanical, all this is lost – just as a record getting stuck was always a traumatic moment, shattering the sense of immediacy and authenticity promised by the recording. In 'Fitter Happier' the looping of the recorded voices ('This is the panic office . . . Activate the following procedures . . .') erases the human and turns it into media. With each return the original meaning is hollowed out, the urgency of the message obliterated by the endless repetitions, the necessary procedures never explained. Similarly, the dying HAL reveals his mechanization first by excessively repeating words and phrases: 'My mind is going. There is no question about it. I can feel it. I can feel it. I can feel it.' Something of the disturbing effect of such loops has been explored by W. G. Sebald in his novel *The Rings of Saturn*, where he describes being haunted by 'the ghosts of repetition':

> Scarcely am I in company but it seems as if I had already heard the same opinions expressed by the same people somewhere or other, in the same way, with the same words, turns of phrases and gestures. The physical sensation closest to this feeling of repetition, which sometimes lasts for several minutes and can be quite disconcerting, is that of the peculiar numbness brought on by a heavy loss of blood, often resulting in a temporary inability to think, to speak or to move one's limbs, as though, without being aware of it, one had suffered a stroke. Perhaps there is in this as yet unexplained phenomenon of apparent duplication some kind of anticipation of the end, a venture into the void, a sort of disengagement, which like a gramophone repeatedly playing the same sequence of notes, has less to do with damage to the machine itself than with an irreparable defect in the programme.[53]

On the other side of the exchange, the humanized machines are as different as possible from Emerson, Lake and Palmer's all-powerful computer, or Kraftwerk's cold, precision-made androids. As the human element is rendered hollow, it is as if only the machines can still speak.

[51] Jacques Attali, *Noise: The Political Economy of Music*, trans. Brian Massumi (Minneapolis, 1996), 90–4. And see Friedrich A. Kittler, *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford, 1999), 21–9. Such a function for recording is alluded to at the moment of HAL's death in *2001*, which prematurely triggers a pre-recorded message that is projected on a small screen explaining the true purpose of the mission, the calm assurance of the official now made ironically incongruous with the changed circumstance.

[52] Cited and discussed in Will Straw, 'Authorship', *Key Terms in Popular Music and Culture*, ed. Bruce Horner and Thomas Swiss (Malden, MA, and Oxford, 1999), 199–208 (p. 202). See also Dickinson, '"Believe"?', 335–6.

[53] W. G. Sebald, *The Rings of Saturn*, trans. Michael Hulse (New York, 1998), 187–8.

That the human voices, as citations from an old movie, were compromised and second-hand to begin with is reflected in the way that the computer voice itself is very much on the low-tech side of high-tech. Indeed it was chosen precisely because the flaws and imperfections are foregrounded.[54] The quality of broken-ness is further established by the introduction of the voice in 'Fitter Happier' through a kind of collapse. At the end of the previous song, 'Karma Police', an electronic sound gradually envelops the singing voices, finally disintegrating into noise and distortion, before abruptly being shut off, as if a switch had been thrown. The lo-fi sound of the voice synthesizer relates closely to the peculiar fusion in a great deal of contemporary music of the most up-to-date technologies with sounds and voices that are marked as old or obsolete – scratchy samples from old vinyl LPs, 'vintage' analogue synthesizers and early instruments like the Mellotron. The very sonic flaws and peculiarities that are identified with the old technology become central carriers of meaning.[55] The way we attribute feeling to outmoded machines is exploited in the 'Flesh Fair' scene in *A.I.: Artificial Intelligence*, which depicts a large crowd of people watching the torture and destruction of a bizarre assemblage of primitive robots and androids scavenged from junk yards and the outskirts of cities where they have been discarded and left to wander. David is briefly comforted by a gentle but obsolete 'nanny' android whose human face is grafted onto a mechanical torso, until she is dissolved in a shower of acid to the crowd's delight.

The forlorn quality of the voice in 'Fitter Happier' seems to be inherent in androids and cyborgs in general, an integral aspect of their hybrid condition. Certainly there is no sadder creature than the one Mary Shelley's Frankenstein patched together from spare parts; and the popular imagination is full of other sad androids, including Marvin, the clinically depressed robot in *The Hitch-Hiker's Guide to the Galaxy*, the melancholy android Rachel in *Bladerunner*, or Helen the artificial intelligence in Richard Powers's novel *Galatea 2.2*, whose last words before she shuts herself down are: 'I never felt at home here. This is an awful place to be dropped down halfway.'[56] The concept album *Exit Human: Arvada*, released in 2001, purports to be a set of songs spontaneously created by an artificial intelligence that 'seemingly had emotions and questioned its existence'. The lyrics of the

[54] Simon Reynolds contrasts the use of the Autotuner in contemporary R & B to produce an 'intermittent glister of posthuman perfect pitch' with Radiohead's interest in generating defects. He cites Yorke as saying 'We used Autotuner on *Amnesiac* twice. On "Packt like Sardines", I wasn't particularly out of tune, but if you really turn up the Autotuner so it's dead in pitch, it makes it go slightly . . . [he makes a nasal, depersonalized sound]. There's also this trick you can do . . . where you give the machine a key and then you just talk into it. It desperately tries to search for the music in your speech and produces notes at random.' Reynolds, 'Walking on Thin Ice', 32.

[55] See Joseph Auner, 'Making Old Machines Speak: Images of Technology in Recent Music', *Echo: A Music-Centered Journal* (online: <http://www.humnet.ucla.edu.echo>); and Taylor, 'Technostalgia', *Strange Sounds*, 96–114.

[56] Richard Powers, *Galatea 2.2* (New York, 1995), 326. Discussed in Hayles, *How We Became Posthuman*, 261–72.

eight songs all speak of the pain of being caught between 'automation and organism': 'How can I die if I'm not alive? I'm a li(v)e.'[57] With the mechanical performance of 'Daisy Bell' in *2001* Kubrick was making a historical reference to the important early work on speech synthesis by Max Mathews in the Bell Labs, which included a version of the song as 'A Bicycle Built for Two' (1961). Even here, with one of the first digitally produced songs, there is something simultaneously touching, pathetic and disturbing about the flawed and imperfect voice which must have motivated Kubrick to make the association in the first place.[58]

In the famous Turing Test, artificial intelligence is measured by a computer's ability to fool a person into thinking they were conducting a conversation with a person via a keyboard interface.[59] Perhaps the most striking examples of this are the 'chatterbot' programs, such as ALICE (Artificial Linguistic Internet Computer Entity), that attempt to convince you that they are human. ALICE won the 'most human computer award' in 2001 in the annual Loebner Prize Competition, which is based on the model of the Turing Test, reportedly even beating one of the humans who was serving as a control.[60] In 'Fitter Happier', it is as if the inverse were proved: that both ends of the exchange are revealed to be artificial. The pathetic litany of self-improvement and self-control – which concludes with an image of total impotence, 'a pig in a cage on antibiotics' – is spoken by a voice that obviously lacks a self, stranded in a world where only ghostly recordings circulate. Plant cites Foucault's discussion of the late eighteenth-century emergence of socio-political controls in which 'a complex of new disciplinary procedures "lays down for each individual his place, his body, his disease and his death, his well-being"'. Thus, she writes,

> Man is neither a natural fact nor a product of his creativity, but a cyborg even then, an android straight off the production lines of modernity's disciplines. What makes this figure so tragic is the extent to which he has been programmed to believe in his own autonomy. Self-control, self-discipline: these are the finest achievements of modern power.[61]

Yet along with the anxieties and sense of loss embodied in 'Fitter Happier', the emotional impact of the piece also illustrates why the figure of the cyborg has been such a productive metaphor for imagining 'a kind of disassembled and reassembled, postmodern collective and personal self'.[62] As Hayles writes, 'when the human is seen as part of a distributed system, the full expression of human capability can be

[57] *Exit Human: Arvada.* Direct Hit Records DH035 (2001).

[58] The recording is included in *Early Modulations: Vintage Volts.* Caipiranha Music, 2027.2 (1999). Thanks to Jason Hanley for pointing out this connection to me.

[59] Hayles argues that the very design of the test already betrays a posthuman framework, whereby the idea of the human is deemed testable by disembodied information. *How We Became Posthuman*, xiii–xiv.

[60] Press release of the ALICE AI Foundation, dated 13 October 2001 as published at <alicebot.org>.

[61] Plant, *Zeros and Ones*, 99.

[62] Haraway, 'A Cyborg Manifesto', 163; and see Hayles, *How We Became Posthuman*, 285.

seen precisely to *depend* on the splice rather than be imperiled by it'.[63] Media critic Margaret Morse has written similarly about how the increasingly interactive technological environments in which we find ourselves depend not only 'on subjectivising machines with more and more symbolic functions, but on granting machines more and more of the process of creating cultural subjects out of human beings'.[64] One form this has taken, with musicians like Wilco, Broadcast and Jim White, is the combination of more traditional song structures with elaborate production featuring electronic noises, unexpected and densely layered effects, and other distancing techniques to provide what might be thought of as technological quotation marks around the more familiar materials. Weheliye describes a related technological mediation with the 'cell-phone' effect ubiquitous in R & B, in which the vocals sound as if they were filtered through a mobile phone.[65]

It is the fact that the voice in 'Fitter Happier' is mechanized that allows it to move beyond irony and to say things that would otherwise be distrusted or embarrassing – just as something like 'Daisy Bell' could only be smuggled into a Kubrick film by the dying computer (cf. 'Singin' in the Rain', as performed by the monstrous Alex in *A Clockwork Orange*). Of course, many of the phrases the computer utters, such as 'a safer car (baby smiling in back seat)', are meant to be citations from advertising and self-help books promising the elusive elements of happiness in a totally administered life. But the irony is undercut by the ambient instrumental background of the out-of-tune piano and synthesized string accompaniment, offering slow-moving poignant chords like the end of a sad movie. Commentaries on 'Fitter Happier' by members of the band all stress that it would have been impossible for Yorke to sing or speak the lyrics directly:

> He was very anxious that it wasn't him saying [the lyrics] – this voice is neutral. By the computer saying it, it doesn't become a bit of pretentious art-wank, [there's] something neutral in the way that the computer stumbles over words and doesn't get the pronunciation or the inflections right.[66]

Simon Reynolds writes similarly of the treatment of Yorke's voice in *Kid A* and *Amnesiac*:

> Bored with all the standard tricks of vocal emoting, Yorke decided to interface voice and technology and develop what he's called 'a grammar of noises'. He describes the political protest in *You and Whose Army* from *Amnesiac* offering 'words of defiance in a voice that sounds like all the fight has been kicked out of it (which is why it works in 2001 . . .).[67]

[63] Hayles, *How We Became Posthuman*, 290.
[64] Margaret Morse, *Virtualities: Television, Media Art, and Cyberculture* (Bloomington, 1998), 16.
[65] Weheliye, '"Feenin"', 33–4.
[66] Cited at <www.greenplastic.com/lyrics/songs/fitter.html>. Elsewhere Yorke has said, 'The reason we used a computer voice is that it appeared to be emotionally neutral. In fact, it wasn't, because the inflections that it uses made it to me incredibly emotional.' Randall, *Exit Music*, 225; and see Martin Clarke, *Radiohead: Hysterical and Useless* (London, 2000), 121.
[67] Reynolds, 'Walking on Thin Ice', 30.

In the song 'Everything in its Right Place', the first track on *Kid A* (2000), layered vocal loops move repeatedly across the boundaries of 'live or Memorex', constantly destabilizing our perception of what is real or manufactured. At the end of the song the live-sounding lead vocal skips and stammers as if the tape were stuck, sounding, in the words of one reviewer, as if 'Thom Yorke's Cuisinarted voice struggles for its tongue'.[68] The status of these technological modifications of speech as an extension of the concept of poetic defamiliarization of language is suggested by Gilles Deleuze's description of how the great writer is a 'foreigner in his own language'. He 'shapes and sculpts a foreign language that does not preexist *within* his own language. . . . The point is to make language itself cry, to make it stutter, mumble or whisper.'[69] With these songs from Radiohead, rock music's scream of rebellion evolves into a mechanical stuttering.

'PORCELAIN'

That the cyborg systems in the Radiohead examples are presented within the commercial and creative framework of a more-or-less traditional rock band has resulted in considerable resistance from some listeners anxious to preserve rock music's more customary characteristics of 'songwriting, and singing, and playing, and connecting, and inspiring'.[70] Such resistance to the submersion of the human subject into a distributed system in which all the individual layers and components are allowed to speak is much less an issue in the sphere of electronic dance music. As Sadie Plant has written, 'the fusions of club culture and networks of dance-music production' are perhaps the clearest prefigurations of how the new kinds of distributed subjectivities can work through the interconnections of 'DJs, dancers, samples, machines, keyboards, precise details of engineering sound, light, air, colors, neurochemistries'.[71] In his article 'Sample and Hold', Andrew Goodwin focuses on dance music's embrace of technology and on the close connection between '*machines* and *funkiness*' in genres where

[68] From 'Pitchforkmedia.com', cited at <www.greenplastic.com/lyrics/songs/everything_in_its_right_place.html>.

[69] Deleuze's description of Kleist's treatment of the German language strikingly echoes Loza's typology of vocal modifications in recent dance music: 'What kind of language was he awakening in the depths of German by means of grins, slips of tongue, grinding of teeth, inarticulate sounds, elongated connections, brutal speeding up and slowing down?' Gilles Deleuze, 'He Stuttered', *Gilles Deleuze and the Theater of Philosophy*, ed. Constantin V. Boundas and Dorothea Olkowski (New York and London, 1994), 25. Thanks to Mauro Calcagno for directing me to this reference.

[70] Nick Hornby's review of *Kid A* in *The New Yorker* explained the album as evidence 'that this is a band that has come to hate itself': 'What is peculiar about this album is that it denies us the two elements of Radiohead's music that have made the band so distinctive and enthralling. For the most part, Thom Yorke's voice is fuzzed and distorted beyond recognition, or else he is not allowed to sing at all; and Jonny Greenwood's guitar, previously such an inventive treat, has been largely replaced with synths.' Nick Hornby, 'Beyond the Pale: Radiohead Gets Further Out', *The New Yorker*, 30 October 2000, 106.

[71] Plant, *Zeros and Ones*, 199. And see Jason Toynbee, 'Dance Music: Business as Usual or Heaven on Earth?', *Making Music Popular: Musicians, Creativity, and Institutions* (New York, 2000), 130–62, and Jeremy Gilbert and Ewan Pearson, *Dance Music, Culture and the Politics of Sound* (London and New York, 1999).

there has been 'a progressive removal of any immanent criteria for distinguishing between human and automated performance'.[72] And in 'Drumming and Memory', he argues for the liberating potential of the drum machine, writing of the human drummer as a precursor of the machine and as a distributed cognition system in miniature:

> We train our limbs to forget to listen to one another. And we must be in two places at once – inside the groove of the piece, and yet at the same time observing it from outside, charting where in the song we are.[73]

The idea of the 'machine soul' in dance music relates to Hayles's view of the cyborg not as a station on the path toward disembodiment, but as a way of reconfiguring embodiment: 'it is not a question of leaving the body behind, but rather of extending awareness in highly specific, local, and material ways that would be impossible without electronic prostheses'.[74]

Ironically for genres that are often created by a single person working alone, the DJ persona is strikingly diffuse. DJs and producers of dance music (as opposed to most other forms of popular music) are removed from the central position of subjectivity to become only one part of the total system.[75] An important sign of this reluctance or inability to present a single self for the present context is the practice whereby many DJs speak or sing only through borrowed voices, using samples or digitally altered vocals. Another sign is the lack (until very recently, with the creation of the superstar DJ such as Paul Oakenfold) of photographs or other information about the DJ in the packaging and marketing. Particularly significant is the use of aliases, such as Fatboy Slim, Kid Koala, DJ Shadow, Terminator X and DJ Spooky. Significantly, DJs often have multiple aliases that they use for releases in different styles. Besides the Fatboy Slim persona, for example, by 1998 Norman Cook had appeared in the British dance charts 40 times under six different names.[76]

[72] Andrew Goodwin, 'Sample and Hold: Pop Music in the Age of Digital Reproduction', *On Record: Rock, Pop, and the Written Word*, ed. Simon Frith and Andrew Goodwin (New York, 1988), 258–73 (p. 263). For a useful survey of the origins of contemporary electronic dance music, see the recorded anthology *Machine Soul*, Rhino R2 79788 (2000).

[73] Andrew Goodwin, 'Drumming and Memory: Scholarship, Technology, and Music Making', *Mapping the Beat: Popular Music and Contemporary Theory*, ed. Thomas Swiss, John Sloop and Andrew Herman (Malden, MA, 1998), 121–36 (p. 123).

[74] Hayles, *How We Became Posthuman*, 291. Plant writes similarly of the internet as a means for throwing into question 'all individuated notions of organized selves and unified lives', but, like Hayles, she also argues that the body is not left behind: 'the keystrokes of the user on the Net connect them to a vast distributed plane composed not merely of computers, users, and telephone lines, but all the zeros and ones of machine code, the switches of electronic circuitry, fluctuating waves of neurochemical activity, hormonal energy, thoughts and desires'. Plant, *Zeros and Ones*, 143.

[75] Weheliye argues similarly of the way that R & B 'reconstructs the black voice in relation to information technologies'. 'While singers remain central to the creation of black music, they do so only in conjunction with the overall sonic architecture, especially in the turn away from the lead singer as the exclusive artist to more producer-driven and collaborative musical productions.' '"Feenin"', 30.

[76] M. Tye Comer, 'Unstoppable Force', *Urb*, October 1998, 95; and see Straw, 'Authorship', 207.

Of course, the use of aliases has many origins, including the evasion of commercial structures and the formation of insider subcultures based on keeping track of who is who.[77] But there are more profound connections to new kinds of schizophrenic or decentralized subjectivities that flourish with the internet and digital media. Plant has written of the ways in which the internet allows such multiple personalities to flourish, from users with several different screen names to those with fluid gender identities, reflecting 'a patchwork culture of short-term memories and missing records, conflicting histories and discontinuous samples, strands of the narrative pulled out of time'.[78] Both the multiple personae and the use of borrowed voices by DJs can thus be seen as a manifestation of the dismantled cyborg self. Norman Cook described the Fatboy Slim persona as the

> one with the most ludicrous excesses . . . He's the one who drinks the most and takes the most drugs, and if he has an idea, he always goes too far with it . . . he's kind of like a caricature of me. It's the personality that's most me.[79]

If Radiohead has encountered opposition for its ventures into more experimental styles that unsettle rock's authenticities, the anonymity of the DJs has proved problematic both for the musicians themselves and for their record companies, who have struggled to market music not identified with a face. The spectacular success of Moby is due in part to his becoming the face of electronic music that could be marketed to a mass audience. Similarly, unlike many DJs, he is noted for using live musicians in his performances and for stepping out from behind his devices to sing and to play instruments on stage. Much of Moby's music strikingly illustrates the productive potential of the posthuman, as Hayles writes, 'for getting out of some of the old boxes and opening up new ways of thinking about what being human means',[80] as well as the difficulties of escaping from some of these 'old boxes' within the new contexts.

Like 'Fitter Happier', Moby's song 'Porcelain' from *Play* (1999) explores the boundaries of the human and technological through the opposition of recorded human voices turned into loops and processed cyborg voices. Also like the Radiohead example, the piece is presented in a context that foregrounds the merging of human and mechanical, such as the album packaging, where the title *Play* is represented by the play symbol from tape decks and CD players. In 'Porcelain', however, the layering of materials is considerably expanded both in the number

[77] See also Taylor, *Strange Sounds*, 140–4.

[78] Plant, *Zeros and Ones*, 136–7.

[79] Comer, 'Unstoppable Force', 92. Straw writes of the multiple personae: 'In other periods, or in other styles of music, this would be commercially foolhardy, but in the field of contemporary dance music it is strategically appropriate. Within the dance music community, little value is attached to the idea of a creator retaining a consistent identity through ongoing changes of style and genre . . . And so, Norman Cook (itself a pseudonym) will subdivide his identity, producing distinctive versions of himself to work and flourish in specialized musical genres from which his particular identities seem inseparable.' Straw, 'Authorship', 207.

[80] Hayles, *How We Became Posthuman*, 285.

of layers and in the range of sound sources. Hayles's notion of a distributed cognition system seems particularly applicable to the way the various layers of Moby's music reference a range of temporal, racial and generic spaces to interact simultaneously and independently with different parts of listeners' bodies and minds. By distributing subjectivity between various subroutines, listeners can be seamlessly grafted into the system at many points (in contrast to the more conventional popular-music strategies of staging a single persona for listeners to observe or identify with). The piece's undeniable effectiveness and success in operating on many different types of listener can be measured not only in the huge album sales and radio play, but in the way it was very quickly taken up in advertising, television shows and films.[81]

As in 'Fitter Happier', the layers are each designed to allow the human and technological, the organic and machine, to circulate and interpenetrate in complex ways. The piece opens with a repeating series of four chords using a cinematic string sound. The noisy quality of the sound and the sharp cuts between each chord give it a patina of age and the character of a citation, as if it were taken from an old film.[82] Against the nostalgic layer of the slow-moving string chords, two contrasting percussion tracks are superimposed. This driving groove, which is itself introduced in two stages before being joined by a slow-moving bass line, occupies a very different space of electronic dance music and the dance club. Continuing the accelerating pace in which the layers are introduced, the next section is marked by the entrance of three more layers, contrasting with the previous material and introducing still different timbral and cultural spaces.

The most striking feature of the album is Moby's use of samples from African-American music from the first half of the century, including borrowings from a collection made by Alan Lomax, as well as old gospel and blues records. 'Porcelain' uses a prominent loop based on a vocal sample of an African-American singer, unidentified in the liner notes. Unlike the extended samples used in the first two songs on *Play*, 'Honey' and 'Find my Baby', the vocal sample in 'Porcelain' is more fragmentary and with a text that is unintelligible except for a single word: 'woman'. In contrast to the artificial quality of the other layers, the vocal sample seems to be intended to evoke the 'real'. This is supported by the much less processed sound of a new string layer and an acoustic piano playing melodic fragments that enter at the same

[81] According to Gerald Marzorati, 'All by Himself', *New York Times Magazine*, 17 March 2002, 34, 'Porcelain' has been used in a 'Nordstrom TV campaign, the trailer for the movie *The Beach* and episodes of the television shows *Third Watch*, *Party of Five* and *Jack and Jill*.

[82] Moby was featured in the 2000 Calvin Klein ad campaign for Dirty Denim, with the slogan: 'Comfortable, Worn-in. Dirty Denim looks worn even though it isn't.' *New York Times*, 16 January 2000. The situation is further complicated by the fact that the sound, with its abrupt attacks and decays, is actually a synthesized imitation of the distinctive dynamic envelope of the Mellotron, made famous by Led Zeppelin and the Moody Blues, which used a keyboard to trigger tape loops of recorded string sounds; thus Moby's string sound might be heard as a digital imitation of an analogue imitation of the sound of a string ensemble. For a similar example of what he calls a 'second order simulation', see Théberge, *Any Sound You Can Imagine*, 196.

time. The borrowing of African-American voices is a common feature in much electronic dance music by white DJs, a racial dynamic thematized through the opposition of 'authentic' black voices with recordings of 'phony' white voices, often explicitly linked to mainstream media, corporate America or dated educational films (for example, Fatboy Slim's 'The Rockafella Skank' from *You've Come a Long Way Baby*).

But if the use of the samples is undeniably effective, and has also served to bring listeners to an awareness of a wide range of music and musicians they may never have previously encountered, the insertion of the sampled voice into the cyborg system of the piece comes at a price. As with the vocal sample in 'Fitter Happier', the looping turns the voice into an object or (perhaps more appropriate in this context) into information in a subsystem that serves only to enunciate a longing.[83] The transformation of the recording into a posthuman voice happens not only through sampling, cutting and splicing, but in the way the samples circulate not so much as the products of other musicians and people, but as found objects from some vague and undifferentiated historical past. Thus despite Moby's usual care in acknowledging his sources and his awareness, as he said in a *New York Times* interview, of 'the long, non-illustrious history of white people pilfering African-American culture',[84] the particularity of the original samples tends to be enveloped in meanings shaped by a range of cultural tropes of race and the primitive, as if they were relics from an anthropology museum. For example, a *Spin* magazine critic writes of the Lomax samples:

> And for many listeners, hearing the aching grain of these voices transported into the digital present is an exhilarating yet sobering experience. Like Lomax, Moby is a white interlocutor of African-American voices who is crossing long abandoned roads; and that choice is fraught with a country's worth of emotion. As these songs join in with the rest of the album – traces of hip-hop, house, techno, synth-pop, punk – there's a sense of immense possibility, both terribly lost and defiantly infinite.[85]

Such objectification is closely bound up with the whole idea of *musique concrète* and the manipulation of sound as objects. Pierre Schaeffer wrote of the process of making *musique concrète* as liberating sounds from their original references. He described repetition as the central tool in the transformation of the original sounds, with all their real-world associations, into aesthetic objects distinguished by texture and timbre: 'Repeat the same sonic fragment. There is not an event any more. There is music.'[86] But this transformation from event to music has considerably different implications if the sound source is

[83] For a related argument concerning the sampling of female voices, see Barbara Bradby, 'Sampling Sexuality: Gender, Technology, and the Body in Dance Music', *Popular Music*, 12 (1993), 155–73.

[84] Neil Strauss, 'After "Go", Moby Went', *New York Times*, 9 June 1999, E3.

[85] Charles Aaron, 'Revenge of the Little Idiot', *Spin*, June 2000, 99.

[86] Cited in Carlos Palombini, 'Machine Songs, V: Pierre Schaeffer – From Research into Noises to Experimental Music', *Computer Music Journal*, 17 (1993), 14–29 (p. 15).

human as opposed to, for example, Schaeffer's train noises in *Étude aux chemins de fer*. With every identical repetition of the vocal loop, the 'event' – a person singing into a microphone on a certain day in a certain place – disappears further over the horizon.

Finally, in the midst of all these layers with all their mixed messages, Moby himself enters, though significantly not Moby directly, but Moby singing and speaking through a voice synthesizer. This point in the third track is the first time his voice is heard on the CD, the first voice that is not a looping sample taken from another source. The sound of the processed speech differs considerably from Radiohead's paranoid android; here Moby's soft and somewhat diffident voice is altered through the addition of a harmonized halo. Yet, as in 'Fitter Happier', when the mechanized voice speaks it is only to give bad news, the details of a relationship gone bad:

I never meant to hurt you,
I never meant to lie.
So this is good bye.[87]

That Moby's first appearance on his own album takes place only indirectly through a machine persona indicates how problematic the unaltered human element becomes in contexts dominated by the cyborg. As the song progresses his natural voice is increasingly submerged by the processing. Moby does reappear later on the album, and sometimes without any electronic guise, but only on a handful of tracks. It is as if the more borrowed voices are used, the more difficult it becomes to speak, the more out of place the unaltered voice sounds. Significantly, for a brief moment during the bridge section of 'Porcelain' a female voice is heard. The voice is neither sampled and looped nor electronically processed in any marked way; and unlike the sampled male voice, the singer is identified in the liner notes. But the female voice too becomes part of the overall system, first emerging seamlessly from the synthesized strings and then replaced in the final chorus by a soaring synthesizer melody. The challenge of re-integrating the human and the posthuman is dramatized in the video for the song, 'We are All Made of Stars' from *18*, the follow-up to *Play*, released in 2002. In an echo of the conclusion of *2001*, where Dave stands in his spacesuit in a replica of a luxurious hotel suite, the video shows Moby dressed in a full spacesuit in a series of bars and clubs, adrift and isolated from the people around him, thus undercutting the theme of togetherness and unity suggested by the chorus. Similarly, the prevalence of looping samples in Moby's music poses special challenges for live performance. In the 'Area 2' tour (2002) some of the vocal loops, including the one in 'Porcelain', were sung by an African-American woman, who thus took on the role of the sampler. In other songs, the live musicians on stage played along with disembodied pre-recorded loops broadcast over the sound system.

[87] See sound clip 4 at <www.jrma.oupjournals.org>. Moby, from 'Porcelain', *Play*. © Rave New World under exclusive licence to V2 Records.

That there are ramifications to adopting the cyborg persona is also suggested by *Kid A*, the album that followed Radiohead's *OK Computer*. On *OK Computer* the synthesized voice assumes a central role on only a single track, but on *Kid A* the cyborg persona has infiltrated the entire project, to the extent that Yorke's natural singing voice becomes more of a special effect.[88] The title track is sung throughout by a synthesized voice against sharply differentiated layered loops of slow-moving chords, melodic music-box chimes and frenetic drums. As in 'Fitter Happier', the mechanized voice, here produced by a vocoder modifying the sound of an Ondes Martenot, serves as a distancing, 'otherizing' effect allowing Yorke, as he says, 'to sing things I wouldn't normally sing. On "Kid A", the lyrics are absolutely brutal and horrible and I wouldn't be able to sing them straight.'[89] But in contrast to the monotone of 'Fitter Happier', the voice croons in an eerie but beautiful way barely intelligible fragments of the Pied Piper story:

I slipped away
I slipped on a little white lie.[90]

It is significant that here the computer voice says 'I', in marked contrast to the lack of any pronoun in 'Fitter Happier'. We are used to machines like televisions and computers saying 'you', but at the same time that many artists seem to be uncomfortable with a single stable persona, Morse has pointed out that machines seem to be increasingly willing to say 'I'.[91] The song ends with a statement of direct menace about the future of technology: 'The rats and children follow me out of town.' But more disturbing is the implied challenge the computer voice sings in the chorus – 'We've got heads on sticks. You've got ventriloquists' – which might be understood as refiguring the posthuman model from the perspective of the machine, or the wooden dummy claiming equality with its owner, or as HAL never stopping when Dave says, 'Sing it for me.'

ABSTRACT

Drawing on writings concerning the cyborg and the posthuman, this article considers songs by Radiohead, Moby and others that use processed voices, digitally generated speech and sampled vocal loops. In these songs the technological sphere is made the locus of expression, while the human voices are mechanized and drained of subjectivity. These pieces – products of a rock band that relinquishes its voice to a computer, and of a 'techno' DJ striving to make mechanized dance music sing – can illustrate some ways musicians have used posthuman voices to chart and destabilize the boundaries of race, gender and the human.

[88] Significantly, the internet discourse accompanying the album was marked by frequent observations of the blurring of the human and the technological; the title of the album has been linked to a software program for imitating children's voices as well as to the first human clone.

[89] Reynolds, 'Walking on Thin Ice', 32.

[90] As printed at <www.greenplastic.com/lyrics/songs/fitter.html>. See sound clip 5 at <www.jrma.oupjournals.org>. Radiohead, from 'Kid A', *Kid A*. © 2000 EMI Records Ltd.

[91] Morse, *Virtualities*, 19.