

The End of Material Scarcity: Dystopia and Immanent Critique of Capitalism

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The end of material scarcity (EMS) futuretype is a representation of a future in which access to material resources fulfills the spectrum of human wants and needs. What is most startling about such worlds of material abundance is their sparse representation in contemporary science fiction TV and film. What we see instead is a plethora of media that depict postapocalyptic worlds of scarcity. The EMS futuretype is itself a scarce conceptual tool in the struggle over access to and management of available material resources today. I suggest that the lack of EMS futuretypes indicates that current conceptual tools in popular discourse are inadequate to undertake an immanent critique of capitalism's promise of infinite abundance.

Promises of "abundance for all" played a key role in the development of consumer culture throughout the industrial revolution. The historian Jackson Lears argues that advertising in the late 19th and early 20th centuries often depicted "fables of abundance" that used agrarian images of plenty to depict industrial capitalism's promise to deliver an untold bounty of goods (Jackson Lears, 1994). Postindustrial capitalism, like industrial capitalism before it, has continually failed to fulfill this promise.

Despite ongoing proclamations by futurologists, techno-utopians, and business pundits that new technologies will fulfill the promise of abundance in the near future, the global wealth gap has reached astounding levels and continues to widen. Citing an Oxfam report, editors at *The Guardian* point out that not only does the richest 1% own more wealth than the other 99%, but the richest 80 individuals own more than the poorest 3 billion (Elliot & Pilkington, 2015). The staggering and growing inequality in accessing finite material resources raises the obvious and very old question: Abundance for whom? *If new technologies actually could fulfill the promise of abundance for all, would the end of material scarcity really bring an end to capitalist accumulation?* Postapocalyptic and dystopian futures have recently become prominent themes in young adult fiction. Books, TV, and films such as *The Hunger Games* (Kilik & Lawrence, 2014; Lionsgate & Ross, 2012), *Divergent* (Fisher & Burger, 2014), *The 100* (Rothberg, 2014), *The Maze Runner* (2013), and *Elysium* (Blomkamp, 2013) offer hyperbolic images of material scarcity while highlighting the hierarchies of domination in class warfare. Such dystopian futuretypes rework well-established, though still productive, critiques of social inequality.

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But, where are the dystopian futures without material scarcity in contemporary sci-fi TV and film? What critical ideas and concepts are we missing because of their absence? Perhaps what is needed in popular discourse is not to rehash the imagery of capitalist social antagonism, but to critique capitalism, immanently, on its own terms, by imagining a world in which the market has fulfilled the promise of abundance and brought about the end of material scarcity. In what follows, I consider the end of material scarcity in cultural terms rather than a material problem of scarce resources, or a technological problem of inefficient production. In doing so, I offer different examples of material abundance represented in the *Star Trek* TV series and films and *Wall-E* (Walt Disney Studios & Stanton, 2008), and raise several questions about the different roles that capitalism and technology play in bringing about the end of material scarcity. Finally, I build from *Star Trek* and *Wall-E* with additional examples from two sci-fi films, *Silent Running* (Hornstein & Trumbull, 1972) and *The Bothersome Man* (Norge & Lien, 2006), to highlight aesthetics—rather than just materials or technologies—as a problem to consider alongside the end of material scarcity.

For sci-fi fans, the most widely recognizable example of the end of material scarcity is almost certainly the replicator technology in *Star Trek: The Next Generation* (Roddenberry, 1987–1994) and the subsequent series *Star Trek: Deep Space Nine* (Piller & Berman, 1993–1999), *Star Trek: Voyager* (Berman, Piller, Taylor, 1995–2001) and films *Generations* (Berman & Carson, 1994), *First Contact* (Berman & Frakes, 1996), *Insurrection* (Berman & Frakes, 1998), *Nemesis* ((Berman & Baird, 2002). The replicator is capable of synthetically producing almost anything at a molecular level by converting energy into matter. In Marxist terms, the replicator is a transformation in the mode of production. It is tempting to imagine that such transformations in the economic base will bring about the end of material scarcity and ignite a cultural revolution that ends capitalist accumulation. However, in *Star Trek: First Contact* (Berman & Frakes, 1996) audiences learn that the first multicultural encounter with alien life—not simply technological changes—shifted human values away from individualistic systems of private accumulation toward collective betterment. While trying to convince Zefram Cochrane, the would-be warp drive inventor, of his historical importance to humanity's future, Counselor Troy explains that "it unites humanity in a way never thought possible when they realize they are not alone in the universe" (Berman & Frakes, 1996).

"Cornucopian economists," such as Milton Friedman, argue that technological solutions that make the use of resources cheaper and more efficient will eventually bring about an end to material scarcity. Techno-utopianist tracts such as Ray Kurzweil's *The Singularity Is Near* (2005), Peter Diamandis's *Abundance: The Future Is Better Than You Think* (2012), and Matt Ridley's *The Rational Optimist* (2010) urge patience to those dissatisfied by the current distribution of material resources and claim that new technologies will solve the problem within a generation . . . or so. In their accounts, exactly how these "game-changing" technologies will disrupt global wealth disparities that structure access to material resources is left up to history to sort out. As Slack and Wise (2015) remind us, technology and culture are always mutually constitutive. For them, technology does not unilaterally act upon culture from the outside. Instead, they write, "culture has always been technological and technologies have always been cultural" (Slack & Wise, 2015, p. 9). In the utopian future of *Star Trek's* 24th-century Earth, each individual works in accordance with his or her own talents and commits themselves to self-improvement, cooperation and

the betterment of all life, and these changes in cultural values precede replicator technologies by several hundred years [see Figure 1).



Figure 1. [Malfunctioning replicator, Star Trek Voyager.](#)

[Ctrl+click title for video clip.]

Critics of contemporary global capitalism and advocates of ecological sustainability should be energized by the idea that cultural, political, or economic change can bring about the end of material scarcity with currently existing technologies. In fact, sociologist and economist Juliet Schor advocates a compelling plan to bring about the end of material scarcity in *Plenitude* (2012) and through her work with the Center for a New American Dream.

In *Star Trek: Deep Space Nine* (Piller & Berman, 1993–1999) the patriarchal capitalist species known as the Ferengi get an extended treatment as main characters. The Ferengi value profit above all else, and their cultural practices are driven by the “rules of acquisition” (an aphoristic handbook to capitalism). The Ferengi draw attention to that fact in the *Star Trek* universe—it is not just technology that will bring about the end of material scarcity. The replicator technology could have brought the end of

material scarcity to the Ferengi, but it neither abolished the use of currency nor shifted values away from an individualistic profit-driven culture. In the Ferengi's patriarchal capitalist culture, replicator technology only contributed to individual profit making.

During a story arc in *Star Trek: Deep Space Nine* (Roddenberry & Brooks, 1999; Roddenberry & Siddig, 1998) the Grand Negus (more or less the CEO/Dictator of the Ferengi people) falls in love with Ishka, the mother of Quark, one of the main characters. Ishka is a radical feminist who shatters Ferengi tradition (and law!) by not only wearing clothes but also by financially advising the Grand Negus. The story arc culminates with the rise of massive social unrest after word spreads about the Grand Negus's secret, clothed, female advisor. Audiences are left with the suggestion that the rise of feminism will ultimately transition the Ferengi civilization away from their patriarchal capitalist culture. The story arc raises the question about technocultures and the EMS futuretype. *What other cultural transformations beyond multiculturalism or collective values can contribute to ending material scarcity with current technologies?*

If *Star Trek* represents a culture that moves past capitalism to bring about the end of material scarcity, the Disney/Pixar animated film *Wall-E* (Walt Disney Studios & Stanton, 2008) represents the end of material scarcity as a consumer-culture fantasy. In *Wall-E*, a group of humans from the early 22nd century escape an Earth that has been ecological decimated and poisoned by garbage. The human survivors escaped on an all-inclusive luxury spaceship that, while meant to be a temporary lifeboat, became home to humanity for the next 700 years. A fully automated system of robots manages the spaceship and caters to the wants and needs of every human. Over the subsequent generations, humans become engorged, entirely dependent on robots, and barely able to walk on their own. The movie's critique of rampant consumerism and resource management is comically, and poignantly, demonstrated in a scene about fashion. After it is announced that "blue" is the new "red," everyone changes their jumpsuits and accessories from blue to red amidst a wave of approving nods and sounds from the people floating in their hover chairs. In this scene neither money nor resources are a consideration for the fulfillment of consumer desire.

Thanks to a robot love story, the movie concludes with humanity rediscovering its place, not among the stars, as in *Star Trek*, but in the life-bearing soil of Earth. In representing the end of material scarcity exclusively from the perspective of consumer culture, *Wall-E* offers an immanent critique of consumer-driven capitalism that is depressing at best and nightmarish at worst.

However, despite the technological and value considerations of material abundance, *Star Trek* and *Wall-E* also raise aesthetic questions. Even among replicated materials in the *Star Trek* universe, some people still prefer the "real thing." In *Star Trek: The Next Generation*, Captain Picard's family tends a vineyard (Roddenberry & Landau, 1990), and in *Star Trek: Deep Space Nine*, Captain Sisko's father runs a creole restaurant in New Orleans and refuses to cook with replicated ingredients (Roddenberry & Livingston, 1996). The preference for the real thing indicates that natural ingredients and human labor produce an aesthetic value. In *Wall-E*, commodities such as "pizza-in-a-cup" and mono-colored jumpsuits, offer a comical critique of mass consumer culture aesthetics. While the residents of *Wall-E*'s all-inclusive luxury spaceship seem to enjoy the hedonistic consumer culture in which they live, other films equate

consumer abundance with a dull existence. The film *Silent Running* (Hornstein & Trumbull, 1972) bemoans how fulfilling capitalism's promise of abundance for all produced a grey, bland world devoid of anything natural. This environmental activist film follows a lone "tree hugger" who, with the help of robots, tends the last remnants of Earth's once lush forests in a space station orbiting Earth. The protagonist's critique of Earth's abundance is aesthetic. He makes no complaint that mass consumer culture has provided for everyone, only that there is no beauty in it. Similarly, the 2006 Norwegian film *The Bothered Man* (Norge & Lien, 2006) portrays aesthetics as a source of existential angst in a world without scarcity. In it, the protagonist arrives in a mysterious gray city in which material scarcity does not exist. Unfortunately, there is no beauty, excitement, or joy, either. The angst from living in a dull world of abundance drives the bothersome man to commit suicide, only to find himself unable to die and thus deprived of his one, true existential freedom.

The film culminates with the protagonist discovering a crack in a wall through which he can hear music and smell fresh fruit pies. His attempt to break through the wall is thwarted by anonymous authorities, and he is deposited alone amidst a desolate snowstorm as punishment. Taken collectively, such emphasis on the aesthetics of material abundance raises an important question left out of technologically driven narratives of material abundance: *What becomes of aesthetics in a world without material scarcity?*

In this discussion I have posed several questions to consider regarding the end of material scarcity. *What other cultural transformations beyond multiculturalism or collective values can contribute to ending material scarcity with current technologies?* For example, in *Plenitude* (2012), Juliet Schor suggests the rethinking of how we value time is crucial to changing social and economic practices regarding our ecological resources. Another question I asked was: *What becomes of aesthetics in a world without material scarcity?* To phrase it more concretely, how might preferences for luxury goods and luxury aesthetics—often contingent on rare materials—be reconfigured if those materials are no longer rare (i.e., disrupting the artificial scarcity of diamonds)? Finally, I posed the questions: *Where are the dystopian futures without material scarcity in contemporary sci-fi TV and film, and what critical ideas and concepts are missing from popular discourse because of their absence?* For example, *Wall-E* highlights the slothfulness of consumerism run amuck because robots perform all labor. But what about the more immediate concerns regarding corporate power, robotic labor and capitalism's promise of abundance for all—such as Google self-driving vehicles, or Dyson's fully automated factory—in which the material resources made abundant through robotics and automation are only accessible to a privileged elite?

Response by Roseann Pluretti

Science fiction can be used to imagine futures that overcome the shortcomings of the present. However, Adam notes that many science fiction television shows and films depict the shortcomings of capitalism and capital antagonism that are similar to the present state of capitalism in our society. Current science fiction narratives should illustrate a society in which capitalism actually lives up to its promises of an abundance of resources for all. These imagined futures depicting an abundance of materials, instead of a scarcity of materials, may lead us to reflect on current capitalistic processes and could lead to a revision to the current shortcomings.

Adam notes the importance of cultural beliefs affecting both technological and capitalistic innovations that can be seen in both science fiction and reality. As Slack and Wise (2015) assert that, technology and culture are mutually constitutive. In other words, shifts in culture will also shift advancements in technology, which then could help or hinder the scarcity of materials. In science fiction, *Star Trek* illustrated how collective cultural perceptions led to advancement in technology for equitable means. In answering one of the questions posed by Adam, I believe shifts in cultural values toward a more accepting and collective society could contribute to ending material scarcity.

In addition to collective and multicultural values, I believe feminism and deconstructing racism and the Other would also contribute to ending material scarcity. I believe these values can overcome material scarcity because they focus on diminishing the lines that currently divide society and deconstruct the uneven power differences that are evident not only economically but socially as well. The concept of the Other illustrates the divides created in our society that can relate to the gaping divide between the rich and the poor and those who do and do not have access to materials in our society. Byerly (2007) asserts that the "Other" is any group of people that have been marginalized, samed, and made inferior by those in power in the hegemonic patriarchal society. These Others include women, the gendered Other, the LGBTQ community, the sexualized or gay Other, and racial and ethnic minorities, known as the racial Other. These Others are seen as deviations from the norm and those in power, who are perceived to be White heterosexual men. Those in power Other and marginalize these Othered groups to maintain power over them.

Feminist, civil rights, and gay rights movements seek to overcome this Other marginalization to prove to those in power that these are groups of people who deserve to be heard and treated as equal citizens instead of inferior citizens. Deconstructing the Other through feminist and civil-right values builds not only a more collective society but more collective economies and technologies as well. Technologies would be developed to maintain and further the collective society and not just aid those in power. The economy would allot resources not just to those in power but to the collective whole that would now be accepted instead of denounced. Finally, by allowing more voices to be heard, we allow an entire once-marginalized population to use their ideas and talents to better our society and economy instead of once silencing them. Science fiction should include these values among other collective values to illustrate a future collective society that would help lead to an abundance rather than a scarcity of resources.

Finally, in regard to the last question posed by Adam, because of the absence of abundant material futures in science fiction, important issues are not being discussed in current public discourse. This includes the question of if our profit- and power-driven society can truly allow access to materials by all and not just for the powerful few. Like the Ferengi in *Star Trek: Deep Space Nine*, we have a strong desire for profit and, in addition to this, power. Because of this, we develop technologies that not only increase the abundance of materials but also increase profit and power. However, this profit, power, and abundance of resources is only allowed for the wealthy and powerful few. Also, our individualistic culture fuels this drive for power and profit for only the few that can attain it, although the stakes are not even among different groups in society. Therefore, by increasing the presence of futures without material

scarcity, we may increase our self-reflection on how our profit, power, and individualistically driven society may be driving us toward a material scarcity rather than a seemingly material abundant economy.

Response by Daniel Sutko

Adam, I'll hazard a guess about why material scarcity is overrepresented in sci-fi, especially given the promises of capitalism. It might be that projecting the future as filled with material scarcity is a way of continually deferring the possibility that we could, with today's technologies—right now—overcome material scarcity in significant ways. Projecting the future as bereft of basic needs is a way of saying that capitalism has yet to fulfill its promise. We're encouraged in the present to stay the course and support structures of immiseration because materially abundant heaven is out of sight for us and also our future selves. What's interesting about the films you mention is that they actually reframe the structural conditions of suffering into individuals that are "bad" and "immoral" versus "good" and "redeemer."

This "individual" trope works at two levels in the movies. With the bad guys, we get the sense that the people in the Capital (*The Hunger Games*) or in Elysium (*Elysium*) are jerks but little perspective on how their class position was predetermined and their subjectivity as oppressors is just as much formed by the structural conditions that afford them privilege and others immiseration. (Not that I'm sympathetic for people who take pills to throw up only so they can consume more.) On the other hand, with the good guys, we get the idea that nothing will change until a leader is born who will lead the miserable out of oppression. Get my drift? The stories ignore that movements need an autopoietic sense of justice, resistance, and transformation from within; a recognition of the other of the Other, together. The motto in most of these movies is that you just have to wait for the right redeemer figure to come around because there's no point in looking around you for help or identification, which is exactly where we should be looking. In conclusion to half of my commentary, we're dropped in these stories *in media res*, without any deep understanding of how these places came to be, without a history of their future, to riff on James Carey and John Quirk (1973). As such, these are less critiques of social inequality than entertainment, where social inequality functions as the setting or MacGuffin¹ to get the story going.

In response to another part of your provocation, maybe the Ferengi are interesting because they answer the question of what would happen to capitalism in the face of EMS. The Ferengi remind me of how China's relationship to capitalism rebuffs the Nixonian fantasy that capitalism breeds democracy. If China teaches us that capitalism doesn't need liberal democracy, maybe the Ferengi teach us that it doesn't need material scarcity either, and isn't that a scary thought. Maybe I shouldn't split im/material hairs here, but the point is that Ferengi use capitalism as a cultural/status game. No Ferengi physically lives or dies by capitalism, as multitudes do today; it's a social death. In this regard, Ferengi highlight the *cultural* aspects of how wealth functions socially to stratify people. In that sense the Ferengi story works

¹ In fiction, a MacGuffin (sometimes McGuffin or maguffin) is a plot device in the form of some goal, desired object, or other motivator that the protagonist pursues, often with little or no narrative explanation. The specific nature of a MacGuffin is typically unimportant to the overall plot.

as a great counterpoint—as you bring up—to the also important *social* transformation that was key to Earthlings' evolution in *Star Trek*. This cultural component of capitalism is also what's at work in the blue/red scene from *Wall-E* you mention.

Based on the above rereading of Ferengi, I've got a different take on Ishka. For me, the story of Ishka is interesting in supporting the flexibility of capitalism to adapt to new circumstances. There's no doubt that Ishka revolutionizes gender roles in Ferengi society, but she does so by being a better capitalist than the Grand Negus himself. My gloomy reading of Ishka's story is that she must adapt to capitalism and that capitalism is presented as the answer to gender inequality. (The ol' yarn about the best inevitably rising to the top). In this whole equation—Ishka, Ferengi society, and capitalism—capitalism is the only thing that remains the same. Sure, she makes the Grand Negus care about more than profit, but it seems that's just a kinder, gentler sort of capitalism, which is perhaps why the lovable buffoon Rom becomes the new Grand Negus instead of the perpetually dissembling Quark. Capitalism tolerates all kinds of foolishness.

This gets to your question about cultural transformations and collective values. The Ferengi teach us that scarcity is not *only* material (in the sense of food, clothes, medicine). Scarcity and inequity exist in social/cultural configurations as well. In that regard, their story exposes the end of material scarcity in all of its complex dualisms: it should be a goal but it can also be a red herring. By that I mean to return to your earlier observation that the changes on Earth are social before they're technological in the *Star Trek* universe. Maybe the end of scarcity lies in those cultural transformations you refer to, rather than technological invention. Even our current material scarcity is sociocultural.

We have the technology to at least end food scarcity on a global scale. Yet this doesn't happen because, like the question of the Grexit,² these aren't merely economic questions of balance sheets but geopolitical and cultural questions of how exchange and distribution work. And this returns us to the question of the structural production of inequality.

When we discuss the "end of material scarcity," it's really important to be mindful of the cultural perspective with which you frame the provocation. One way EMS gets represented is that EMS equals uniformity or homogeneity. I don't want to say "equality," but there's an idea that achieving EMS means we all have access to the same abundance. The two films you mention both take this perspective: that EMS brings a bleak world because we all have the same stuff. This raises the important critical-cultural question of how to live with difference and encourage difference rather than erase difference. And this question of difference is a productive way to reframe Benjamin's (1968) aesthetic question that you ask with regard to material scarcity. Benjamin asked what happens to *aura* in an age of mechanical reproduction. You ask what happens to *aesthetics* in an age of material abundance. I would like to ask what happens to *difference* in an age of material abundance. I see the drab worlds in *Silent Running* and *The Bothersome Man* as devoid of difference. In contrast, Picard and Sisko's gastric hobbies are pursuits of difference and serendipity. Picard tends a vineyard: Every vintage is distinct. There's that unexpected line of flight—extra sun that turns a vintage great one year or early frost that ruins the crop. Likewise, for

² *Grexit* refers to the potential Greek withdrawal from the Eurozone in 2015.

Sisko, cooking fresh means cooking with difference each time. Fresh ingredients are never identical, so chefs must adjust for ripeness, size, and so on to get the same tasty result. So if the question for Benjamin in the early 1900s was a question of aura, I think a question for our present and our future might be one about serendipity amidst algorithmic efficiency.

To bring Sisko, Picard, and the Ferengi together in conclusion, I think that EMS could also be rather sinister and not necessarily result in the end of stratification. Maybe only people with the freshest gold-pressed latinum (fictional currency or denominations of currency used in fiction) will be able to reproduce original Elim Garak³ outfits and everyone else gets Generic Name. Picard and Sisko are both captains, and we're lead to believe that Starfleet is a high-prestige position, so there's an amount of privilege accorded to each of these individuals. We too rarely see a picture of everyday life on Earth in *Star Trek*. We know that not everyone is roaming the stars as part of Starfleet, so what's everyone else doing? They can't all be cranky but likeable, judgmental yet accepting, salt-of-the-Earthers like Picard's brother back on the vineyard. If we know that the material base is taken care of via EMS, what other forms of labor and culture support Starfleet's superstructure? With few exceptions, most of the family units we see in the show travel together, but what about the families that are separated from others on Earth, Mars, or wherever? These are questions that get elided by the EMS futuretype. Thanks for giving me something real to chew on.

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³ From the Star Trek series *Deep Space Nine*; Elim Garak was a Cardassian tailor and Promenade shopkeeper of Garak's Clothiers who lived on station Deep Space 9.

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