

The Politics of Magic: Fantasy Media, Technology, and Nature in the 21st Century

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The 2000s have been a decade of fantasy media. Two fantasy film series begun in 2001, *The Lord of the Rings* and *Harry Potter*, have now combined to produce eight of the twenty highest-grossing films of all time (Box Office Mojo, 2008). Fantasy authors such as Neil Gaiman, Susannah Clarke, and Philip Pullman have crossed over beyond the SF/fantasy niche to produce bestselling, critically acclaimed books. And massively multiplayer role-playing games such as *World of Warcraft* have hooked millions of subscribers and generated entire virtual societies.

Fantasy has become so ubiquitous, so quickly, that we may forget how unprecedented its prominence is. While the fantasy genre sports a rich literary history -- one could argue that it is the modern inheritor of the vast traditions of mythology -- it spent the bulk of the twentieth century as a marginalized field, dismissed as escapism for children and arrested adolescents. Even within the genre ghetto, it rarely achieved the crossover success or critical respectability of its doppelganger, science fiction. While SF novelists such as Isaac Asimov, Ray Bradbury, and Robert Heinlein reached mass audiences, only J.R.R. Tolkien among fantasy writers found similar influence. While classic SF films such as *2001: A Space Odyssey* (1968) and *Blade Runner* (1982) were acclaimed as prescient masterworks, no parallel canon of fantasy film emerged. The critical literature on fantasy film is dwarfed by the work on science fiction film. (Two rare exceptions are Bellin [2005] and Worley [2005].) And while the most commercially successful film series of the century, *Star Wars* (begun in 1977), borrowed much from fantasy, it transformed its swords and sorcery into light sabers and spaceships, disavowing the genre trappings of fantasy for the seemingly more relevant world of science fiction. [\[1\]](#)

But in this new millennium, the tables have turned. Why? What could fantasy offer that other genres weren't providing? And what are the consequences of this shift in the popular imagination?

The key to fantasy's contemporary resonance, I'd like to suggest, lies in the way the genre negotiates two intertwined preoccupations of our era: technology and nature. Fantasy films and games are astonishing spectacles of state-of-the-art computer-generated imagery, producing reality-defying virtual worlds of stunning verisimilitude. However, those virtual worlds evoke not the future, but the past, conjuring up pastoral visions of an era before industrialization. At a time of both great technological advances and looming ecological catastrophe, the fantasy genre provides writers, directors, game designers, and audiences an opportunity to re-imagine their relationships with both their machines and their environment.

Many of the most influential fantasy films of this decade began as novels many years earlier. Most prominently, *The Lord of the Rings* was written by J.R.R. Tolkien in the 1930s and 1940s, published in the 1950s, and first won a widespread cult audience in the 1960s. The

stories told by contemporary fantasy media, then, are hardly new. But it has only been in our current moment that this subcultural taste for fantasy has become a ubiquitous mass phenomenon. To better understand this shift in the zeitgeist, my focus in this essay will be on recent blockbuster fantasy films and games. My purpose is not to diminish the significance of their antecedents, but to pinpoint what has changed in this era to allow their sensibility to reach such a large audience.

The central trope of the fantasy genre is magic, an imaginary force that can represent both technology and nature. In some ways, a magic spell is a kind of stand-in for the computer program, coding the fantasy world in its digital image. But at the same time, magic is rooted in the ancient traditions of animism, a worldview that insists human consciousness is inextricably interwoven with the natural world. This paper will examine both of these models of magic, and how they intersect in contemporary fantasy media.

Before we do that, though, it will be helpful to better understand the relationship between fantasy and its closest generic relative, science fiction.

From Science Fiction to Fantasy: A Manifesto for Centaurs

Over twenty years ago, Donna Haraway (1985) published her landmark "Manifesto for Cyborgs" in *Socialist Review*. Surveying the battered state of progressive politics in the midst of the Reagan Eighties, Haraway diagnosed a failure of countercultural imagination. The left was dispirited, living off past glories. Nostalgia for the radical promise of the 1960s overshadowed any vision of the future. Widespread Luddism (born of understandable suspicion of the military-industrial complex) blinded progressives to the possibilities of new technologies. And rigid notions of identity threatened to fragment the left into warring factions unable to recognize their common ground.

What socialist feminism needed, Haraway argued, was a new kind of "ironic political myth" (Haraway, 1985: 65) -- a different story to tell itself about the possibilities of the future. This myth would need a new kind of hero. Examining the culture of her era, Haraway found the most inspiring ideas in a surprising place: not high art or avant-garde literature, but the lowbrow genre of science fiction. As Haraway was writing, the cyberpunk movement was revitalizing SF, offering a new set of tools for making sense of the emerging culture of postmodernity. Cyberpunk authors such as William Gibson and Pat Cadigan combined the speculative futurism of science fiction with the gritty urban texture of punk rock. At the center of this sensibility was the image of the human inextricably, messily intertwined with technology: the cyborg. Haraway's essay found the links between highbrow postmodern theory and this new pop energy, recognizing that both discourses were creative responses to the same cultural shifts, as the acceleration of late capitalism described by contemporaries such as Fredric Jameson (1984) rendered the modernist verities of fixed identities and familiar master narratives insufficient.

Haraway's choice of protagonist in her new myth was counterintuitive, because the most familiar fictional cyborgs of the era were hardly conventional heroes. *Star Wars'* Darth Vader represented a dystopian vision of the human consumed by the machine. The androids of *Blade Runner*, while more sympathetic, were intimidating, murderous übermenschen. Haraway's intervention was to claim the cyborg as a figure worth contesting -- to recognize the glimmer of utopia in these dystopian worlds.

Haraway's essay inspired a new generation of "posthumanist" theorists to rethink the relationship between the human and the machine (see, for example, Hayles, 1999) and helped envision a new kind of cyberactivism invested in engaging rather than rejecting new technologies. The internet boom of the 1990s confirmed Haraway's prescience, while bringing new recognition to the cyberpunk pioneers of the 1980s. And in 1999, the massive box office success of *The Matrix* completed cyberpunk's journey from the margins to the mainstream. Today, the ideas that seemed revolutionary two decades ago are practically common sense. In the era of MoveOn.org, Meetup.com, and homemade political ads viewed by millions on YouTube, left technophobia is a fading memory.

But a funny thing happened to cyberpunk in the twenty-first century. Its insights absorbed by the culture, it lost its critical edge. As SF editor David Hartwell once put it, discussing the similarly counterintuitive contraction of the genre after the Sputnik launch in 1957, "When it becomes real, it's merely technology. Real space travel almost killed the science fiction field" (Hartwell, 1996: 109). Similarly, as real life became more cyberpunk, fictional cyborgs grew redundant. *The Matrix* sequels (2003) were critical and commercial disappointments, and no new SF blockbusters emerged to take their place. Science fiction television series such as *Star Trek* (1966-2005) and *The X-Files* (1993-2002) ran out of steam. [2] And no new movement of science fiction writers emerged to capture the public's imagination as cyberpunk once did.

Instead, the fantasy genre has provided much more fertile soil, both creatively and commercially, in our era. But just as science fiction was viewed with suspicion by many on the left in the 1980s, today fantasy is likewise politically suspect. Fantasy's preference for metaphors from the past rather than the future can seem inherently conservative. As Haraway famously concluded her manifesto, "I would rather be a cyborg than a goddess" (Haraway, 1985: 101). Indeed, the success of fantasy in post-9/11 era -- the first *Lord of the Rings* and *Harry Potter* films both debuted over the 2001 Christmas season -- has often been linked by critics to audiences' desire to escape from a frightening and dangerous present into a comfortingly simpler vision of the past (see, for example, Grossman, 2002).

But a turn to the past can be used not just to escape from the present, but to historicize it, demonstrating that we have not always lived as we do today. The past can shine a critical light on the present, suggesting, as Patrick Curry puts it, "that just as there was life before modernity, so there can be life after it" (Curry, 1997: 15). Curry, drawing on the work of Fraser Harrington (1984), describes this defamiliarizing perspective as "radical nostalgia" (Curry, 1997: 16). Fantasy may often be set in the past, but it speaks to the dilemmas of twenty-first century reality.

Every genre possesses distinct tools, ways of reframing everyday experience to generate new insight into present circumstances. The central trope of the science fiction genre is extrapolation: projecting social, political, and technological trends into the future in order to envision, in extremis, the possible implications of present circumstances. Fantasy, while mixed in with SF on the bookstore shelves, is in many ways its mirror image. The central trope of fantasy is magic: a force by definition outside of scientific explanation.

Science fiction represents the world as it could possibly become. Fantasy, on the other hand, embraces the impossible (Nichols, 1993: 408). If what seems to be magic turns out to be explicable through science and reason -- like the ghost in a Scooby Doo episode who always

turns out to be that creepy amusement park owner -- we're out of the realm of fantasy, and back in the real world. (Except for the talking dog, that is.)

But the fact that magic doesn't exist in our real world is exactly what makes it so potent as metaphor. Its meanings float, untethered to everyday reality. That very fluidity and indeterminacy makes it a particularly valuable tool for representing what Zygmunt Bauman (2005) calls the "liquid life" of the twenty-first century. In an era in which our lives increasingly feel like science fiction, it takes a trope that extends beyond extrapolation to defamiliarize our world and bring new perspective to our everyday experiences.

Haraway herself has turned from cyborgs to other liminal creatures. In *The Companion Species Manifesto*, she writes, "By the end of the millennium, cyborgs could no longer do the work of a proper herding dog to gather up the threads needed for critical inquiry" (Haraway, 2003: 4). Instead, she examines how a serious consideration of the subjectivity of our companion animals likewise challenges our familiar boundaries between "the human and non-human, the organic and the technological, . . . modernity and postmodernity, nature and culture" (Haraway, 2003: 4).

Haraway writes of real-world relationships between dogs and humans, through breeding, sport, and companionship. But if we look for the works of the imagination that most provocatively explore the relationships between humans and other animals, we must turn to fantasy. Just as SF extrapolates through fiction upon the real-life meldings between human and machine, fantasy uses magic to intensify its representation of the connections between humans, technology, and the natural world.

In that spirit, I'd like to suggest a new myth for the twenty-first century: a Manifesto for Centaurs. The centaur is a creature from classical myth with the head and torso of a human and the body and hind-quarters of a horse. An ambiguous archetype, the beast has been used to represent the union of human and animal in both a positive and pejorative light. In Greek myth, the centaur Chiron was a great teacher and healer. On the other hand, some medieval sources "state that the Centaurs represented the duplicitous nature of man as both pious and literally beastly in his behavior" (Rose, 2001: 72). The centaur turns up repeatedly in contemporary fantasy media, including the *Harry Potter* and *Chronicles of Narnia* films.

The centaur is a quintessential magical creature: a figure impossible outside the bounds of the imagination. In the *Harry Potter* movies, the Hogwarts campus stands on the edge of a dark, mysterious forest, home to myriad dangers but also the source of much power. The tribe of centaurs who live in the woods are the liminal figures who can negotiate between the world of the forest and humans outside -- wary of human entanglements, but willing to assist if they are properly respected on their own terms.

Like the cyborg, the centaur is also a contested figure. Just as the fictional cyborgs of the 1980s were more monsters than heroes, the centaur -- and the fantasy genre it represents -- remains often complicit in the ideologies it seeks to transcend. As we shall see, the utopian animism in fantasy media often risks collapsing into smug anthropomorphism. But just as the cyborg was worth fighting for twenty-five years ago, so too the centaur today. The dreams that fantasy inspires are too vivid to turn away from.

The following sections will look at three ways magic functions as a metaphor for technology in contemporary fantasy media. We'll examine magic as technological spectacle, as a

reflection of our alienation from technology, and as an allegory for computer programming. Then, we'll turn to the other side of the story: how magic re-imagines our relationship with nature.

Magic as Spectacle

The most familiar explanation for the success of the blockbuster fantasy film is the development of new computer-generated imaging (CGI) technologies that can make the impossible seem real. Over the past two decades, Hollywood special effects have undergone a revolutionary shift. Advances in computer processing power have made it possible for filmmakers to largely replace traditional special-effects techniques such as model-building and stop-motion animation with CGI. This technology allows directors to create unnatural landscapes, spectacular battles, and inhuman characters, all of which can be blended seamlessly (or close to it) into the footage of real actors shot on physical sets.

Director Peter Jackson (2002), for one, has made the case that only with the development of CGI did it even become possible for him to successfully adapt the *Lord of the Rings* books into films. By this logic, animator Ralph Bakshi's attempted adaptation of the series in the 1970s was doomed from the start. Using the technology available to him at the time, Bakshi combined traditional animation with rotoscoping, a technique in which animators trace over live-action images. The result was an artistic and commercial disappointment. Now that Hollywood finally has the tools to do justice to the fantasy classics, it's making up for lost time, motoring its way as fast as it can through the decades-old works of Tolkien and C.S. Lewis.

Fantasy may be the ideal genre for the contemporary blockbuster film. Many critics have labelled the blockbuster a postmodern version of the early "cinema of attractions" described by Tom Gunning (1980), which was concerned less with character or narrative coherence than with pure spectacle (see, for example, Strauven, 2007). The trope of magic allows today's fantasy blockbuster to abandon any pretense to obeying scientific plausibility in pursuit of the most spectacular sequence.

But as Geoff King (2001) and Warren Buckland (1998) have argued, this critical emphasis on spectacle risks distorting the degree to which old-fashioned virtues such as storytelling and characterization remain necessary for blockbuster films to reach and satisfy large audiences. Likewise, the appeal of the fantasy genre in this decade cannot simply be explained by the rise of CGI. Magic is more than just an excuse for spectacle. It is a way of interpreting the world with its own rules, logic, and economy (see Jones, 1997). Spells must be learned, skills developed, some form of energy acquired and expended. To suspend their disbelief while watching a fantasy film, audiences need more than persuasive images. They must have reasons to want to believe in magic.

Magic as the "Black Box Effect"

Magic serves the role in fantasy that technology does in science fiction - and in fact, the role that technology serves in real life. Magic is the fictional force that makes tools work in fantasy worlds. The funny thing, though, is how little separates technology from magic in our own everyday experience of the world. Think about all the technological devices you own. Now, for how many of them do you actually understand how they work? In an increasingly

technologically complex society, we grow more and more alienated from the actual workings of our technology.

Car engines are a good example. A century ago, you had to know your way around a car engine if you wanted to keep it running. Even a generation ago, it was expected that a driver should know what's under a car hood. And with a little study, you would have been able to develop a pretty clear understanding of what connects to what, and what the problem might be if something goes wrong. But in the past decade or so, auto repair, like so many aspects of our lives, has grown more and more computerized, and less and less accessible to the common user. Cars today are filled with computer chips whose problems can't be diagnosed on sight the way you can spot a blown tire. When your engine light goes on, you have to take it into the repair shop, where they plug in an electronic device that diagnoses the problem and spits out a "repair code" telling the mechanic what to do. This device is the intellectual property of the car manufacturer, which will only distribute it to authorized dealers -- spurring the decline of the independent repair shop as well as the amateur mechanic (Sheeres, 2004).

A car, then, used to be an open book. Anybody could pop the engine and take a look inside and see how it works. Today, it's an example of what science studies theorists such as Bruno Latour (1987) and Langdon Winner (1993) call the "black box effect:" the creation of a walled-off machine whose workings are kept opaque and mysterious to users. For all intents and purposes, it might as well run on magic. That makes magic a valuable metaphor for representing our alienated relationship to technology.

The *Harry Potter* films juxtapose magic and technology to great satirical effect, defamiliarizing our own everyday technologies by placing them in the context of a magical world. Harry, who was raised in our non-magical world, is understandably surprised and delighted by the marvels he encounters when he is introduced to the world of magic. Floo powder, for example, is a magical substance that wizards use to teleport between locations via ordinary fireplaces. But Arthur Weasley, the wizard father of Harry's friend Ron and expert on non-magical "Muggle affairs" for the Ministry of Magic, is equally enthralled by ordinary objects such as cars, which seem just as exotic to him.

Science fiction author Arthur C. Clarke famously wrote, "Any sufficiently advanced technology is indistinguishable from magic" (Clarke, 1973). I'd suggest that similarly, we could say today that "any technology sufficiently alienated from the user is indistinguishable from magic." I walk up to my 2008 Prius, and the "smart key" in my pocket automatically unlocks the door as I touch the handle. I sit down, push a button, and the car starts, the key still in my pocket. It might as well be magic.

Magic as Computer Programming

If magic in one sense captures the user's alienation from modern technology, it can also represent the power of those who master today's most potent tools: computer programmers. As Friedrich Kittler (1995) points out, computer code, unlike normal language but much like a magic spell, actually does what it says. Programmers have long recognized the parallels between a magician's spell and a piece of software. Thus the etymology of such terms as programming "wizard" and software "daemon" (see Raymond, 1996). Both spell and program manipulate simple words on a page to bend reality to their will. And just as programmers must master arcane languages such as C++ to gain control of their machines, magicians in

works such as Ursula le Guin's *A Wizard of Earthsea* (1968) and Patrick Rothfuss's *The Name of the Wind* (2007) must learn the "true names" of objects in order to master them. Internet pioneer and SF writer Vernor Vinge plays on this parallel in one of the founding texts of the cyberpunk movement, the novella *True Names* (1981), in which duelling hackers commandeer computer networks to gain wizard-like power. While using pseudonyms online, the characters go to great lengths to keep their real-life identities secret, to avoid being tracked down and arrested. In the novella, and indeed in cyberspace today, to learn a hacker's true name is to gain great power over them.

One could say that programmers are simply the latest in a long line of creators to recognize the connection between magic and art. Shakespeare's *The Tempest*, for example, explores the parallels between the role of the sorcerer Prospero, master of his mysterious island, and the role of Shakespeare himself as creator of *The Tempest's* fictional world. (The current television series *Lost* is just the latest reworking of this story). Today, the computer age has brought unprecedented power to the simple manipulator of symbols.

The realm of computer games shows the full power of the programmer as magician. Just as in fantasy, the spell can bend reality to its will, so too the program, within the confines of the "virtual reality" produced by the machine, can transcend the laws of nature. When designing a computer game, the laws of physics, time, and mortality need not apply. If you want to allow your players to fly, or give them unlimited lives, no problem, as long as the internal rules of gameplay are coherent and satisfying. In this way, programming is very unlike more traditional forms of technological design, such as architecture. If you're designing a building, you'd better pay attention to the laws of gravity. But in a computer game, why bother? The laws you have to worry about are the internal rules of the programming language, just as the magic user must follow the logic of the spell.

This may help explain why today the most popular online role-playing game, *World of Warcraft* with over ten million subscribers (Kirkpatrick, 2008), is set not in a science fiction universe, but a fantasy realm. One might think that the techno-savvy users who play these complex, challenging games would gravitate toward science fictional settings that would seem to speak most directly to their own experiences with computers. However, the fantasy genre is hardly an escape from technology, but rather a compelling reworking of the raw materials of our technology-infused lives.

Magic as Animism

One aspect of magic's appeal, then, is in its representation of the computer's power to produce virtual realities unbound by any physical laws. But the flip side is its deep roots in a worldview that predates modern technology, offering an ongoing critique of technology's limitations, and a utopian glimpse of its alternatives.

Fantasy is the inheritor of the premodern philosophy of animism: a perspective that sees all of human surroundings -- from animals to plants to rocks and the wind -- as infused with meaning and consciousness. The history of Western thought, historian of science Morris Berman (1981) argues, is gradual resituation of consciousness from the world as a whole into the minds of men -- what Max Weber famously called "the disenchantment of the world" (Weber, 1946: 155; see also Norberg and Lundblad, 2001 and Glynn, 2003).

As inheritors of the Enlightenment, moderns today take for granted the Cartesian distinction between human subjects and nonhuman, inert objects. Any other way of thinking seems absurd on its face -- unscientific, irrational, "magical." We presume that our animist ancestors were simply too "primitive" to understand how the world really works. But philosopher David Abram makes an intriguing counter-argument. Drawing on the phenomenology of Edmund Husserl and Maurice Merleau-Ponty, Abram argues that human perception is impossible without a continuous process of interchange with the perceived. Perception is always a form of participation. The mind cannot exist in isolation, but is only formed in the context of "our ongoing reciprocity with the world" (Abram, 1996: 56). On the level of the body, we know this, but as we conceptualize, we repress the evidence of the senses.

This denial of our senses, Abram argues, helps explain the ecological devastation we live with today. Only when we repress our awareness of our reciprocal relationship with the natural world can we do the damage we've caused. Conversely, a successful environmental movement requires a reawakening of our senses, and a rediscovery of our animist legacy. As Berman writes:

For more than 99 percent of human history, the world was enchanted and man saw himself as an integral part of it. The complete reversal of this perception in a mere four hundred years or so has destroyed the continuity of the human experience and the integrity of the human psyche. It has very nearly wrecked the planet as well. The only hope, or so it seems to me, lies in a reenchancement of the world. [...] Some type of holistic, or participating, consciousness and a corresponding sociopolitical formation have to emerge if we are to survive as a species. (1981: 23)

Abram provocatively rethinks our understanding of animism and magic in his pioneering work of ecocriticism, *The Spell of the Sensuous*. Abram travelled to rural Asia to study the relation between magic and medicine among the traditional sorcerers, or dukun, of Indonesia and shamans, or dzankris, of Nepal. Abram concludes that the conventional Western notion of magic as the realm of the "supernatural" is wrongheaded. In fact, what gives these traditional healers their power, he argues, is their special relationship with the natural world. The healers he met conceive of disease in ecological terms, as a reflection of an imbalance between humans and the surrounding land. To heal the sick, they must redress that imbalance. And to do that, they must be able to see the world through the eyes of their nonhuman neighbors: animals, plants, rocks, the wind -- the entire living world. The rituals, chants, and meditative practices of these healers, misunderstood by generations of Western anthropologists as calls to supernatural "spirits," are rather, according to Abram, what allows them access to these radically different forms of perception. In an introduction titled "The Ecology of Magic," Abram writes:

[I]n tribal cultures that which we call 'magic' takes its meaning from the fact that humans, in an indigenous and oral context, experience their own consciousness as simply one form of awareness among many others. The traditional magician cultivates an ability to shift out of his or her common state of consciousness precisely in order to make contact with the other organic forms of sensitivity and awareness with which human existence is intertwined. Only by temporarily shedding the accepted perceptual logic of his culture can the sorcerer hope to enter into relation with other species on their own terms [...] His magic is precisely this heightened receptivity to the

meaningful solicitations - songs, cries, gestures - of the larger, more-than-human field. (Abram, 1996: 9-10)

Magic, then, in its perhaps most primordial sense, is the experience of existing in a world made up of multiple intelligences, the intuition that every form one perceives -- from the swallow swooping overhead to the fly on a blade of grass, and indeed the blade of grass itself -- is an experiencing form, an entity with its own predilections and sensations, albeit sensations that are very different from our own.

The neo-animism of Abram and Berman shares some similarities with Bruno Latour's actor-network theory, which deconstructs the modern distinction between nature and culture, human and nonhuman, and instead proposes a "Parliament of Things" (Latour, 1993: 142). But Latour might very well dismiss their vision as sentimental, counterproductive antimodernism. Latour argues instead, in the title of one book, that *We Have Never Been Modern* in the first place. He asks:

Haven't we shed enough tears over the disenchantment of the world? Haven't we frightened ourselves enough with the poor European who is thrust into a cold soulless cosmos, wandering on an inert planet in a world devoid of meaning? [...] [W]e have never abandoned the old anthropological matrix. We have never stopped building our collectives with raw materials made of poor humans and humble nonhumans. How could we be capable of disenchanting the world, when every day our laboratories and our factories populate the world with hundreds of hybrids stranger than those of the day before? (Latour, 1993: 115)

Latour concludes that antimoderns are simply moderns' "stooges" (Latour, 1993: 135), swallowing the lies modernity tells itself and simply reversing the valences. "In an effort to offer a supplement of soul to the modern world, the one it has taken away -- the one it had, the one it was quite incapable of losing" (Latour, 1993: 124).

Like Haraway's "Manifesto for Cyborgs," Latour's *We Have Never Been Modern* is a bracing critique of reflexive antimodernity -- a fault Abram and Berman (along with Tolkien and his inheritors) are perhaps at times guilty of. But where Haraway rejects Goddess feminism outright in her embrace of the cyborg, Latour leaves room for models which look to the past within his utopian vision of a "nonmodern" future. He concludes:

Let us keep what is best about [the premoderns], above all [their] inability to differentiate durably between the networks and the pure poles of Nature and Society, their obsessive interest in thinking about the production of hybrids of Nature and Society, of things and signs, their certainty that transcendences abound, their capacity for conceiving of past and future in many ways other than progress and decadence, the multiplication of types of nonhumans different from those of the moderns (Latour, 1993: 133).

In this sense, we can find common ground between the neo-animism of Abram and Berman, and Latour's "nonmodern Constitution."

Abram and Berman, in any case, are not simple nostalgics. Both acknowledge that the animistic worldview cannot simply be reproduced in the context of postmodern technological

society. Both writers look instead to holistic scientific models such as James Lovelock's (1975) Gaia hypothesis, which proposes that the entire Earth constitutes a single complex organism. Likewise, we can see emerging fields such as ecological psychology (Gibson, 1979) and situated cognition (Robbins and Ayede, 2008; Noë, 2009) as attempts to develop models of consciousness and culture which view "every organism [as] not so much a discrete entity as a node in a field of interrelationships" (Ingold, 2000: 4).

Meanwhile, in our dreams, we have always been unapologetic animists. As we sleep, every object shimmers with meaning, and dualism falls away. Freud recognized this, while nonetheless dismissing the animist worldview as a narcissistic fantasy of human omnipotence. Rather than seeing the "residues of animistic mental activity" (Freud, 2003: 47) as irrational holdovers, we might instead think of them as the mind's attempts to reclaim a lost sense of wholeness denied us in the modern waking world.

The fantasy genre is one of the few cultural spaces where a version of this animistic perspective still survives -- domesticated into the world of make-believe (and often thought of as a genre for children), but still powerful enough to grip our imaginations. Under the cover of fiction, we grant ourselves brief moments to imagine that the world is truly awake, and truly a part of us. In these moments, we see glimpses of what centaur consciousness might look like. In a time when ecological crisis is ever harder to ignore, it is not surprising that this craving for a different relationship with the natural world grows stronger.

Animism pervades contemporary fantasy. Fantasy filmmakers take advantage of CGI technology to fill the screen with talking animals, self-aware plants, and landscapes that breathe with meaning. This animistic vision, however, is often intertwined with its shadow double, anthropomorphism. While animism challenges us to engage the natural world on its own terms and in doing so transform us, anthropomorphism simply remakes the world in our own image and subordinates nature to our desires. As the following examples from recent fantasy films demonstrate, the push and pull between animism and anthropomorphism define the possibilities and limitations of centaur consciousness.

Animism and Anthropomorphism in *The Lord of the Rings: The Two Towers* and *The Golden Compass*

The Lord of the Rings: The Two Towers (2002), the second of the three *Lord of the Rings* films, features, among many magical creatures, a race of sentient trees known as the Ents. The Ents look more like trees than people, and their sense of time and space is arboreal rather than human. They can take weeks to hold a conversation, and they are reluctant to get involved in the affairs of men, who are often no friends of the trees. When they discover that the corrupt wizard Saruman has deforested his region, however, they finally act, destroying his forces with great fury.

Ent-consciousness is not exactly what Abram might describe as tree-consciousness. True tree-consciousness would mean to learn what it feels like to move at the pace of a branch or root, to communicate through seed and pollen. On the other hand, the Ent is more than simply a tree that acts like a person. We learn that the Ents were once a humanoid race of "treeherds." Over time, they grew more and more like the trees they cared for. As we can see, their arms have transformed into branches, legs into trunks, hair into moss, facial features into knots in the wood. An Ent, then, is not a tree that acts like a human; rather, it's a human

who's become treelike. Rather than anthropomorphism, we could describe this transformation as its reverse - perhaps, vegetamorphism.

The Golden Compass (2007) dramatizes the inextricable link between the human and animal worlds through a particularly inventive conceit, the dæmon. In the magical universe where the story begins, every human's soul is physically incarnated in the form of an animal. A child's dæmon can shape-shift (represented in the film through the CGI technology of "morphing"), but after puberty, the dæmon settles into a fixed form which reflects dominant aspects of the human's personality -- a kind of totem animal as constant companion. Most human and their dæmons must remain in close proximity or suffer severe physical and emotional pain. If a human is killed, the dæmon disappears, and if the dæmon dies, the human dies as well.

The Golden Compass, like *The Two Towers*, risks anthropomorphism, as dæmons serve in a sense as simply animal reflections of human subjectivity. But dæmons also function as the reverse: reminders of the animal within the human. As Maude Hines writes, "dæmons are what connect us to animals, reminding us that we too are animals" (Hines, 2005: 45). The villain of *The Golden Compass*, Mrs. Coulter, conspires with religious authorities to develop a horrifying device to permanently separate children from dæmons, as a way to repress the primal drives of sex and aggression and produce docile citizens. The process is a nightmare version of Weber's "disenchantment," as the rejection of the animal within the human leaves the children soulless and ashen.

Becoming-Animal in *Harry Potter and the Prisoner of Azkaban*

Harry Potter first discovers his magical powers in *Harry Potter and the Sorcerer's Stone* (2001), the first film in the series, on a trip to the zoo in nonmagical London. There, he discovers that he can suddenly speak Parseltongue, the language of snakes. Without quite realizing what he is doing, he responds to the caged snakes' pleas and frees them, causing havoc. Harry learns he is special and powerful by discovering the animal within himself.

By the third film, *Harry Potter and the Prisoner of Azkaban* (2004), the Potter universe has been populated with a rich network of human-animal relations. A partial list of those in this film includes:

Pets (owned by children studying to be wizards at Hogwarts Academy):

Harry Potter's owl Hedwig.

Hermione Granger's cat Crookshanks.

Ron Weasley's rat Scabbers (later revealed to be the shape-shifted form of the traitorous human Peter Pettigrew).

Animagi (adolescent and adult wizards who have learned how to shape-shift between human and animal form):

James Potter, Harry's now-deceased father, became a stag.

Sirius Black, Harry's godfather becomes a giant black dog.

Peter Pettigrew becomes the rat Scabbers.

Remus Lupin becomes a werewolf, although he lacks control over the shift, which overtakes him on the full moon.

Magical creatures:

The Whomping Willow, a dangerous tree that attacks anything in reach of its branches.

Buckbeak, a hippogriff (a mixture of lion, eagle, and horse) sentenced to execution for attacking an aggressive student, then rescued by Harry, Hermione and Ron.

The Monster Book of Monsters, a textbook that is itself a monster.

The Boggart, a monster who takes the shape of its victim's worst fear.

Patronuses, animal spirit protectors produced by the Patronus Charm spell. Each wizard produces a different patronus -- Harry discovers his to be a stag, the same form as his father's animagus shape.

The frequent shapeshifting of characters in *Prisoner of Azkaban* between human and animal forms evokes the process that Gilles Deleuze and Felix Guattari (1991) call "becoming-animal" - a transformation that challenges the boundaries of human identity and breaks down the Oedipal subject. In a section of *A Thousand Plateaus* appropriately titled, "Memories of a Sorcerer," Deleuze and Guattari offer an intriguing hierarchy of animal representations:

We must distinguish three kinds of animals. First, individuated animals, family pets, sentimental, Oedipal animals each with its own petty history, "my" cat, "my" dog. [...] And then there is a second kind: animals with characteristics or attributes: genus, classification, or State animals; animals as they are treated in the great divine myths, in such a way as to extract from them series or structures, archetypes or models. [...] Finally, there are more demonic animals, pack or affect animals that form a multiplicity, a becoming, a population, a tale (Deleuze and Guattari, 1991: 240-241).

As Cary Wolfe writes, "Deleuze and Guattari's distinctions aim to underscore that the figure of the animal, properly understood, is a privileged figure for the problematic of the subject in the most general sense because here we are forced to confront the reality that the subject is always already multiple" (Wolfe, 2003: 170).

We could roughly match the three groups of animals in *Prisoner of Azkaban* to Deleuze and Guattari's three categories, although with Donna Haraway (2003), I bristle at their tidy hierarchy. The pets are certainly subordinated to their human "masters," but they also retain autonomy. Crookshanks the cat continually chases after Scabbers the rat, ignoring their owners' attempts at discipline.

The animagi are very much archetypal figures, each animal reflecting the character of its wizard. Sirius is dangerous but loyal, James is noble, Remus lives in fear of aggression he can't always control, and Peter is a rat. In the stability of these archetypes (really closer to a stereotype, in the case of the rat) we see perhaps the limits of the film's animism. The animagi remind us of the animal within the human, but each animal remains singular, unitary -- unlike the continuously shapeshifting dæmons of children in *The Golden Compass*, which are always in the process of becoming.

The magical creatures in *Prisoner of Azkaban* are the certainly the most disruptive, although in some cases coded negatively as monsters. The hippogriff, whose impending execution motivates the film's climax, is not simply a hybrid, but a hybrid of a hybrid: it's the offspring of a mare and a griffin, which itself is a magical creature with body of a lion and the wings of an eagle. On the other hand, the Boggart, which shape-shifts into the worst fear of whoever it

confronts, is a nightmare vision of the instability celebrated in *The Golden Compass*. The Monster Book of Monsters is a particularly inspired animistic creation -- a book that embodies its own subject. It's presented not as threat but comic relief, attacking its owners like an aggrieved poodle until they learn to soothe it by rubbing its binding.

But perhaps to rank the various forms of animals in *Prisoner of Azkaban* along a scale is to miss what's most distinctive about the film: the way it presents humans and animals living interdependently in a dense network of affiliations. Almost every frame of the film flickers with plant and animal life. Some of the most vivid scenes, in fact, don't involve humans at all, as the camera of director Alfonso Cuarón periodically cuts from the narrative to follow the paths of birds and butterflies as they fly through the campus grounds, tour the countryside -- and get smacked by the Whomping Willow.

Magic between Technology and Nature

What are the possible consequences, then, of the emerging centaur consciousness produced by twenty-first century fantasy media? We could certainly see the strange mixture of technology and nature in these stories and games as simply a compensatory fantasy: as the globe melts, we retreat to our movie, TV, and computer screens to recreate an imaginary version of the world we've lost. But if we are to have any hope for the future, it must involve just the kind of marriage of science and spirit that these fantasies are groping towards.

In calling for a "reenchantment of the world," Morris Berman points out that the posthuman science of cybernetics actually has much in common with the archaic tradition. Cybernetics, like animism, recognizes "the relational nature of reality" (Berman, 1981: 273): the fact that we are all us - human, animal, machine, plant, stone, wind -- part of the same integrated circuit, inextricably enmeshed in multiple feedback loops. To be a centaur is already to be a cyborg, and vice versa. Learning the lessons of fantasy, then, does not need to mean clinging to a lost, mythical past. But it will require us to re-imagine the future.

Notes

[1] One could certainly argue that *Star Wars* owes as much to fantasy as science fiction. But the way the film series reframes fantasy elements through the rhetoric of science fiction demonstrates its era's reluctance to nakedly embrace the fantastic without a veneer of pseudo-scientific rationalization. In the original *Star Wars* (1977), Obi-Wan Kenobi defines the Force as "an energy field created by all living things." The terms -- "force," "energy," "field" -- deploy the language of physics to describe what more traditionally might be called "spirit," "karma," or "God." Most notoriously, in *The Phantom Menace* (1999), we learn that all living things are filled with microorganisms known as "midichlorians," which communicate with the Force. A blood test determines that Anakin Skywalker has "a high concentration of midichlorians," proving that the Force is strong with him. The dissonance of this genetic explanation for a mystical metaphor provoked a fan backlash, perhaps reflecting an emerging popular willingness at the turn of the millennium to accept magic on its own terms.

[2] An exception to the demise of science fiction in this decade is the revived *Battlestar Galactica* (2004-) franchise. But the limits of *Battlestar's* commercial success suggests the changed playing field for science fiction today. While *Star Trek* spawned multiple series and feature films, *Galactica* remained a cult phenomenon on the low-rated SciFi network. Following Thomas Schatz's (1981) model of generic evolution as "patterns of increasing self-

consciousness," we could compare the *Star Trek* (and original *Galactica* [1978-1979]) series' "classicism" to the new *Galactica's* "self-reflexivity." Schatz points out that as audiences become more familiar with a genre's formal and thematic structures, they demand more self-aware storytelling. *Galactica*, produced by *Star Trek* veteran Ronald D. Moore, was widely celebrated for its deconstruction of science fiction clichés, presenting fallible heroes, sympathetic villains, and an ambivalent perspective towards technology -- including cyborgs. This approach won the show critical praise, but perhaps limited its audience. As Schatz writes, "we tend to regard early genre filmmakers as storytellers or craftsmen and later ones as artists" (Schatz, 1981: 41). Compared to the science fiction genre, the fantasy genre on film and television is still largely in its "classic" stage (save for rare auteurist exceptions such as Guillermo del Toro's *Pan's Labyrinth* [2006]).

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Mankind has come a long way since the dawn of the 21st Century. From the discovery of water on Mars, to the discovery of the TRAPPIST-1 system, which has 8 planets orbiting around it, 3 of them in the habitable zone. The world of science is endless which is now growing faster than ever before. The following are some of the remarkable scientific discoveries of the 21st Century.

1. Detection of Gravitational Waves Gravitational waves are ripples in the fabric of Space-time produced by the acceleration of massive objects in Space, these are just like the ripples rain drops produce when they fall in the lake. In 2015, LIGO first time detected a gravitational wave which originated from the collision of two black holes that happened approximately 1.3 billion years ago. Find out here 7 greatest technological inventions of 21st century.
- Views of the world witnesses the magic of your camera. All you need is one account to store all important events of your life. YouTube had turned out be million dollars income earners for few YouTubers. It is one of the most important face of social media too. For companies, it is a video platform sound enough to reach to your customers in few minutes. YouTube's popularity is pacing up day by day in or out of online community.
- Internet of Things is the fastest developing concept of 21st century. What if your entry into your room tells your air condition to switch on automatically? Sounds terrific, right? Internet of Things is such an innovative subject that has caught the heat of discussion in current era. We asked experts from the world of science and technology to describe the societal challenges that they think matter in 2017 and beyond.
- Kate Darling, Research Specialist at MIT Media Lab. Fellow at the Harvard Berkman Klein Center for Internet & Society Companies are going to follow their market incentives. That's not a bad thing, but we can't rely on them just to be ethical for the sake of it, for the most part.
- The other half is the world. Complex dynamical systems form patterns in nature. Even where master plans have been drawn up, these tend to be either "fantasy designs" drawing on wholly inappropriate models such as Dubai or Singapore; or they mimic equally inappropriate plans drawn up for cities in Europe or the US.