Afro-Futuretyping Generation Starships and New Earths 05015 C.E.

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We are slaves in the sense that we depend for our daily survival upon an expand-or-expire agro-industrial empire—a crackpot machine—that the specialists cannot comprehend and the managers cannot manage. Which is, furthermore, devouring world resources at an exponential rate.

<div style="text-align: right;">Edward Abbey (Bishop, 2010, p. 36)</div>

The Long Now Clock hit 05015 C.E. (Common Era) on Earth, and trillions celebrated as the signal was relayed across starships and space colonies now arrayed across a rather small part of the galaxy, but considered miraculous, nonetheless, as faster-than-light travel now added some capability similar to a Prius and its combination of gas and electricity. Some received the signal earlier than others as Earth's year moved further from 5015 by the time the last human space outpost signaled back. A dazzling combination of human speciation, various forms and futuretypes of humanity challenged what we originally thought humans could be. In addition, the tired notions of command and control systems shrunk as a percentage of how to live aboard and run a starship and/or space colony.

The limiting assumptions for circulating stories of space exploration perpetuate, confirm, and challenge our assumptions about gender, cultural, and racial identity. One rampant assumption is the perpetuation of segregation simply by virtue of how the crew and its generation starship will be constructed.

Generation starships were originally imagined by Konstantin Tsiolkovsky (Caroti, 2011) to solve the real problem of sending spaceships between stars because the length of the voyage would span a number of human lifetimes. Without the warp engine envisioned by *Star Trek* to enable us to go at faster than light speed, the generation starship was envisioned as a possible solution and is a persistent science

fiction genre. The fascination with how human beings might govern themselves, create societies, and life in space has taken several forms in literary fiction and film, from Robert Heinlein (1997) to Harlan Ellison (1973) and Kim Robinson (2015). The human beings who finally reached a new Earth-like world would be the remote descendants of the original long-deceased crew, with intervening generations taking care of and maintaining the journey or not, living and dying during the interim.

The already always presence of rank and hierarchy are built into the assumption that the command and control structure will be the best approach for long sojourns for starships. From this perspective, inclusivity is negligible. We have to survive in a dangerous environment, and we need specialized experts in command, logistics, security, and work similar to being in a naval submarine, or the International Space Station, or in any space adventure futuretype we have seen from *Star Trek* to *Star Wars.* What other visions or futuretypes can we imagine to envision leadership in the stars?

The generation starship captures my imagination as the most interesting genre to look at in terms of communication and the anthropology of the interstellar journey. Right now, as much as we appreciate *Star Trek,* we are not quite there yet, although we are trying, as the 100 Starship project has launched—at least on the ground.

Mae Jamison, the first African American female NASA astronaut in space, leads this project and explains that

> we exist to make the capability of human travel beyond our solar system a reality within the next 100 years. We unreservedly dedicate ourselves to identifying and pushing the radical leaps in knowledge and technology needed to achieve interstellar flight, while pioneering and transforming breakthrough applications that enhance the quality of life for all on Earth. We actively seek to include the broadest swath of people and human experience in understanding, shaping and implementing this global aspiration. (100 Year Starship Project, para. 1)

In the spirit of Jamieson's progressive vision, let us try to reimagine the generation starship as the epicenter for a new postcapitalist democracy, the city-state-starship akin to a renewed Greek and multicultural reenvisioning of governance.

Recent popular literary fiction about space travel has made some breakthroughs in positing other systems of governance beyond the capitalistic model. Still, resistance to such attempts is regularly portrayed through a conspiratorial lethal backlash. Especially in Kim Stanley Robinson's (2012) novel *2312,* in which he envisions a populated solar system 300 years from now, where a number of solar system planetary moon-based colonies work in the cooperative system of the Mondragon. This system, created in Spain, in the aftermath of World War II, offers cooperative ownership of the resources of production and initiates an exchange system of goods that strives against exploitation of resources on the backs of slave labor.

In this future world, an exchange of goods enriches the collective span of Earth's power over the rest of the solar system. Despite this power, other planetary colonies such as Jupiter's moon Europa, a rich and terraformed Mars, and an interim terraformed Venus vie with Earth in competing economic systems, of Earthly colonial rule versus the more egalitarian trade of the Mondragon among the rest of the solar system habitats. Powerful forces on Earth struggle to break the hold of the Mondragon in space and use artificially intelligent androids to thwart its expansion. Earth is the de facto imperial power in this scenario as it consumes solar system resources through its import/export space elevator. Robinson explores human difference and speciation as genetic engineering is consciously used to provide humans with more choices while they build colonies on the various moons, terraformed worlds, and hollowed-out asteroids as new forms of space habitats that mimic Earth-like environs.

Generation starships will take this world farther as they experiment with governance, and by inference, with difference, in terms of space caste, race, class, and gender as well. The most reactionary tether themselves to the orthodoxy they adhere to while the most experimental renew democratic egalitarianism and neocosmopolitanism. The main characters of *2312* have superendowed hermaphroditic genitalia, complete with a passionate love scene of interlocking keys as an unforgettable metaphor. Families are extended, nourishing family pods of multiple sets of biological and kinship parental figures. This hyper sense of inclusive diversity provides opportunities to rethink how leadership and power works.

In contrast to Robinson's creative and exciting vision, television versions of space travel and generation starships are far less imaginary than the literary world in terms of plot, casting, and breaking through issues of difference. Where actual funded projects such as the 100 Year Starship project and Project Icarus enjoy some measure of government and private funding, a number of television shows are literally escaping from space to crash back down to Earth and possibly diminishing our expectations for space. *The 100,* a show about an apocalyptic and post-nuclear-war Earth, imagines a surviving linked group of space stations, the Ark, as the last carrier of humanity in space for the last 97 years—2100 or 2200 perhaps? Like a dystopic Singaporean city–state in space, infractions of Ark rules are met with imprisonment and death.

Plus, the Ark is dying. Depleted oxygen prompts an existential crisis, and, presumably, no scientific advancement has arisen to forestall this fate. Holding this silly design flaw at the door of implausibility for a while, we can continue to analyze the emergence of dystopic futuretypes at play. A group of juvenile delinquents are sent down to see whether Earth is now inhabitable as the nuclear clouds have dissipated. Did I mention this show is on the CW network, where new generation 20 somethings predominate in rejuvenating all heroic and past, present, and future cultural genre TV niches through youth, sexual tension, and a few good plot twists? The titular 100 get sent down along with a few of the elite 20-something children to guide the construction of a new world amid the debris. Only they are not alone, as the Ark 100 kids discover, calling the earthbound survivors "Grounders." This surviving group of humans has adapted to the former radioactive environment and slither up and down trees with stealthy guerrilla warfare tactics to spy and kill some of the 100.
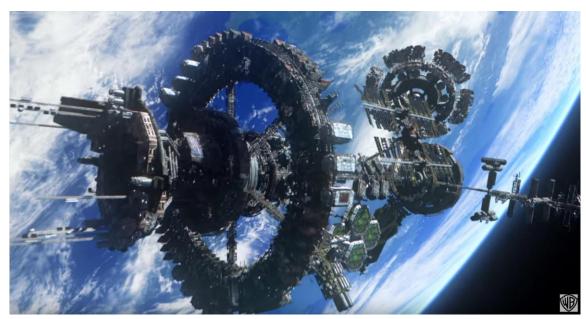
Figure 1. [***Trailer for* The 100 *(2013)*](). (Warner Bros., UK, 2013)
[Ctrl+Click on title for video clip.]

The Grounders, or "tree people," as they call themselves, are Brown, mixed with some White characters. Perhaps the casting is meant as a metaphor for Native aboriginals closer to the Earth rather than their now invading cousins. The Ark is led by a Black Chancellor, and some African Americans and Asians are seen in the cast but the Grounders are definitely the "Other," postaboriginal human Brown and Black with patches of Whiteness. The Ark is dominated by a White majority resettling the Earth. Have we heard of this story before? Attempted lynches and harassment eventually kill off the Chancellor's Black son early on in the series. The main protagonist, Clarke, fights to restore order among the Ark 100 as they fly initially into an anarchic neo–*Lord of the Flies* formation bent on doing "whatever the hell when we want," and pent-up sexual release is the order of the day. That is, until the Grounders start harassing the Ark 100. Another, undisclosed colony of humanity, the Mt. Weather colony, has survived in a mountain bunker and has captured Grounders to bleed them for bone marrow, as a treatment to protect them against radiation sickness as they try to immunize themselves against the outside and regain protective immunity. They have manipulated the Grounders and fashioned a horrific concentration camp to experiment on them.

The 100 as a show is conscious of the racial futuretypes they have created in a postapocalyptic world. The show's writers and producers have refashioned and projected these visions back at us of a future dystopian caste system renewed. The blond, blue-eyed leader, Clarke, the relatively privileged daughter of one of the Ark Council medics, leads The 100 with her other predominantly White coleaders to contain the Grounder threat. She gets some help from a technologically gifted Latina, who has her share of objectified sexual multiracial encounters along the way. A bit of lesbian attraction between Clarke and a leader of the Grounders signals that issues of difference are consciously imagined by the show's writers.

The show simultaneously resonates in several valences of hipness and retrogression. Their choices and casting choices become suspect for continuing past stereotypes into the future. Whereas Clarke is held up as the collective social consciousness of The 100, the Chancellor is a lonesome liberator, seeking an abstract and mythic city of light as the last chance to survive the Ark's inevitable demise. These stereotypes into the future become the normative futuretypes of our immediate present, and we just cannot seem to shake them off despite the racial and sexual experimentation the show supposedly celebrates and portrays. The show is haunted by futuretypes that reify a menacing Other. We are forced to look and reinvent our own stories of space exploration.

The recent television show *Ascension* also promised to look at the dynamics of life aboard a generation starship. Its premise began with the possibility that the Kennedy Administration of the 1960s had launched an interstellar starship propelled by nuclear reactors to carry some top scientists and engineers in a grand pioneering experiment. The show brings us 50 years into its voyage, where the starship culture is laden with the pre–Civil Rights cultural norms before 1963. However, the culture has developed new forms of technology, such as a cruder version of the iPad, and new technologies for terraforming their expected star-system destination.

President Kennedy is still revered by the crew, and the ship's structure is a symbol of that segregated era. The elite flight crew lives on the ship's top floor as if it were a sea cruise, and the lower deckers carry out the essential maintenance tasks of algae farming, growing animals, and engine caretaking. Some mobility is possible, as we discover the ship's captain and his wife ascended from the lower deck to assume their positions while in constant fear of losing power because of their modest origins. We see a lone elite Black security force integrated into upper-deck society, and we become privy to the conflicts within this society, especially among the upper elite where only a selected few are allowed to conceive and have children. The end of the first episode shatters the premise of this starship story as the show reveals that the starship never left Earth at all. Instead, it is an experiment in simulating starship conditions and in facilitating an acceleration of human evolution toward a eugenics program to create paranormal forms of humanity. Again, the promise of generation starships as an innovative form of galactic exploration is not quite fulfilled as we see the crew through the petri-dish perspective of its shepherding puppet masters. The irony of a starship not able to get off the ground is a metaphor for diminishing our imaginations for thinking through what the anthropology of space exploration means.

Just as Afrofuturism has offered, within music, sonic utopias and a reimagining of African and African American and other minority freedom, space exploration through the generation starship provides another trope to augment and reinvent the futuretypes surrounding us, waiting for our voices and stakeholder bids. Instead of reaching for the stars, *The 100* deflates any hope of space as renewal and seeks to reinhabit an alien planet we once called Earth. *Ascension* is more akin to a reality TV show in which the crew simulates liftoff and stays on Earth. Ironically, the generation starship is taken more seriously by real-world projects and governments while it languishes in the creative world of one of our most compelling media, the television screen. This gap is a missed opportunity for futuretyping and scaffolding our imaginations for what could transform us. The film *Interstellar* gets us closer to the genre and leaves us imagining and wanting more glimpses of plausible immersion into long-term space habitats or starship exploration from 2015 to 2100 and other time horizons.

A framework for circulating the generation starship as a conceptual tool into our everyday perspective can provoke long-term thinking in deep time from 100 to 5,000 years. Can we use the science-fiction capital and legacy of the generation starship genre as a required literacy to rescript the limiting stories that surround us? Neal Stephenson and Kim Stanley Robinson both have soon-to-be-published dense stories about deep future starships and grand space habitats: *Aurora,* by Robinson (2015), and *Seveneves,* by Stephenson (2015). A major flaw of their work, fan critics on Amazon have noticed, is the authors' lack of imagination in developing their characters and the social fabric of their space societies at the expense of the science the authors enjoy discussing. Insights from fan reviews provide a hint to how these authors' interstellar journeys might take shape. With respect to *Aurora*, one fan writes:

> A group of hippies, scientists, dreamers, and whiners are on an interstellar voyage to establish a colony. They have no apparent leadership structure, because they are intended, by the author, to be a metaphor for spaceship Earth. No captain. No formal chief engineer, although one angry character takes that role upon herself. (McCormack, 2015, para. 1)

While the fan reviewer bemoans this lack of expected structure, why not revel in a desegregated, decentralized adhocracy? Afrofuturists can expand this genre beyond the limits of Robinson's narrower framing. The ethnographers of technology must take back and Afro-futuretype these and other narratives to celebrate the Black Fantastic (Iton, 2008). Iton points to an alternative future he defines as the Black Fantastic that re-presents current political boundaries as "the minor-key sensibilities generated from the experiences of the underground . . . beyond the boundaries of the modern" (p. 16).

Let us as look to the Black Fantastic to use generation starships as metaphors and real instantiations of designed habitats as simulated exercises, games to reimagine governance and ourselves as more radical versions of what we thought was impossible or just as multicultural politically correct casting. Can we avoid crashing back to Earth as our only default simply because we could not build and conjure up starships of the imagination?

Response by Daniel Sutko

Lonny, I'm interested in exploring the example you present in *Ascension*, especially the idea of ship structure and segregation. Human geographers, urban designers, and architects understand that spatial relations are also social relations. What do spatial relations look like in space, where directional orientation adds a *z*-axis to the *x*- and *y*-axes we are familiar with on Earth. Although we are accustomed to seeing the "cruise ship" orientation you refer to in ship designs, the design of a starship—especially if it follows militaristic command and control structure—will have the most logistically important areas cocooned somewhere in the middle, far away from the dangers of space and hull breaches. The outer decks, being the most vulnerable, will also have the most expendable ship areas (and people?). This example, while brief, indicates that to develop advanced critiques of futuretypes, we should also try to imagine the changing forms of precarity and vulnerability, as they are likely to take on spatial and social (classed, raced, sexed) aspects that we can't even guess at today.

The world of *Star Trek* teaches us that space travel is for elites: people who are genetically and socially gifted and who capitalize on those traits. And there are other narratives where we send only the "best and the brightest" into space—because that's what we do now. But space travel is risky business. Probably the closest we can come to approximating the generation starship is the colonization of the Americas and Australia (the colonial trope in science fiction might be tired out, but we shouldn't forget the mistakes of the past as we strive to craft a better future).

Transportation as punishment brought tens of thousands of people unwillingly to the Americas. Other early settlers were fleeing religious forms of precarity and vulnerability, even as they unfortunately turned around to pay the negative forward to the first people in the Americas. Point being, the last great generation starship was also comprised of precarity and not only monied or connected elites. *The 100*, as disappointing as it is in its lack of a subversive narrative, begins with this idea that the most precarious— juvenile delinquents—are sent to earth as human Geiger counters. Heinlein's (1997) *The Moon Is a Harsh Mistress* likewise suggests that the midreaches of space will be colonized by delinquents. But outside of niche exploratory space travel, I can't see mass colonization on any scale being done by anyone other than the most precarious among us.

In another section, you ask what other types of leadership might be important. I think psychosocial leadership will be very important. NASA already screens for psychosocial compatibility with other team members and with the challenges of space travel (close quarters, extended time away from home, etc.). The current one-and-done screening methods won't suffice on a generation starship of the kind you reference. We'll need mechanisms in place for the continuous maintenance of a ship's collective noosphere.[1] I suspect we will need experts who can develop rituals attuned to maintaining the culture of a generation starship. In the first season of *The Next Generation*, the crew challenges tend to be psychological. About a quarter of the first season's episodes deal with some variation on one or more senior staff breaking with reality. The ship, engineering-wise, runs smoothly unless the crew have to jury-rig it for unintended use or push it beyond its design tolerances. What all this boils down to is that we've tended to bias our imagination of the future toward a transmission rather than ritual perspective on communication. We forget that we'll need those communication rituals as part of the protracted transmission that interstellar travel may inevitably require.

This raises a further question about human speciation and enculturation. On a generation starship, people will inevitably have to interbreed. How will we account for representative genetic diversity at the outset of a generation starship? (And that's to say nothing of ethnic/cultural differentiation!). Right now, there's a large disparity between the countries with money and a space program and countries with the largest populations. The politics alone of asking the global North to pay for a trip that will have more people from the global South would require an astounding and positive revision of power relations. A follow-up question is whether genetic diversity would have to be the driver of a starship's design

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[1] *Noosphere* refers to the sphere of human consciousness and mental activity especially in regard to its influence on the biosphere and in relation to evolution. Retrieved from http://www.merriam-webster.com/dictionary/noosphere

requirements. That is, don't make a box X size and then figure out who goes in. Figure out who goes in and then design an accommodating ship. Maybe our intergalactic arks, like Noah's fabled vessel, will have to be designed with speciation/enculturation in mind. Let's assume for a minute that we've developed an equitable crew list. Imagine how different, genetically and culturally, people on board a ship will be from their ancestors on Earth. We could very well be unrecognizable to each other. I think this is one of the great questions that gets silenced by the black holes Jessa references in her provocation. Thanks for a fantastic provocation.

Response by Aram Sinnreich

Lonny, I love and agree with your observation that, thus far, actual science has outstripped science fiction in our quest to understand the social and logistical implications of a generation starship. Yet perhaps this failure is not merely a localized blind spot on the part of our storytellers but rather a symptom of a broader malaise: our cultural (and psychological?) incapacity to account for the "long now" (Brand, 1999), to view contemporary actions as fleeting elements in the grand narrative of human (or terran) existence, and to account for secondary, tertiary, and further-removed consequences of our actions.

This malaise has not always been with us. The contemporary environmentalist vogue for the "seventh generation" philosophy (perhaps best known by many Americans for its adoption as a brand of sustainably manufactured household cleaning products) is typically attributed to the Great Law of Peace, an oral constitution that provided the basis for the Iroquois Confederacy in the 15th century C.E. Whatever its origins, it is clear that the rhetoric of multigenerational social imagination (that is to say, considering the effects of individual and collective actions beyond the lifespans of immediate family members) was an integral dimension of some pre-Columbian cultures, and helped to inform the social philosophies that accounted for the relatively pristine condition of the Americas during their first 11,000 years of human inhabitation.[2]

It is fascinating that the revitalization of "long now" thinking in the Americas has emerged most forcefully, and has been adopted most broadly, within the scientific community. I would argue that this trend can be traced in large degree to the development of sophisticated mathematical models for social and natural processes, accelerated in the last half-century by Moore's law and the capacity for increasingly detailed and predictive computer simulation. If this is the case, maybe there's an opportunity for hope in this development: hope that the stifling, alienating, atomizing individualism that has characterized global industrial capitalism can be transcended, not by dismantling our industrial apparatus but by upgrading it.

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[2] I don't mean to suggest that pre-Columbian cultures were socially or environmentally perfect, or that the first people on these continents existed in a state of nature or possessed some kind of magical key to coexistence with other species. The pre-Columbian extinction of large American land mammals (most likely due to overhunting) and the well-documented history of bloody warfare between pre-Columbian political states should dispel any such illusions. Yet it also seems abundantly obvious that there was a causal relationship between the rhetoric of long-term thinking and the more careful ecological stewardship that characterized these cultures.

McLuhan (1994) famously suggested that media act as prostheses for our sensorium; if this is indeed the case, we can understand computer simulations as extensions—not of our external senses, such as hearing and taste, but of our internal ones, such as our sense of time and our understanding of cause-and-effect.

To reach a little further, perhaps we are reaching an era in which traditional modes of storytelling, such as the novel and the television series, no longer serve the purpose they once did of goading us into audacious acts of speculation, and asking us to imagine a world bigger than the ones we previously inhabited. If the epic tale served this function under orality, the novel served it under literacy, and the movie served it during the brief but transformative age of mass media, what kind of stories might effectively serve in a networked culture? How can we best communicate the possibilities of a generation starship to ourselves, in a way that will prepare us both logistically and socially for the radical, species-shifting changes that such a project might entail? I don't have a pat answer for this, but the obvious first place to look would be the massively multiplayer video game, an application of our newfound simulative powers to the process of collective storytelling. Thus far, such games have been fairly underwhelming (I say this having spent 2007–08 "grinding" my World of Warcraft character up to a level sufficient to explore, fight and socialize, and soon thereafter having played Will Wright's well-intentioned but dull-as-dishwater *Spore* as long as I could stand it), but then again, so were the earliest efforts at storytelling in other media. Perhaps the *Don Quixote,* the *Battleship Potemkin*, of video games has yet to be launched. And perhaps—just perhaps—its subject will be the generation starship.

Response by Ryan Wallace

> It reminds me of that old joke—you know, a guy walks into a psychiatrist's office and says, "hey doc, my brother's crazy! He thinks he's a chicken." Then the doc says, "why don't you turn him in?" Then the guy says, "I would—but I need the eggs."
>
> Woody Allen, *Annie Hall*

The use of Edward Abbey's explanation of how we are "slaves" is helpful. It points out that individual agency is not unlimited; it is bounded by the politics and constraints of the whole apparatus that makes up broader society. To live in our society carries with it implications: My purchase of a soda contributes to the "agro-industrial empire" (and carries with it the consequences of) supporting GMO corn; my driving a car to work and consuming gasoline reifies a notion of unlimited resources and contributes to humanity's excess consumption and all that comes with it. Generational starships provoke interesting questions; you identify and explore some good ones. For instance, when we set out into the stars on such an endeavor, what will we be enslaving ourselves to? Perhaps the hierarchal structure of the ship, its operations, culture, its physical layout, and accommodations will all have a huge impact on what kind of society emerges—and, in turn, what kind of society is created upon arrival.

I would like to contribute to this exploration by bringing Orson Scott Card's (1985) science fiction world of *Ender's Game* to the fore. *Ender's Game* adds a novel piece of faster-than-light communication technology to popular science fiction vernacular. The *ansible* is a device that gets around a pesky physical barrier—the speed of light. Based on Einstein's notions of relativity, absolutely nothing—and therefore no communication—can travel faster than the speed of light. This situation suggests that communication with

our 100 Year Starship on its interstellar voyage could be fraught with difficulty. Our nearest star system, Alpha Centauri, is 4.367 light years away, meaning communications could take that many years to travel each way. Science fiction has often ignored this problem, but in *Ender's Game* the problem is dealt with directly. In this story, humans have put to use a supposed quantum physics loophole that allows the matter in one lunch-box-sized device to be affected by matter in another lunch-box-sized device—simultaneously—no matter the relative physical proximity of the two boxes; this device is called an *ansible.* It allows instantaneous communication between two points, regardless of the distance between them.

The existence or nonexistence of an *ansible*-like device deployed on future generational starships—and subsequently in extrasolar human colonies—will have an inexorable impact on the development of these interstellar diasporas. That is, will these interstellar generational starships be able to maintain real-time communication with Earth—and to each other?

How communication technology facilitates and allows cultural exchange between generational starships, colonies, and Earth may be a fulcrum that determines the trajectory for all involved. "The medium is the massage. Any understanding of social and cultural change is impossible without a knowledge of the way media work as environments" (McLuhan, 1967, p. 26). The development of these cultures may be "slave" to the "crackpot machine" that connects them with the (preverbal) outside world.

Thomas Freidman's (2005) model in *The World Is Flat* may be applied to ascertain the potential consequences of this driving force. Basically, Freidman argues that recent rapid technological advancement has facilitated a fundamental shift in economic principles, less impacted by tribal regional concerns, and globalization has become the new paradigm for the era. So, will the *ansible* endow our generational starship with the means of real-time cultural exchange? The stakes could determine the future trajectory of Freidman's thesis (is it a J-curve or an S-curve). Is globalization a precursor to "galaxy-alization," "universe-alization," and so on. Or is there a physical and/or technological barrier that provides a limit to this expansion. Could the present wave of globalization—so facilitated by technology—eventually break and roll back into an era of splintered cultures, economies and politics? Would a new tribalism be its successor?

One aspect I find interesting about *The 100* is that the technology is simultaneously painted as solution—while giving rise to the problem. A segment of humanity was saved by the technology in the form of an orbiting Ark; unfortunately, the survivors don't possess the technological ability to maintain it. The problems seem circular: Earth was rendered uninhabitable because of human-caused catastrophe, people couldn't survive there and so left Earth for the Ark, and now the Ark is becoming uninhabitable so people are being sent back to Earth. Like alternating between the proverbial frying pan and fire; the only care that seems to be given is to escape one without any long-term thought as to how it will be better.

As conscious as *The 100* seems of racial categories that have arisen in the postapocalyptic world, we may glean additional insight by reflecting on how the lack of meaningful communication or cultural exchange between the groups amplifies this. After the apocalypse, the splintered remnants of humanity all continued essentially as if they were the real survivors. This fracturing seems to result in the individual

groups operating in the moral vacuum of supporting their own group's survival. There is no consistent cultural, political, or religious social mechanism for them to empathize with the needs—or existence—of the other. Cultural exchange has been the predecessor of many significant shifts in cultural, political, and religious mechanisms in the last century. Positive examples of LGBT people in television and media have contributed to an increased acceptance of them in broader society. Western European and American culture contributed to the fall of the Soviet Union and reconciliation of those peoples with other cultures throughout the world. The shared trauma from a mass shooting at a Black church in North Carolina contributed to a cultural consensus that symbols from a more racist past still [unfortunately] carry power, such as the Confederate battle flag—the symbol of collective focus, and should be relegated to their proper places in history. It may be an unfortunate truism, but it's easier to hate what you don't know. Now that gay marriage is legal and part of our culture, it is a much harder proposition to look at an individual gay couple and deny them that privilege; after you've heard the Beatles, it's harder to hate the West. And after you have seen how a confederate flag inspired an individual to mass murder, it's harder to deny that such symbols don't cause real harm.

It seems to me one that that one of the central premises of *The 100* is how cultures drift apart without interaction. The conflicts in the show, to me, are the death throes of narrowmindedness that have arisen in the postapocalypse. As the Twain adage goes, "Travel is fatal to prejudice, bigotry, and narrow-mindedness. . . . Broad, wholesome, charitable views of men and things cannot be acquired by vegetating in one little corner of the earth all one's lifetime" (Twain, 1996, p. 243). Perhaps this true not just of travel but also of all interaction, and that the positive results of these interactions are inversely proportional to the level of mediation of the contact.

The show *Ascension* uses a really interesting framing device. Because its "ship" left during the 1960s while the show takes place in roughly contemporary times, we can see what has changed and not changed on the ship in the ensuing years. Also, without new technology, we are exposed to what a world that didn't share in the digital revolution of the last decades. What this shows is how a group separated from the rest of society may be denied access to the cultural advancements that occurred on the outside. As this was a model 1960s cross-section of society it so mirrored the racism and bias of the time, becoming an echo chamber of these concepts. We are also left to suppose that if one were to gather a similarly esteemed group of individuals in our present day and age, they would also possess the racism, bias, and other foibles of our present society. Even if the selection were to attempt to check against such biases as part of a screening process, I suspect that through the hindsight of time such a group would eventually be regarded as biased and backward in their thinking—just in a way that reflected their contemporary values at the time of separation.

The *ansible* device would play an even bigger role in the development of ship culture in this show (though it would destroy its dramatic premise). The whole reason for persistence of cultural biases on the ship, which appear so anachronistic, is because there has been no interaction with Earth culture since its (supposed) departure. Add to that the scarcity of resources on the ship, and it's understandable how the pace layers of fashion and commerce (Brand, 1999) are significantly slowed. This seems to be an example of more limited cultural interaction (that of the starship) resulting in more limited change. By contrast, our

own present reality seems to be a counterpoint demonstrating that broader interaction has wrought much more significant change over the same time period.

In the *Ender's Game* universe, there is, obviously, faster-than-light communication with the *ansible* device. But in this representation, there is an additional separating factor—the time dilation experienced by interstellar travel. Time slows down for those on the spaceship as they approach the speed of light relative to those still on Earth, so whatever amount of time elapses for the starship is experienced many times over by everyone else. When the generational starships arrive at their destinations, they bear little resemblance to the Earth culture they left behind; they had developed their own cultures in transit. The colonists were outsiders by virtue of their journey. So despite having the means to communicate, cultural interaction couldn't happen in a meaningful way.

Imagine the pace layers[3] concept and how cultural exchange would be disrupted if the two cultures were experiencing time at different rates relative to each other. As a net result in the *Ender's Game* saga, humanity has over the course of many generations established dozens of colonies on far flung worlds; however, with no feasible commerce, the colonies are largely individual tribes of culture that operate as if the others didn't exist—although loosely organized into an UN like intergalactic alliance called the Starways Congress. These cultures have developed in some interesting (and at time questionable) ways. Essentially the colonies are all hyper versions of the cultures that made up their crews. For examples, the colony Divine Wind was settled by Japanese colonists but (as the book was written by a White, Mormon American) it is presented as an amalgam of many Asian cultural and religious stereotypes. The colony Lusitania, formed by a mixed crew, including Portuguese, where a third alien species is found to exist, has adopted a slang vernacular, amalgamating the colonists' languages into a new one unique to them.

The presence of additional intelligent life on Lusitania is important; all of humanity shares the guilt of the original xenocide of the entire Formic/Bugger species at the end of the first novel, and the presence of a new intelligence, Pequeninos, is humanity's new chance to get it right. The story's conflict emerges when the Starways Congress learns the insectoid race of Formics has been artificially reintroduced to Lusitania, making all three species' continued coexistence uncertain. They dispatch a fleet to eradicate any threat to the indigenous Pequeninos. On a philosophical level, the conflict is about how the species can't decipher or understand one another's intentions and end up killing each other, not out of spite or malintent, but out of ignorance and fear. On a material level, it depicts an unwieldy heterogeneous intergalactic human culture exercising colonial military power to right wrongs caused by past use of colonial military power. Though it all, how communication is mediated plays a central role.

Is it crazy to profit from participation with a culture that is harmful on many levels? If Earth is so bad, wouldn't it be advantageous for a group to up and leave, abandoning future cultural interaction? On

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[3] Pace layers is a concept developed by Stewart Brand (1999), founder of the Long Now Foundation, to examine the rates at which various layers of society move from the rapid adaptation of fashion and commercial layers to the slower rates of change observed in infrastructure, government, culture, and nature. This concept is being applied to educate students about long-term thinking and forecasting.

some levels, of course, it could be, but I think science-fiction narratives provide compelling examples of how separating ourselves from the broader parts humanity doesn't really separate us from our foibles.

We are indeed, in a sense, slaves to our reliance on, and connection to, our material conditions and needs. Changing our relationship to these needs may allow some reprieve but may constrain us in other ways. (In *The 100* they escaped Earth but now need to escape the Ark.) The concept of the generational starship presents a paradox. On the one hand, we may get to escape the prejudices and biases of earthbound existence, but on the other hand, we take along our negative baggage, such as the prejudice and racism we still carry inside us. Communication technology plays a big role in that it is the sieve through which external influences are introduced—and its granularity matters. There is some advantage to avoiding the cultural exchanges that mass communication facilitates, but there are also consequences. Exploring this notion ultimately approaches the question, Is culture more proximal or disparate, and can the de-emphasis of the hegemony lead to change, or simply a new hegemony? At the very least, the question of faster-than-light communication provides an interesting framing mechanism for how alternate futures may arise. An Afrofuturist vision of the future seems all the more likely when a culture (such as on a generational starship) can escape the cultural hegemony perhaps through heavily mediated communication with the outside world. The question is, how will culture profit from the separation of multigenerational voyages?

References

100 Year Starship Project. (2013). Take the next giant leap forward. Retrieved from
        http://www.100yss.org/mission/purpose

Allen, W. (Director). (1977). *Annie Hall* [Motion Picture]. USA: United Artists.

Bishop, J. (2010). *Epitaph for a desert anarchist: The life and legacy of Edward Abbey*. New York, NY.
        Simon and Schuster.

Brand, S. (1999). *The clock of the long now*. New York, NY: Basic Books.

Card, O. S. (1985). *Ender's game*. New York, NY: Tor Books.

Caroti, S. (2011). *The generation starship in science fiction: a critical history, 1934–2001*. Jefferson, NC.
        McFarland.

Ellison, H. (Creator). (1973). *The star ost* [Television series). Los Angeles, CA: 20th Century Fox.

Freidman, T. (2005). *The world is flat*. New York, NY: Farrar, Straus, and Giroux.

Heinlein, R. A. (1997). *The moon is a harsh mistress*. New York, NY: Macmillan.

Iton, R. (2008). *In search of the Black fantastic: Politics and popular culture in the post civil rights Era*. Oxford, UK: Oxford University Press.

McCormack, P. (2015, February 17). *Somebody sent a metaphor to space* [Amazon review of book *Aurora*]. Retrieved from https://www.google.com/search?q=McCormack%2C+P.+%282015 %2C+February+17%29.+Somebody+sent+a+metaphor+to+space&ie=utf-8&oe=utf-8

McLuhan, M. (1994). *Understanding media: The extensions of man*. Cambridge, MA: MIT Press.

McLuhan, M. (1967). *The medium is the message.* New York, NY: Bantam Books.

Robinson, K. S. (2012). *2312: A novel*. London, UK: Orbit.

Robinson, K. S. (2015). *Aurora.* London, UK: Orbit.

Stephenson, N. (2015). *Seveneves*. New York, NY: William Morrow.

Twain, M. (1996). The Innocents Abroad. 1869 (p. 243).. *New York: Oxford UP*.

Warner Brothers, UK. (2013, October, 13).*The 100-Official Trailer.* Retrieved from https://www.youtube.com/watch?v=aDrsItJ_HU4