

Four Futures

One thing we can be certain of is that capitalism will end.

By Peter Frase

available online at <https://www.jacobinmag.com/2011/12/four-futures/>

In his speech to the Occupy Wall Street encampment at Zuccotti Park, Slavoj Žižek lamented that “It’s easy to imagine the end of the world, but we cannot imagine the end of capitalism.” It’s a paraphrase of a remark that Fredric Jameson made some years ago, when the hegemony of neoliberalism still appeared absolute. Yet the very existence of Occupy Wall Street suggests that the end of capitalism has become a bit easier to imagine of late. At first, this imagining took a mostly grim and dystopian form: at the height of the financial crisis, with the global economy seemingly in full collapse, the end of capitalism looked like it might be the beginning of a period of anarchic violence and misery. And still it might, with the Eurozone teetering on the edge of collapse as I write. But more recently, the spread of global protest from Cairo to Madrid to Madison to Wall Street has given the Left some reason to timidly raise its hopes for a better future after capitalism.

One thing we can be certain of is that capitalism *will* end. Maybe not soon, but probably before too long; humanity has never before managed to craft an eternal social system, after all, and capitalism is a notably more precarious and volatile order than most of those that preceded it. The question, then, is what will come next. Rosa Luxemburg, reacting to the beginnings of World War I, cited a line from Engels: “Bourgeois society stands at the crossroads, either transition to socialism or regression into barbarism.” In that spirit I offer a thought experiment, an attempt to make sense of our possible futures. These are a few of the socialisms we may reach if a resurgent Left is successful, and the barbarisms we may be consigned to if we fail.

Much of the literature on post-capitalist economies is preoccupied with the problem of managing labor in the absence of capitalist bosses. However, I will begin by assuming that problem away, in order to better illuminate other aspects of the issue. This can be done simply by extrapolating capitalism’s tendency toward ever-increasing automation, which makes production ever-more efficient while simultaneously challenging the system’s ability to create jobs, and therefore to sustain demand for what is produced. This theme has been resurgent of late in bourgeois thought: in September 2011, *Slate*’s Farhad Manjoo wrote a long series on “The Robot Invasion,” and shortly thereafter two MIT economists published *Race Against the Machine*, an e-book in which they argued that automation was rapidly overtaking many of the areas that until recently served as the capitalist economy’s

biggest motors of job creation. From fully automatic car factories to computers that can diagnose medical conditions, robotization is overtaking not only manufacturing, but much of the service sector as well.

Taken to its logical extreme, this dynamic brings us to the point where the economy does not require human labor at all. This does not automatically bring about the end of work or of wage labor, as has been falsely predicted over and over in response to new technological developments. But it does mean that human societies will increasingly face the *possibility* of freeing people from involuntary labor. Whether we take that opportunity, and how we do so, will depend on two major factors, one material and one social. The first question is resource scarcity: the ability to find cheap sources of energy, to extract or recycle raw materials, and generally to depend on the Earth's capacity to provide a high material standard of living to all. A society that has both labor-replacing technology and abundant resources can overcome scarcity in a thoroughgoing way that a society with only the first element cannot. The second question is political: what kind of society will we be? One in which all people are treated as free and equal beings, with an equal right to share in society's wealth? Or a hierarchical order in which an elite dominates and controls the masses and their access to social resources?

There are therefore four logical combinations of the two oppositions, resource abundance vs. scarcity and egalitarianism vs. hierarchy. To put things in somewhat vulgar-Marxist terms, the first axis dictates the economic base of the post-capitalist future, while the second pertains to the socio-political superstructure. Two possible futures are socialisms (only one of which I will actually call by that name) while the other two are contrasting flavors of barbarism.

Egalitarianism and Abundance: Communism

There is a famous passage in the third volume of *Capital*, in which Marx distinguishes between a “realm of necessity” and a “realm of freedom.” In the realm of necessity we must “wrestle with Nature to satisfy [our] wants, to maintain and reproduce life”, by means of physical labor in production. This realm of necessity, Marx says, exists “in all social formations and under all possible modes of production”, presumably including socialism. What distinguishes socialism, then, is that production is rationally planned and democratically organized, rather than operating at the whim of the capitalist or the market. For Marx, however, this level of society was not the true objective of the revolution, but merely a precondition for “that development of human energy which is an end in itself, the true realm of freedom, which, however, can blossom forth only with this realm of necessity as its basis.”

Elsewhere, Marx suggests that one day we may be able to free ourselves from the realm of necessity altogether. In the “Critique of the Gotha Program,” he imagines that: In a higher phase of communist society, after the enslaving subordination of the individual to the division of labor, and therewith also the antithesis between mental and physical labor, has vanished; after labor has become not only a means of life but life’s prime want; after the productive forces have also increased with the all-around development of the individual, and all the springs of co-operative wealth flow more abundantly — only then then can the narrow horizon of bourgeois right be crossed in its entirety and society inscribe on its banners: From each according to his ability, to each according to his needs!

Marx’s critics have often turned this passage against him, portraying it as a hopelessly improbable utopia. What possible society could be so productive that humans are entirely liberated from having to perform some kind of involuntary and unfulfilling labor? Yet the promise of widespread automation is that it could enact just such a liberation, or at least approach it—if, that is, we find a way to deal with the need to generate power and secure resources. But recent technological developments have taken place not just in the production of commodities, but in the generation of the energy needed to operate the automatic factories and 3-D printers of the future. Hence one possible post-scarcity future combines labor-saving technology with an alternative to the current energy regime, which is ultimately limited by both the physical scarcity and ecological destructiveness of fossil fuels. This is far from guaranteed, but there are hopeful indicators. The cost of producing and operating solar panels, for example, has been falling dramatically over the past decade; on the current path they would be cheaper than our current electricity sources by 2020. If cheap energy and automation are combined with methods of efficiently fabricating or recycling raw materials, then we have truly left behind ‘the economy’ as a social mechanism for managing scarcity. What lies over that horizon?

It’s not that all work would cease, in the sense that we would all just sit around in dissipation and torpor. For as Marx puts it, “labor has become not only a means of life but life’s prime want.” Whatever activities and projects we undertook, we would participate in them because we found them inherently fulfilling, not because we needed a wage or owed our monthly hours to the cooperative. This is hardly so implausible, considering the degree to which decisions about work are already driven by non-material considerations, among those who are privileged enough to have the option: millions of people choose to go to graduate school, or become social workers, or start small organic farms, even when far more lucrative careers are open to them.

The demise of wage labor may seem like a faraway dream today. But once upon a time — before the labor movement retreated from the demand for shorter hours, and before the stagnation and reversal of the long trend toward reduced work weeks — people actually worried about what we would do after being liberated from work. In an essay on

“Economic possibilities for our grandchildren”, John Maynard Keynes predicted that within a few generations, “man will be faced with his real, his permanent problem — how to use his freedom from pressing economic cares, how to occupy the leisure, which science and compound interest will have won for him, to live wisely and agreeably and well.” And in a recently published discussion from 1956, Max Horkheimer begins by casually remarking to Theodor Adorno that “nowadays we have enough by way of productive forces; it is obvious that we could supply the entire world with goods and could then attempt to abolish work as a necessity for human beings.”

And Keynes and Adorno lived in a world where industry only appeared possible at a very large scale, whether in capitalist factories or state run enterprises; that form of industry implies hierarchy no matter what social formation it is embedded in. But recent technological advances suggest the possibility of returning to a less centralized structure, without drastically lowering material standards of living: the proliferation of 3-D printers and small scale ‘fabrication laboratories’ is making it increasingly possible to reduce the scale of at least some manufacturing without completely sacrificing productivity. Thus, insofar as some human labor is still required in production in our imagined communist future, it could take the form of small collectives rather than capitalist or state run firms. But getting past wage labor economically also means getting past it *socially*, and this entails deep changes in our priorities and our way of life. If we want to imagine a world where work is no longer a necessity, it’s probably more fruitful to draw on fiction than theory. Indeed, many people are already familiar with the utopia of a post-scarcity communism, because it has been represented in one of our most familiar works of popular culture: *Star Trek*. The economy and society of that show is premised on two basic technical elements. One is the technology of the ‘replicator’, which is capable of materializing any object out of thin air, with only the press of a button. The other is a fuzzily described source of apparently free (or nearly free) energy, which runs the replicators as well as everything else on the show.

The communistic quality of the *Star Trek* universe is often obscured because the films and TV shows are centered on the military hierarchy of Starfleet, which explores the galaxy and comes into conflict with alien races. But even this seems to be largely a voluntarily chosen hierarchy, drawing those who seek a life of adventure and exploration; to the extent that we see glimpses of civilian life, it seems mostly untroubled by hierarchy or compulsion. And to the extent that the show departs from communist utopia, it is because its writers introduce the external threat of hostile alien races or scarce resources in order to produce sufficient dramatic tension.

It is not necessary to conjure starships and aliens in order to imagine the tribulations of a communist future, however. Cory Doctorow’s novel *Down and Out in the Magic Kingdom* imagines a post-scarcity world that is set in a recognizable extrapolation of the present day United States. Just as in *Star Trek*, material scarcity has been superseded in this world. But Doctorow grasps that within human societies, certain immaterial goods will

always be inherently scarce: reputation, respect, esteem among one's peers. Thus the book revolves around various characters' attempts to accumulate "whuffie," which are a kind of virtual brownie points that represent the goodwill you have accumulated from others. Whuffie, in turn, is used to determine who holds authority in any voluntary collective enterprise — such as, in the novel, running Disneyland.

The value of Doctorow's book, in contrast to *Star Trek*, is that it treats a post-scarcity world as one with its own hierarchies and conflicts, rather than one in which all live in perfect harmony and politics comes to a halt. Reputation, like capital, can be accumulated in an unequal and self-perpetuating way, as those who are already popular gain the ability to do things that get them more attention and make them more popular. Such dynamics are readily observable today, as blogs and other social media produce popular gatekeepers who are able to determine who gets attention and who does not, in a way that is not completely a function of who has money to spend. Organizing society according to who has the most 'likes' on Facebook has certain drawbacks, to say the least, even when dislodged from its capitalist integument.

But if it is not a vision of a perfect society, this version of communism is at least a world in which conflict is no longer based on the opposition between wage workers and capitalists, or on struggles over scarce resources. It is a world in which not everything ultimately comes down to money. A communist society would surely have hierarchies of status — as have all human societies, and as does capitalism. But in capitalism, all status hierarchies tend to be aligned, albeit imperfectly, with one master status hierarchy: the accumulation of capital and money. The ideal of a post-scarcity society is that various kinds of esteem are independent, so that the esteem in which one is held as a musician is independent of the regard one achieves as a political activist, and one can't use one kind of status to buy another. In a sense, then, it is a misnomer to refer to this as an 'egalitarian' configuration, since it is not a world of no hierarchies but one of *many* hierarchies, no one of which is superior to all the others.

Hierarchy and Abundance: Rentism

Given the technical premises of complete automation and free energy, the *Star Trek* utopia of pure communism becomes a possibility, but hardly an inevitability. The bourgeois elite of the present day does not merely enjoy privileged access to scarce material goods, after all; they also enjoy exalted status and social power over the working masses, which should not be discounted as a source of capitalist motivation. Nobody can actually spend a billion dollars on themselves, after all, and yet there are hedge fund managers who make that much in a single year and then come back for more. For such

people, money is a source of power over others, a status marker, and a way of keeping score — not really so different from Doctorow’s whuffie, except that it is a form of status that depends on the material deprivation of others. It is therefore to be expected that even if labor were to become superfluous in production, the ruling classes would endeavor to preserve a system based on money, profit, and class power.

The embryonic form of class power in a post-scarcity economy can be found in our systems of intellectual property law. While contemporary defenders of intellectual property like to speak of it as though it is broadly analogous to other kinds of property, it is actually based on a quite different principle. As the economists Michele Boldrin and David K. Levine observe, IP rights go beyond the traditional conception of property. They do not merely ensure “your right to control your copy of your idea”, in the way that they protect my right to control my shoes or my house. Rather, they give rights-holders the ability to tell others how to use copies of an idea that they ‘own’. As Boldrin and Levine say, “This is not a right ordinarily or automatically granted to the owners of other types of property. If I produce a cup of coffee, I have the right to choose whether or not to sell it to you or drink it myself. But my property right is not an automatic right both to sell you the cup of coffee and to tell you how to drink it.”

The mutation of the property form, from real to intellectual, catalyzes the transformation of society into something which is not recognizable as *capitalism*, but is nevertheless just as unequal. Capitalism, at its root, isn’t defined by the presence of capitalists, but by the existence of *capital*, which in turn is inseparable from the process of commodity production by means of wage labor, M-C-M’. When wage labor disappears, the ruling class can continue to accumulate money only if they retain the ability to appropriate a stream of rents, which arise from their control of intellectual property. Thus emerges a *rentist*, rather than capitalist society.

Suppose, for example, that all production is by means of *Star Trek*’s replicator. In order to make money from selling replicated items, people must somehow be prevented from just making whatever they want for free, and this is the function of intellectual property. A replicator is only available from a company that licenses you the right to use one, since anyone who tried to give you a replicator or make one with their own replicator would be violating the terms of their license. What’s more, every time you make something with the replicator, you must pay a licensing fee to whoever owns the rights to that particular thing. In this world, if *Star Trek*’s Captain Jean-Luc Picard wanted to replicate his beloved “tea, Earl Grey, hot”, he would have to pay the company that has copyrighted the replicator pattern for hot Earl Grey tea.

This solves the problem of how to maintain for-profit enterprise, at least on the surface. Anyone who tries to supply their needs from their replicator without paying the copyright cartels would become an outlaw, like today’s online file sharers. Despite its absurdity, this arrangement would likely have advocates among some contemporary critics

of the Internet's sharing culture; Jaron Lanier's *You Are Not a Gadget*, for instance, explicitly calls for the imposition of "artificial scarcity" on digital content in order to restore its value. The consequences of such arguments are already apparent in the record industry's lawsuits against hapless mp3 downloaders, and in the continual intensification of the surveillance state under the guise of combating piracy. The extension of this regime to the micro-fabrication of physical objects will only make the problem worse. Once again, science fiction is enlightening, in this case the work of Charles Stross. *Accelerando* shows us a future in which copyright infringers are pursued by hitmen, while *Halting State* depicts furtive back alley "fabbers" running their 3-D printers one step ahead of the law.

But an economy based on artificial scarcity is not only irrational, it is also dysfunctional. If everyone is constantly being forced to pay out money in licensing fees, then they need some way of earning money, and this generates a new problem. The fundamental dilemma of rentism is the problem of effective demand: that is, how to ensure that people are able to earn enough money to be able to pay the licensing fees on which private profit depends. Of course, this isn't so different from the problem that confronted industrial capitalism, but it becomes more severe as human labor is increasingly squeezed out of the system, and human beings become superfluous as elements of production, even as they remain necessary as consumers. So what kind of jobs would still exist in this economy?

Some people would still be needed to dream up new things to be replicated, and so there will remain a place for a small "creative class" of designers and artists. And as their creations accumulate, the number of things that can be replicated will soon vastly outstrip the available time and money to enjoy them. The biggest threat to any given company's profits will not be the cost of labor or raw materials — both minimal or nonexistent — but rather the prospect that the licenses they own will lose out in popularity to those of competitors. Marketing and advertising, then, will continue to employ significant numbers. Alongside the marketers, there will also be an army of lawyers, as today's litigation over patent and copyright infringement swells to encompass every aspect of economic activity. And finally, as in any hierarchical society, there must be an apparatus of repression to keep the poor and powerless from taking a share back from the rich and powerful. Enforcing draconian intellectual property law will require large battalions of what Samuel Bowles and Arjun Jayadev call "guard labor": "The efforts of the monitors, guards, and military personnel . . . directed not toward production, but toward the enforcement of claims arising from exchanges and the pursuit or prevention of unilateral transfers of property ownership."

Nevertheless, maintaining full employment in a rentist economy will be a constant struggle. It is unlikely that the four areas just described can fully replace all the jobs lost to automation. What's more, these jobs are themselves subject to labor-saving innovations. Marketing can be done with data mining and algorithms; much of the routine business of lawyering can be replaced with software; guard labor can be performed by surveillance drones rather than human police. Even some of the work of product invention could one day

be given to computers that possess some rudimentary artificial creative intelligence. And if automation fails, the rentist elite can colonize our leisure time in order to extract free labor. Facebook already relies on its users to create content for free, and the recent fad for “gamification” suggests that corporations are very interested in finding ways to turn the work of their employees into activities that people will find pleasurable, and will thus do for free on their own time. The computer scientist Luis von Ahn, for example, has specialized in developing ‘games with a purpose’, applications that present themselves to end users as enjoyable diversions while also performing a useful computational task. One of von Ahn’s games asked users to identify objects in photos, and the data was then fed back into a database that was used for searching images. This line of research evokes the world of Orson Scott Card’s novel *Ender’s Game*, in which children remotely fight an interstellar war through what they think are video games.

All of this means that the society of rentism would probably be subject to a persistent trend toward under-employment, which the ruling class would have to find some way to counter in order to hold the system together. This entails realizing a vision that the late André Gorz had of post-industrial society: “the distribution of means of payment must correspond to the volume of wealth socially produced and not to the volume of work performed.” This might involve taxing the profits of profitable firms and redistributing the money back to consumers — possibly as a no-strings-attached guaranteed income, and possibly in return for performing some kind of meaningless make-work. But even if redistribution is desirable from the standpoint of the class as a whole, a collective action problem arises; any individual company or rich person will be tempted to free-ride on the payments of others, and will therefore resist efforts to impose a redistributive tax. The government could also simply print money to give to the working class, but the resulting inflation would just be an indirect form of redistribution and would also be resisted. Finally, there is the option of funding consumption through consumer indebtedness — but readers in the early twenty-first century presumably do not need to be reminded of the limitations inherent in that solution.

Given all these troubles, one might ask why the rentier class would bother trying to extract profits from people, since they could just replicate whatever they want anyway. What keeps society from simply dissolving into the communist scenario from the previous section? It might be that nobody would hold enough licenses to provide for *all* of their needs, so everyone needs revenue to pay their own licensing costs. You might own the replicator pattern for an apple, but just being able to make apples isn’t enough to survive. In this reading, the rentier class are just those who own enough licenses to cover all of their own license fees.

Or perhaps, as noted at the outset, the ruling class would guard their privileged position in order to protect the power over others granted to those at the top of a class-divided society. This suggests another solution to rentism’s underemployment problem: hiring people to perform personal services might become a status marker, even if

automation makes it strictly speaking unnecessary. The much-heralded rise of the service economy would evolve into a futuristic version of nineteenth century England or parts of India today, where the elite can afford to hire huge numbers of servants.

But this society can persist only so long as most people accept the legitimacy of its governing hierarchy. Perhaps the power of ideology would be strong enough to induce people to accept the state of affairs described here. Or perhaps people would start to ask why the wealth of knowledge and culture was being enclosed within restrictive laws, when, to use a recently popular slogan, “another world is possible” beyond the regime of artificial scarcity.

Egalitarianism and Scarcity: Socialism

We have seen that the combination of automated production and bounteous resources gives us either the pure utopia of communism or the absurdist dystopia of rentism; but what if energy and resources remain scarce? In that case, we arrive in a world characterized simultaneously by abundance and scarcity, in which the liberation of production occurs alongside an intensified planning and management of the inputs to that production. The need to control labor still disappears, but the need to manage scarcity remains.

Scarcity in the physical inputs to production must be understood to encompass far more than particular commodities like oil or iron ore — capitalism’s malign effect on the environment threatens to do permanent damage to the climates and ecosystems on which much of our present economy depends. Climate change has already begun to play havoc with the world’s food system, and future generations may look back on the variety of foodstuffs available today as an unsustainable golden age. (Earlier generations of science fiction writers sometimes imagined that we would one day choose to consume all our nutrition in the form of a flavorless pill; we may yet do so by necessity.) And under the more severe projections, many areas that are now densely populated may become uninhabitable, imposing severe relocation and reconstruction costs on our descendants.

Our third future, then, is one in which nobody needs to perform labor, and yet people are not free to consume as much as they like. Some kind of government is required, and pure communism is excluded as a possibility; what we get instead is a version of socialism, and some form of economic planning. In contrast to the plans of the twentieth century, however, those of the resource-constrained future are mostly concerned with managing *consumption*, rather than production. That is, we still assume the replicator; the task is to manage the inputs that feed it.

This might seem less than promising. Consumption, after all, was precisely the area in which Soviet-style planning was found to be most deficient. A society that can arm itself for war with the Nazis, but is then subject to endless shortages and bread lines, is hardly an inspiring template. But the real lesson of the USSR and its imitators is that planning's time had not yet come — and when it did begin to come, the bureaucratic sclerosis and political shortcomings of the Communist system proved unable to accommodate it. In the 1950s and 1960s, Soviet economists tried heroically to reconstruct their economy into a more workable form — one of the leading figures in this effort was the Nobel prize-winner Leonid Kantorovich, whose story is told in fictional form in Francis Spufford's recent book *Red Plenty*. The effort ran aground not because planning was impossible in principle, but because it was technically and politically impossible in the USSR of that time. Technically, because sufficient computing power was not yet available, and politically because the Soviet bureaucratic elite was unwilling to part with the power and privilege granted to them under the existing system.

But the efforts of Kantorovich, and of contemporary theorists of planning such as Paul Cockshott and Allin Cottrell, suggest that some form of efficient and democratic planning is possible. And it will be necessary in a world of scarce resources: while private capitalist production has been very successful at incentivizing labor-saving technological innovation, it has proven to be terrible at conserving the environment or rationing scarce resources. Even in a post-capitalist, post-work world, some kind of coordination is needed to ensure that individuals do not treat the Earth in a way that is, in the aggregate, unsustainable. What is needed, as Michael Löwy has said, is some kind of “global democratic planning” rooted in pluralistic, democratic debate rather than rule by bureaucrats.

A distinction should be made, however, between democratic planning and a completely non-market economy. A socialist economy could employ rational planning while still featuring market exchange of some sort, along with money and prices. This, in fact, was one of Kantorovich's insights; rather than do away with price signals, he wanted to make prices into mechanisms for making planned production targets into economic realities. Current attempts to put a price on carbon emissions through cap-and-trade schemes point in this direction: while they use the market as a coordinating mechanism, they are also a form of planning, since the key step is the non-market decision about what level of carbon emissions is acceptable. This approach could look quite different than it does today, if generalized and implemented without capitalist property relations and wealth inequalities.

Suppose that everyone received a wage, not as a return to labor but as a human right. The wage would not buy the products of others' labor, but rather the right to use up a certain quantity of energy and resources as one went about using the replicators. Markets might develop insofar as people chose to trade one type of consumption permit for another, but this would be what the sociologist Erik Olin Wright calls “capitalism between consenting

adults”, rather than the involuntary participation in wage labor driven by the threat of starvation.

Given the need to determine and target stable levels of consumption — and thus set prices — the state can’t quite wither away, as it does under the communist scenario. And where there is scarcity, there will surely be political conflict, even if this is no longer a *class* conflict. Conflicts between locales, between generations, between those who are more concerned with the long-term health of the environment and those who prefer more material consumption in the short run — none of these will be easy to solve. But we will at least have arrived on the other side of capitalism as a democratic society, and more or less in one piece.

Hierarchy and Scarcity: Exterminism

But if we do not arrive as equals, and environmental limits continue to press against us, we come to the fourth and most disturbing of our possible futures. In a way, it resembles the communism that we began with — but it is a communism for the few. A paradoxical truth about that global elite we have learned to call the “one percent” is that, while they are defined by their control of a huge swathe of the world’s monetary wealth, they are at the same time the fragment of humanity whose daily lives are *least* dominated by money. As Charles Stross has written, the very richest inhabit an existence in which most worldly goods are, in effect, free. That is, their wealth is so great relative to the cost of food, housing, travel, and other amenities that they rarely have to consider the cost of anything. Whatever they want, they can have.

Which is to say that for the very rich, the world is already something like the communism described earlier. The difference, of course, is that their post-scarcity condition is made possible not just by machines but by the labor of the global working class. But an optimistic view of future developments — the future I have described as communism — is that we will eventually come to a state in which we are all, in some sense, the one percent. As William Gibson famously remarked, “the future is already here; it’s just unevenly distributed.”

But what if resources and energy are simply too scarce to allow everyone to enjoy the material standard of living of today’s rich? What if we arrive in a future that no longer requires the mass proletariat’s labor in production, but is unable to provide everyone with an arbitrarily high standard of consumption? If we arrive in that world as an egalitarian society, then the answer is the socialist regime of shared conservation described in the previous section. But if, instead, we remain a society polarized between a privileged elite and a downtrodden mass, then the most plausible trajectory leads to something much

darker; I will call it by the term that E. P. Thompson used to describe a different dystopia, during the peak of the cold war: *exterminism*.

The great danger posed by the automation of production, in the context of a world of hierarchy and scarce resources, is that it makes the great mass of people superfluous from the standpoint of the ruling elite. This is in contrast to capitalism, where the antagonism between capital and labor was characterized by both a clash of interests and a relationship of mutual dependence: the workers depend on capitalists as long as they don't control the means of production themselves, while the capitalists need workers to run their factories and shops. It is as the lyrics of "Solidarity Forever" had it: "They have taken untold millions that they never toiled to earn/But without our brain and muscle not a single wheel can turn." With the rise of the robots, the second line ceases to hold.

The existence of an impoverished, economically superfluous rabble poses a great danger to the ruling class, which will naturally fear imminent expropriation; confronted with this threat, several courses of action present themselves. The masses can be bought off with some degree of redistribution of resources, as the rich share out their wealth in the form of social welfare programs, at least if resource constraints aren't too binding. But in addition to potentially reintroducing scarcity into the lives of the rich, this solution is liable to lead to an ever-rising tide of demands on the part of the masses, thus raising the specter of expropriation once again. This is essentially what happened at the high tide of the welfare state, when bosses began to fear that both profits and control over the workplace were slipping out of their hands.

If buying off the angry mob isn't a sustainable strategy, another option is simply to run away and hide from them. This is the trajectory of what the sociologist Bryan Turner calls "enclave society", an order in which "governments and other agencies seek to regulate spaces and, where necessary, to immobilize flows of people, goods and services" by means of "enclosure, bureaucratic barriers, legal exclusions and registrations." Gated communities, private islands, ghettos, prisons, terrorism paranoia, biological quarantines; together, these amount to an inverted global gulag, where the rich live in tiny islands of wealth strewn around an ocean of misery. In *Tropic of Chaos*, Christian Parenti makes the case that we are already constructing this new order, as climate change brings about what he calls the "catastrophic convergence" of ecological disruption, economic inequality, and state failure. The legacy of colonialism and neoliberalism is that the rich countries, along with the elites of the poorer ones, have facilitated a disintegration into anarchic violence, as various tribal and political factions fight over the diminishing bounty of damaged ecosystems. Faced with this bleak reality, many of the rich — which, in global terms, includes many workers in the rich countries as well — have resigned themselves to barricading themselves into their fortresses, to be protected by unmanned drones and private military contractors. Guard labor, which we encountered in the rentist society, reappears in an even more malevolent form, as a lucky few are employed as enforcers and protectors for the rich.

But this too, is an unstable equilibrium, for the same basic reason that buying off the

masses is. So long as the immiserated hordes exist, there is the danger that it may one day become impossible to hold them at bay. Once mass labor has been rendered superfluous, a final solution lurks: the genocidal war of the rich against the poor. Many have called the recent Justin Timberlake vehicle, *In Time*, [a Marxist film](#), but it is more precisely a parable of the road to exterminism. In the movie, a tiny ruling class literally lives forever in their gated enclaves due to genetic technology, while everyone else is programmed to die at 25 unless they can beg, borrow or steal more time. The only thing saving the workers is that the rich still have some need for their labor; when that need expires, so presumably will the working class itself.

Hence exterminism, as a description of this type of society. Such a genocidal telos may seem like an outlandish, comic book villain level of barbarism; perhaps it is unreasonable to think that a world scarred by the holocausts of the twentieth century could again sink to such depravity. Then again, the United States is already a country where a serious candidate for the Presidency revels in executing the innocent, while the sitting Commander in Chief casually orders the assassination of American citizens without even the pretense of due process, to widespread liberal applause.

These four visions are abstracted ideal types, Platonic essences of a society. They leave out many of the messy details of history, and they ignore the reality that scarcity-abundance and equality-hierarchy are not simple dichotomies but rather scales with many possible in-between points. But my inspiration, in drawing these simplified portraits, was the model of a purely capitalist society that Marx pursued in *Capital*: an ideal which can never be perfectly reflected in the complex assemblages of real economic history, but which illuminates unique and foundational elements of a particular social order. The socialisms and barbarisms described here should be thought of as roads humanity might travel down, even if they are destinations we will never reach. With some knowledge of what lies at the end of each road, perhaps we will be better able to avoid setting off in the wrong direction.