THE LEGACY OF THE RUSSIAN REVOLUTION

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We can think of history as a collection of interesting stories about the past. Or (in a more ancient historiographical mode) as a collection of exemplars, stories about the past that can illuminate the present. This essay is written in the second of these modes. It will argue that the very wide-angle lens of big history can help us see the deeper significance of the Russian Revolution in new ways.[1]

The Russian Revolution has a lot to teach us. It is topical because the second of 1917's two revolutions, the October Revolution, happened almost exactly 100 years ago, on November 7. We call it the October Revolution because, according to the Julian calendar in force in Russia at the time, it took place on 25 October, but according to the Gregorian calendar used in Europe it took place on 7 November. (The new Bolshevik government introduced the Gregorian calendar in Russia on 1 February 1918. This worried many people because it meant that the day after 1 February was 15 February, and some worried that their lives would have shortened by two weeks.)

How can the Russian Revolution illuminate today's world? Why, today, should we care about what happened in Russia 100 years ago? That is the central theme of this talk, and I hope I can offer some interesting, and perhaps illuminating, answers at several different historical scales. By doing that, I hope I can illustrate how the very wide-angle lens of big history can broaden our understanding of more conventional historical questions and topics.

Introduction: Seeing the Russian Revolution at multiple scales:

I have taught Russian and Soviet history for most of my career as an academic. I think I got interested in Russian society and its history because, growing up as a child in England, Russia seemed so different in so many ways. During the Cold War, Russia was the dark side, and I felt I could understand my own world only if I could understand that other, very different world.

Recently, a friend who served in the British navy told me a wonderful story that captures the sense of that other world as both different and familiar. It's like those wonderful stories about football truces on the western front during World War I. My friend, William, served on a British aircraft carrier that spent a lot of time shadowing and being shadowed by Soviet nuclear submarines in the early 1960s. He remembers a Christmas Day when, without any explanation, his ship slowed down and a Soviet submarine they were shadowing surfaced a hundred yards away. A line was thrown over to the aircraft carrier from its conning tower, and when the line was secured, a bottle of vodka was hooked on to the line and sent skimming over the water to the British ship. The bottle was unhitched, and replaced with a bottle of rum that was sent over to the Soviet submarine. The bottle of rum was removed, the line was untied, and the submarine submerged. Nothing was said on either side and none of it was explained to the crew, though of course they needed no explanations. What I love about the story is the way it captures the underlying commonality of humanity despite the dangerous conflicts in which the crews of both ships were involved.

That fascination with the idea of a common humanity may explain why, over time, I became more and more interested in the idea of a history of humanity. Thinking about the history of humanity meant looking at the past on scales of tens of thousands, or even hundreds of thousands of years, scales much wider than those you need to study Russian history or English history or Australian history. This was what H G Wells tried to do after World War I in his *Outline of History*. In the Preface to that book, he explained why he thought the project of a

history of humanity was so important:

> There can be no peace now, we realize, but a common peace in all the world; no prosperity but a general prosperity. But there can be no common peace and prosperity without common historical ideas … With nothing but narrow, selfish, and conflicting nationalist traditions, races and peoples are bound to drift towards conflict and destruction.[2]

In other words, if historians keep focusing mainly on national histories, they are encouraging future wars. Instead, he argued, we need to teach a history of humanity that can encourage global cooperation by helping students see what they share with all humans, rather than forcing them to focus on the national histories that divide humans into conflicting tribes.

But H G Wells also realised that you could not write a history of humanity without explaining how our species appeared, and that meant going beyond the bounds of the history discipline and entering the realm of biology. And to explain the evolution of humans adequately, you would have to tell the story of evolution in general. In fact, you would have to tell the history of the biosphere over 4 billion years, and to do that properly you would have to set the history of planet earth within the much vaster history of the Universe. In this way, a history of humanity turned into a history of the universe, which is what H G Wells attempted in his *Outline of History*.

After many years of teaching Russian and Soviet history, I, too, became convinced that we needed to teach the history of humanity, and I, too, realised that we would have to teach the history of humanity as part of the history of the biosphere and even the universe as a whole. To many, this logic seemed foolish and naive. If it is difficult to tell the history of a single nation, how much more difficult it must be to tell the history of humanity, let alone the histories of the biosphere or the whole universe. But curiously, as Wells realised, some problems can be seen more clearly at large scales, as you stand back from the details and begin to see larger objects, such as … the history of humanity. From the vertiginous perspectives of the whole of time (the view from the mountaintop), some problems that are fuzzy when studied close up, can begin to clarify. Einstein, for example, found that the nature of gravity could be understood better if you considered the entire universe.

These arguments led me to the idea of big history: the idea that it can be illuminating and even clarifying to adopt the widest possible lens when studying the past. So, what I'll try to demonstrate in this essay is that, in thinking about the Russian Revolution, it helps to see it within the very wide context of big history, as an event, or series of events, that can tell us interesting things about human history as a whole, even about the history of the biosphere.

So, I will look at the legacy of the Russian Revolution from three distinct scales. The first is the familiar scale of modern or world history. The second is the scale of human history as a whole, a scale that reaches over at least 200,000 years. The third is the scale of the biosphere, whose history takes us back at least 4 billion years. I will try to persuade you that the Russian Revolution raises important and interesting questions at all these scales.

The Central Issue raised by the Russian Revolution: Can inequality be abolished?

The Russian Revolution was the most ambitious and determined attempt in modern times to abolish inequality in human societies. So, the central problem raised by the Russian Revolution is that of equality and inequality in human society. Is it possible to abolish the profound inequalities of power, wealth, gender, race and many other kinds, that have dominated so much of human history?

The history of the modern world began, according to conventional wisdom, with a series of revolutions that overthrew particular forms of inequality and unfreedom. This is the story told in R R Palmer's *The Age of the Democratic Revolution,* a work that influenced me greatly as an undergraduate student.[3] 'Liberty' and 'Equality' were the slogans of the new era because Liberty was unthinkable as long as extreme forms of inequality, such as slavery or colonial rule, continued to exist. The American colonies overthrew the tyranny of British colonial rule.

The French Revolution overthrew the twin tyrannies of autocracy and serfdom, creating a society in which men (not yet women) were legally equal. Slavery was abolished in much of the world in the 19th century. During the 19th century, the idea that all people should enjoy equal legal and political rights became widely established in principle, if less often in practice. In the late 19th and early 20th century, beginning in New Zealand and Australia, the electoral rights secured by a widening circle of men in the 19th century were extended also to women.

The 19th-century socialists, whose ideas would drive the Russian Revolution, argued that these political and legal freedoms were superficial. Real freedom could never exist as long as deep inequalities in wealth divided humans into distinct classes. Legal and political equality meant little in 'capitalist' societies, in which individuals enjoyed the right to privately appropriate resources, such as the land that could, in principle, have been enjoyed collectively by all members of society. For socialists, the right to accumulate private property – the right to exclude others from the use and enjoyment of portions of society's wealth – was the ultimate form of inequality. The institution of private property allowed a small minority to control a growing proportion of society's wealth, while increasing numbers of people were impoverished. Wealth, in turn, generated new forms of power, such as the power embedded within the wage contract, under which the well-being of the wage-earner depended on the whims of the employer. In the view of many socialists, wage labour was the modern, capitalist, form of slavery, because it depended on profound inequalities in the distribution of wealth, which generated in their turn profound inequalities in life chances and real power. The goal of socialism was to overthrow class inequality, which was, they argued, the deepest, foundational form of all other inequalities and unfreedoms. Only with the overthrow of private property in resources, and the creation of societies in which all citizens had equal access to the wealth of society, would true freedom finally be established.

The most interesting forms of socialism, including Marxism, understood that it was not quite enough to argue for socialism on moral grounds alone. That argument had to be based on a rigorous understanding of the nature of human societies, and the roots of inequality. In the *Communist Manifesto* (written in 1848), we read that:

> The history of all hitherto existing society is the history of class struggles. Freeman and slave, patrician and plebeian, lord and serf, guild-master and journeyman, in a word, oppressor and oppressed, stood in constant opposition to one another, carried on an uninterrupted, now hidden, now open fight, a fight that each time ended, either in a revolutionary reconstitution of society at large, or in the common ruin of the contending classes.[4]

Marx regarded his own analysis of inequality as 'scientific', in so far as it was based not merely on Utopian hopes for the future, but on careful, rigorous analysis of the workings of existing societies. Hope alone was not enough to justify the sacrifices of a revolutionary movement. (This was his main criticism of what he called 'Utopian Socialism'.) To overthrow inequality, he argued, it was vital to understand what drove inequality and above all to analyse rigorously and scientifically the specific forms that inequality took in the modern, capitalist world. His analysis of capitalism was intended to do just this, to show scientifically how capitalist inequality worked, and how it might be overthrown. And that is why Marx spent most of his career analysing not socialism but capitalism. Engels said at Marx's graveside, in 1883, that: 'just as Darwin discovered the law of development of organic nature, so Marx discovered the law of development of human history'.

Marx's analysis showed that, for all its strengths, capitalism also had serious and potentially fatal weak points.

The three volumes of *Capital* are very clear about capitalism's strengths. Capitalism generated innovations and new forms of wealth better than any previously existing form of society. The idea is already present in the *Communist Manifesto*:

> The bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together. Subjection of Nature's forces to man, machinery, application of chemistry to industry and agriculture, steam-navigation, railways, electric telegraphs, clearing of whole continents for cultivation, canalisation of rivers, whole populations conjured out of the ground – what

earlier century had even a presentiment that such productive forces slumbered in the lap of social labour?[5]

Raising productivity meant increasing wealth. It meant growth. And that meant that capitalism was laying the foundations for a better society, in which all could enjoy high living standards.

On the other hand, the driving mechanisms of capitalism *depended* on inequality. Capitalism worked because some people, the class of capitalists, were allowed to accumulate property in their hands and profit from that wealth by forcing those who lacked wealth (the 'proletariat', those who had to work because they lacked wealth of their own) to work for them on advantageous terms. The wage contract was the source of both the wealth of the capitalist class and the impoverishment of the proletarian (or wage-earner) class. So, capitalism meant a world of steadily increasing inequality. The more wealth capitalism generated, the more unequally that wealth would be distributed and the greater the number of the dispossessed. There, in Marx's analysis, lay capitalism's weak spot. Eventually, inequality would reach such extremes that a tiny class of wealthy capitalists would face off against a vast impoverished proletariat that included most of society. And then, something would snap.

On the basis of this analysis, rigorously developed in the three volumes of *Capital*, Marx argued that the hope of a more equal world, a world in which resources were enjoyed communally, a 'communist' world, was not Utopian. It was realistic, and even inevitable given the way that capitalism was evolving. In the proletarian class, capitalism was producing its own 'gravediggers'. Eventually, the tensions created by increasing inequality would shatter the capitalist system. Then it would be possible to build a better, freer, and more human world, in which the colossal wealth generated by capitalism was re-distributed between all citizens. This was the goal of Marxist socialism as described in the *Communist Manifesto*: 'In place of the old bourgeois society, with its classes and class antagonisms, we shall have an association, in which the free development of each is the condition for the free development of all.'[6] The goal was freedom and equality, in a society in which all members of society shared equally in society's resources. The goal was to create a 'communal' or 'communist' society.

The legacy of the Russian Revolution is supremely important even today, because the Russian Revolution represents the most determined attempt to implement this egalitarian program, to create a human society in which all shared more or less equally in society's resources.

In retrospect, few would disagree with the claim that the attempt failed. Today, inequality is taking increasingly extreme and grotesque forms throughout the world. According to Walter Scheidel (whose book, *The Great Leveler,* I will return to), 'in 2015, the richest 62 persons on the planet owned as much private net wealth as the poorer half of humanity, over three-and-half billion people.'[7] A 2017 Oxfam report, based on data from Credit Suisse, argued that the richest 1% of people now owned 50% of the world's wealth, or as much as the remaining 99% of the world's population.[8] In Russia, where the revolution to overthrow inequality took place 100 years ago, modern Gini coefficients (general measures of inequality) are over 40, as high as in the United States and other modern capitalist societies.

Clearly, if we are to understand why inequality persists today, we need to understand why the Russian attempt to abolish inequality failed. I will analyse that failure at three different scales: 1) on the scales of Russian and modern-world history; 2) on the scale of human history (about 200,000 years); and finally, 3) on the scale of the biosphere as a whole (a scale of 4 billion years). I will argue that each scale may have important things to teach us about the problem of inequality in human history.

The Failure of the Russian Revolution: Scale 1, Conventional World Historical Explanations

Given modern traditions of scholarly specialisation, most attempts to explain the failure of the Russian revolution see the experiment in the context of Russian and modern-world history.

If we assume that, whatever their faults, most leaders of the Russian Revolution took the Marxist project seriously, then we have to seek structural explanations for their failure to build a genuinely egalitarian society. Today, most historians would begin their attempts to explain that failure with the fact that the revolution took place in Russia. Marx expected a mature capitalism to generate the productivity and wealth that would make a wealthy socialist society possible, and he expected capitalism to break down in a country with a vast, impoverished proletariat. In fact, though, capitalism broke down not in one of the most advanced capitalist countries, such as the USA or Germany, but in one of the least developed capitalist countries, the Russian Empire, a society with relatively low levels of productivity, a vast peasantry and a tiny proletariat. In the early 20th century, Russian society lacked both of Marx's crucial preconditions for building socialism: high levels of productivity and wealth, and a large proletarian class.

It is not quite enough to describe the Russian Empire as 'backward'. An increasing body of scholarship, best represented, perhaps, in the work of Paul Gregory, argues that early in the 20th century the Russian Empire was evolving rapidly as a capitalist economy.[9] It was a flourishing, but still immature, capitalist society, and many of the strains it experienced were not the products of a mature capitalism but those generated by the task of *building* capitalism. They were caused by rapid growth rather than by stagnation or backwardness. Russia was still a peasant society, but traditional peasant ways-of-life were being undermined rapidly, and many peasants were being forced to take up wage labour. Meanwhile, Russia's small proletarian class suffered conditions typical of early capitalism, the sort of conditions described by Friedrich Engels or Charles Dickens in early 19th-century Britain. Even elite groups were changing rapidly, and many felt the ground slipping away from under them. There was plenty of class tension, though it was not quite the type of tension that Marx expected.

Those tensions might have been manageable if it were not for a second factor: the Russian political system was highly autocratic, which meant that *handling* these tensions and pressures was left largely to a tiny elite, dominated by the autocratic tsar Nicholas II. If Nicholas had had the political skills and determination of a Peter the Great, a Lenin or a Stalin, autocratic government might have proved an advantage because decisions could be taken and implemented swiftly. Unfortunately, Nicholas had little interest in or understanding of politics, or of the specific tensions faced by Russian society. And unlike his father, Alexander III, he was so protective of his own powers as Tsar that he also refused to listen to those who *did* understand these problems. In an autocracy, the personality of the ruler can make all the difference, and, as the Russian Empire faced the many tensions and conflicts of a flourishing but immature capitalism, it did so with a leader who lacked the ability to understand the problems or implement appropriate solutions.

In retrospect, the political challenge that Nicholas faced is clear. Russia's centuries-long traditions of autocratic rule depended above all on maintaining unity and discipline within elite groups: Russia's nobles, generals, merchants, and high officials.[10] But in a rapidly modernising world these groups were changing rapidly, conflicting interests and attitudes were emerging, and many within Russia's elite were beginning to demand some say in the work of government. By the early 20th century, and particularly after the 1905 revolution, those demands focused on the idea of a constitutional government, and they were shared by most members of Russia's educated elite. Whether radicals or conservatives, increasing numbers of nobles, officials, entrepreneurs and even generals were becoming liberals. They were not necessarily democrats, but the 'Fundamental Laws' granted after the 1905 revolution, had created an elected parliamentary assembly, the Duma, and that provided a vehicle for elite participation in government. By working closely with the Duma leaders, Nicholas could have united elite groups around the monarch, and improved the handling of government business, even during World War I. But he refused to do so, and that explains why the Russian government faced the colossal challenges of World War I with a divided, splintered elite. By 1915, after two years of war, a majority of Duma members united around the demand for a 'Government of Public Confidence', by which they meant a cabinet that included representatives of the major parties in the Duma. Appointing Duma leaders to ministerial positions

would surely have improved the professionalisation and skill with which the government managed the huge challenge of World War I, and it would have bound elite groups to a modified autocracy. And there is plenty of evidence that most Russians in elite positions would have supported a stronger and more united government, because they understood all too well that the alternative was probably a total governmental breakdown.

But Nicholas was so jealous of his autocratic powers that he refused to appoint ministers from the Duma majority. And this explains why eventually, and with extreme reluctance, Duma politicians, officials and even generals would abandon the autocracy in February 1917. When revolution broke out in the capital, Petrograd, the army high command, far from sending troops to suppress it, advised Nicholas to abdicate, with the support of most leading politicians. That was the clearest sign of how alienated Nicholas II was from the elite groups that were the foundation for his power.

If this interpretation is correct, it suggests there was nothing inevitable about the Russian Revolution. The February revolution might have been avoided despite the huge challenges the government faced, if there had been a leader capable of holding together a coalition of Russia's elite classes. We know that most elite politicians, economists, entrepreneurs and even generals, wanted such a coalition. The result would have been the emergence of an autocratic political system with a consolidated elite and a largely decorative constitution. Similar elites had survived crises many times before in Russia's history and this time, too, they would surely have proved capable of riding out the tensions they faced as a result of rapid capitalist development and a modern industrial war.

But the February revolution split the government, and the entire political system now sheered apart from top to bottom. In the resulting chaos, new opportunities appeared for extremist parties such as the Bolsheviks, whose chances of overthrowing the government seemed non-existent early in 1917. Just weeks before the Tsar's abdication, Lenin, in exile in Zurich, had said publicly that he did not expect revolutionaries of his generation to see the revolution.

Briefly, the collapse of autocracy seemed to create a genuinely democratic government that would defend the interests of all classes. But most experienced politicians understood that class divisions went so deep that such an outcome was impossible. What policies could possibly unite landlords keen to protect their estates and peasants determined to abolish those rights; or generals keen to continue the war and soldiers desperate for an armistice? The Russian historian Florinsky, who had fought in the war, later wrote:

> The conflict between the attitude of the masses and that of the educated classes … was fundamental, insoluble, fatal … There was no room for compromise between the two points of view, and the conflict had to be fought out to its bitter end.[11]

This meant that the collapse of government left only two possible outcomes, both of which would inevitably revive Russia's highly centralised traditions of governance. The first was a restored government of Russia's traditional elite groups, perhaps under the Tsar or under a powerful military figure of some kind. That outcome would have required the emergence of a new leader capable of doing what Nicholas II failed to do: consolidate Russia's elites around a new political platform. Conservative leaders did emerge during the Civil War, but by then it was too late. The second alternative, which few expected apart from Lenin and a few close allies, was a socialist government committed to the overthrow of capitalism and claiming to represent Russia's workers, peasants and soldiers.

Leadership skills counted for a lot in 1917, which was the political equivalent of a rodeo, and Lenin and some of his lieutenants had the necessary skills in abundance. As traditional power structures crumbled, the Bolsheviks managed to form alliances and produce political programs that gained the support of large numbers of soldiers and workers, particularly in the major towns, the keys to power. In the anarchic environment of late 1917, those alliances, combined with ruthless and decisive leadership, proved adequate to overthrow a desperately weak

Provisional government and to hold on to power during a brutal three-year civil war.

By the early 1920s, the former Russian Empire was ruled by a socialist government committed to building socialism and overthrowing capitalism. But after seven years of war and civil war, that government ruled a society whose proletariat was even smaller than in 1917 (because so many workers had returned to the villages), and whose productive capacity was also smaller (because of the breakdown of industry, trade and agriculture during the civil war). Russia's new Communist government faced the challenge of trying to build a future socialist society under the worst possible conditions.

Under Stalin, the new government succeeded in reducing economic inequality by creating a highly centralised planned economy that eliminated private property and markets while building a powerful industrial economy capable of exploiting the huge energies locked up in fossil fuels. But the new government used traditional autocratic methods, and that meant creating new forms of inequality, political, legal and even economic. A new ruling class emerged, the *nomenklatura,* whose members did not own private property, but collectively administered the resources of the largest country in the world. That guaranteed that they would be wealthier and more privileged than most members of Soviet society. And the new elite ruled using methods as centralised and brutal as Tsarism at its most autocratic, with the addition of modern technologies and weaponry. By the late 1930s, millions were interned in the vast labour camps of the Gulag, where they worked as slave labourers. This was not what most socialists had hoped for from a Communist revolution.

The failures went even deeper because even many of the system's achievements were matched by a resurgent and renovated world capitalism. Certainly, some forms of inequality had decreased in the Soviet Union and Soviet rhetoric bragged about the remarkable equality of its workers and of women in Soviet society. But as Thomas Piketty has shown, inequalities also declined in mature capitalist societies in the early 20th century. The decline was caused mainly by the destructiveness of the world wars, which wiped out traditional forms of aristocratic wealth: above all, wealth based on land ownership.[12] Furthermore, once it recovered from the 1929 crash, a booming capitalism began to create new forms of wealth that could be redistributed to less-wealthy sectors of the population, as capitalists in the mould of Henry Ford realised that paying better wages brought a double bonus. First, wage earners with spare cash in their pockets would create new markets for the products of capitalist industry, including products such as automobiles. Second, a more prosperous wage-earning class was unlikely to favour revolution. These were developments that Marx had not foreseen and they ensured that, rather than increasing in the 20th century, the class tensions of mature capitalist societies seemed to decline. The consumer capitalism of the mid-20th century began to co-opt its proletariat more or less effortlessly, as sustained growth created new forms of wealth that could be redistributed advantageously to society as a whole. Innovation, growth and new forms of consumerism were easing the class tensions that Marx had seen as capitalism's fatal weakness.

The final failure of the Soviet experiment was that it proved incapable of matching capitalist rates of growth for sustained periods, and in ways that could alleviate the considerable tensions emerging within Soviet society. Living standards remained very low until the 1950s. Then, under Khrushchev, they began to rise rapidly. But in the 1970s, growth rates slowed once more until, by the 1980s, Soviet rulers presided over a society that was probably more alienated than the societies of the mature capitalist world. The primary reason for this failure was the lack of incentives for innovation within the Soviet planned economy. Instead of seeking profits, the primary goal of Soviet enterprise managers was to meet planned output targets, and innovation almost always meant temporary disruption of output. This is why most enterprise managers feared innovation 'as the devil shies away from incense', as Brezhnev once put it. In short, the absence of private property and the profit motive limited innovation, a result that could have been predicted from Marx's analysis of the main drivers of innovation under capitalism. By the 1970s, most Soviet economists already understood that raising productivity would require introducing some equivalent of the profit motive. As Mikhail Gorbachev put it in 1987: 'A house can be put in

order only by a person who feels that he owns this house'.

In summary, though Soviet society did eliminate private property, it failed to create an egalitarian society, and it also failed to generate the high growth rates that allowed capitalist societies to soften the tensions generated by social inequality.

So here is our first explanation for the failure of the Soviet attempt to abolish inequality and the many forms of unfreedom that arose from social inequality. The Soviet experiment failed because of the unpromising environment in which that project was launched, and the unexpected resilience and adaptability of global capitalism during much of the 20th century.

The Failure of the Russian Revolution: Scale 2, Inequality in Human History

Now we widen the lens and shift to the scale of human history. This invites us to explore the deeper roots of inequality. Why, after all, are so many human societies unequal, and why are they *so* unequal. Is inequality built into the very nature of human societies? Or was Marx right to assume that the goal of a society without class inequality was realistic?

The first conclusion suggested by a world-historical approach to the question of inequality is that the sort of inequalities that socialists deplored were *not* present in most human societies. It is not true, as the *Communist Manifesto* claimed, that 'The history of all hitherto existing society is the history of class struggles'. Our species, *Homo Sapiens*, has existed for perhaps 200,000 years, and for all but the last 5,000 years, there was no equivalent of class inequality or class struggle. Inequalities there certainly were, but they were personal, they existed at the level of the family and kinship group, and they did not generate vast and institutionalised differences in access to resources. No one could possibly own 100 times as much as their neighbours in a society of nomadic foragers. Personal inequalities and differences certainly mattered, but they arose from personal inequalities and the structures of family groups. They pitted individuals against individuals, and the differences in wealth they yielded were trivial. The class inequalities that interested socialists arose as a result of particular historical processes, as Marx and Engels began to understand when they studied the work of 19th-century anthropologists such as Lewis Morgan.

Despite their claims in the *Communist Manifesto* about the universality of class struggles, Marx and Engels later came to understand that significant material inequalities could not exist without high levels of productivity that yielded large surpluses that could be monopolised or controlled by elites.[13] That meant that class inequality arose as a result of the increasing productivity and technological creativity of human societies, and their increasing control over the energy and resources of the biosphere. In the absence of surpluses, inequality was personal. Today, it is clearer than it was in the 19th century that, for most of human history, surpluses were insufficient to generate distinct social classes. One reason for this is that where production did increase in the 200,000 odd years of the Palaeolithic, most surplus resources ended up being absorbed by demographic growth and the slow migrations, as a result of which Palaeolithic societies eventually populated all major landmasses apart from Antarctica. For most of human history, 'growth' took the form of extensification rather than intensification. Growth generated more human communities, but none of these communities controlled surpluses large enough to generate class differences.

In the last 10,000 years, two fundamental changes began to increase the size and significance of surplus resources. The first was the suite of technologies known as agriculture. Agriculture is best understood as a way of increasing human control of flows of energy from photosynthesis, by altering landscapes so as to increase the production of plants and animals that humans can use, and reducing the production of those they cannot use. Agriculture diverted increasing flows of energy from photosynthesis to the use of a single species: our own. So, it can be thought of as an energy grab by a single species, an energy bonanza for human beings. Eventually,

Marx and Engels came to understand the nature of these changes. In *The Origins of the Family, Private Property and the State,* they argue that it was agriculture and associated technologies that made possible the first significant accumulations of surplus wealth. 'The increase of production in all branches – cattle-raising, agriculture, domestic handicrafts – gave human labour power the capacity to produce a larger product than was necessary for its maintenance.' [14] Modern scholarship supports this general conclusion. Very rough estimates by Vaclav Smil suggest that, as a result of agriculture, the flows of biospheric energy consumed by our species rose from about 15 million gigajoules each year in 10,000 BP to about 1,000 million gigajoules each year (or by almost 70 times) 2,000 years ago.[15] Even more important, by 2,000 years ago, Smil's figures suggest that the energy available *per person,* had almost doubled. That is the energy bonanza that generated the first significant surpluses, as well as states and classes, and the first forms of class inequality.

The second crucial change was the emergence of regions such as the fertile crescent that were overpopulated by Palaeolithic standards. In over-populated regions, surpluses could no longer be diluted by spreading them over larger areas through migration. Instead, surplus resources began to be concentrated within given areas and within particular communities. Growth in the form of extensification began to give way to growth in the form of intensification. Intensification increased the wealth available per person and forced entire communities to deal with the question of how those surplus resources should be allocated and used.

These conclusions suggest that large surpluses, and the possibilities for class inequality and conflict that they yielded, are a recent phenomenon in a human history that extends over perhaps 200,000 years. If we take the emergence of the first states and cities, about 5,000 years ago, as a crucial marker of the arrival of institutionalised inequality, then it follows that class inequality has existed for only the last 2.5% of the human history.

If it is true that class inequality appeared only with the emergence of significant surpluses in resources, that raises a further question: why did human societies not distribute surplus wealth equally among all members of society? The answer is that, as we have seen, inequality was ancient, even if *class* inequality was new. Even in Palaeolithic societies there were small surpluses, there were luxuries and indicators of prestige, and these were fought over. So the appearance of large surpluses did not create inequality. What it did was to magnify the scale, extent and significance of inequality, to the point where inequality became embedded in new institutions structures, including states. Marx and Engels argued, on the basis of the best anthropology of their time, that once significant surplus resources appeared they were soon controlled by senior males, who already enjoyed dominant roles in societies without surpluses. Modern anthropology, with its many studies of the emergence of new forms of power, of big men and chiefs, tells a similar story. As surplus wealth grew within communities, differences in access to and control over surpluses began to magnify inequalities in the millennia before the appearance of the first full-blown state systems roughly 5,000 years ago. Growing surpluses allowed the division of labour to take new forms, and that magnified inequalities by creating new roles, some of which were more powerful and influential than others. These included leadership roles, and because, in agricultural societies, women's lives were dominated by child-bearing and child-rearing, males generally found it easier to take up leadership roles than females. In this way, surpluses magnified differences in gender roles as well as differences in power and control over resources.

So here is a possible theory about the emergence of the new forms of institutionalised inequality that interested 19th-century socialists. Class inequalities arose as surplus wealth magnified differences and inequalities that had previously taken personal or genealogical forms. Those inequalities were increased even further by a growing division of labour that created new roles, some of which were more powerful and influential than others. If this theory is correct, it suggests that the Soviet project of creating a more egalitarian society in a world of high productivity and large surpluses was unrealistic. It suggests, in fact, that the deliberate reduction of inequality is a Utopian project in any human society that enjoys significant surplus wealth. The same conclusion is suggested in

a recent book by Walter Scheidel, *The Great Leveler*. Scheidel argues on the basis of empirical evidence drawn from all eras of human history, that significant reductions in class inequality have always coincided with catastrophes of some kind, with wars, plagues, political breakdown or revolutions. They have never been brought about by deliberate government action. He writes: 'Throughout recorded history, the most powerful leveling invariably resulted from the most powerful shocks. Four different kinds of violent ruptures have flattened inequality: mass mobilization warfare, transformative revolution, state failure and lethal pandemics.'[16] That conclusion fits neatly with the conclusions of Thomas Piketty, who argues, in *Capital in the Twenty-First Century,* that levels of economic inequality declined significantly in the capitalist world for much of the 20th century, and they declined because of the destructiveness of the world wars, which wiped out much traditional landed wealth. Eventually, though, as if such declines cut against the grain of long-term social evolution, Piketty argues that levels of inequality began to rise once more from the 1970s, in the era of Thatcherism and Reaganism. They rose as a result of new styles of capitalism that tried to limit government involvement in economic activity and relax governmental restraints on entrepreneurial activities and profits.

So here is a possible second explanation for the failure of the Russian revolutionary project. Once human societies began to generate significant surpluses, the idea of a genuinely egalitarian society became unrealistic. Inequality would fall only in societies in which those surpluses were drastically reduced by some form of catastrophe. Inequality could decline only as a side-effect of disasters that reduced surplus wealth and impoverished large numbers of people. Despite Marx's rigorous analyses of capitalism, the socialist dream was Utopian.

The Failure of the Russian Revolution: Scale 3, Inequality in the History of the Biosphere

Now we widen the lens even further, and pose questions about inequality at the scale of the biosphere. Is the structured inequality that interested socialists a purely human phenomenon? Is it unique to the history of our own species, or have similar forms of inequality appeared among other species? Such questions could not be asked seriously in the 19th century, because our understanding of the history of the biosphere was not sufficiently well developed. Today, we can pose these questions with some rigour, and the answers have much to tell us about what it is that makes our own species so distinctive.

The biological world is full of inequality. Everywhere, we see unequal relations, including predation and unbalanced forms of symbiosis, such as our own relationship to domesticated animals. Within species, too, we see many forms of inequality. There are genetically based forms of inequality, such as those between a queen bee and worker bees. But there are also many non-genetic forms of inequality, such as the pecking orders of chickens or the dominance hierarchies in wolf packs. These are all personal or lineage-based forms of inequality, similar in many ways to those we see in human societies in the Palaeolithic.

But these forms of inequality differ from the institutionalised inequalities that interested Marx and Engels, because the material differences, though significant for individuals, were too small to generate the large and institutionalised differences in wealth and power that interested 19th-century socialists. The sort of class inequality analysed by the pioneering socialists was something new to our species. And it arose because humans were unique in eventually generating surpluses many orders of magnitude greater than those generated by any other species in the history of the biosphere, surpluses that allowed some to live well beyond bare subsistence.

Why do humans alone generate accumulations of surplus resources much larger than those needed for basic subsistence and reproduction? In what follows, I will offer the best answer that I am aware of. Not all scholars would accept this answer but, if it is correct, it points to the most important single difference between humans and all other species that have lived on planet earth in its 4-billion-year history. In other words, it may help us understand what is unique about human beings and human history.

The crucial difference arises from our unique ability to share, store and accumulate information, and to use that increasing store of information to increase our control over the energy and resources of the biosphere. I call this unique ability, 'collective learning'.

All species, even bacteria, detect and use information about their surroundings in order to extract the energy and resources they need to survive and reproduce. But there are limits to the amount of information available to individual organisms, and these set limits to the populations of every species. That is why the populations of new species seem to increase as individuals multiply to exploit the niche for which they are adapted, until, eventually, population growth slows once the species has filled up its niche. There seems to be a limit to the ecological space open to every species and that is what explains the familiar S-shaped graph of population growth that we find everywhere in the biological realm. What makes humans different is our ability to transcend those limits. We can exchange information with such efficiency and precision and in such huge amounts that information begins to accumulate across generations within whole communities of humans. And new information allowed our ancestors to exploit new niches, sometimes by the simple expedient of moving to new territory with different resources. And that explains why humans kept breaking through the apparent limits to their control of energy and resources represented by the flattening of the S-curve.

What explains this extraordinary capacity for sustained innovation? The unique power of human language. The extraordinary precision and reach of human language allowed individuals to add new insights to already existing stores of knowledge, so that, over time and across generations, human understanding of their surroundings slowly increased. We seem to be the first species in the history of the biosphere of which this is true. If other species had had the ability to accumulate enough information to keep exploiting new niches, we would have seen the evidence, as they spread into new niches and began to control an increasing share of the energy and resources available within the biosphere. We see such evidence only for one species, our own. So, the appearance of our own species, the first species capable of 'collective learning', counts as a remarkable new phenomenon in the history of the biosphere. Once such a species evolved, it was no longer possible to identify limits to its ability to exploit the biosphere, short of controlling the entire biosphere. And that is where we seem to be today, in an era that increasing number of scholars are beginning to call the 'Anthropocene Epoch'.

This line of argument suggests that *class* inequality, based on large surpluses, is unique to human history, because there has been only one species in the entire history of planet earth (our own) that has had the ability to constantly increase the amount of energy and resources that its members mobilise from their environments, until they control much more than is needed for mere subsistence.

Seeing the problem of inequality in the context of the biosphere suggests two further insights.

First, the biospheric perspective can help us see class inequality itself in new ways. Central to modern ecology is the idea of a food chain, through which energy that reaches the earth from sunlight is captured and redistributed through networks of different organisms. Ecologists talk of distinct 'trophic' levels. Photosynthesising plants capture energy from sunlight. Herbivores capture a small proportion of that energy if they eat plants, because most of the energy is lost in transmission. Carnivores, in turn, capture a small portion of these energies if they eat herbivores. Ecologists argue that the amount of energy available at each trophic level may diminish by as much as 90% in comparison to the previous level. That is why the biomass of carnivores is much smaller than the biomass of the herbivores on which they prey. Class inequality can be thought of as a new trophic level, as elite groups learnt to extract energy and resources from much larger groups of peasants and foragers who, in turn, extracted resources from the natural environment. In this way, the human capacity for collective learning allowed the creation of an entirely new level in the food chain. And it is striking that, very roughly, elite classes made up about 10% of the populations of the class societies that have existed throughout the last 5,000 years since the appearance of the first significant surpluses, cities, states and classes in Sumer and Egypt. Seen in this way, class inequality appears as a phenomenon that is unique to human history, but builds on forms of inequality

that are ubiquitous in the natural world.

Second, seeing human history within the history of the biosphere helps explain why the inequalities of the modern era are so much greater than those of any past era in human history. Human surpluses accumulated as a result of multiple innovations, all generated as a result of our unique capacity for collective learning. But the accumulation of innovations was not a steady or even process. On the contrary, some innovations had only local impacts and others were lost or superseded, while others were transformative in their impact. In human history, it makes sense to identify two clusters of mega-innovations associated, respectively, with agriculture and the fossil-fuels revolution. As the English historian E A Wrigley, has argued in many publications, today's industrialised, globalised world depends on fossil fuels.[17] If agriculture gave humans access to increasing flows of energy from recent photosynthesis (burn a piece of wood and you are releasing energy captured from sunlight within the last few decades), fossil fuels gave us access to vastly greater flows of photosynthetic energy, captured and stored over several hundred million years. Vaclav Smil's figures suggest that human consumption of energy rose from about 1,000 million gigajoules a year 2,000 years ago to over 500,000 million gigajoules in the year 2,000 (a 500-fold increase) and the amount of energy we consume continues to rise. The amount consumed on average by each individual increased, in the same period, by perhaps fifteen times, whereas per capita energy consumption had increased only two times in the previous 8,000 years. Energy, of course, can be transmuted into wealth, so it is no surprise that inequalities have assumed grotesque forms in today's world.

The staggering energy bonanza from fossil fuels, which has been released only in the last century or two, explains one of the most remarkable features of today's world: the fact that surplus wealth, wealth that allows consumption levels well above subsistence, is no longer confined to small elite groups, but is now enjoyed by a growing global middle class, for the first time in human history. So vast is the bonanza of energy and wealth that it is beginning to enrich a growing proportion of the human community, even as that community has grown by an order of magnitude. But of course, that wealth is not distributed evenly, and that explains why the upper levels of the modern pyramid of wealth are so much higher than they were in the past.

Conclusion: Inequality in the Anthropocene:

Today, the vast resources generated by the fossil-fuels revolution have allowed the emergence of a growing global middle class. Yet differences in access to wealth and resources seem to be growing faster than ever. Will the distribution of new wealth soften the inequalities of today's global capitalism? Or will growing inequalities generate the sort of tensions that Marx believed would eventually break capitalism? After all, today global populations are so much larger than in the past that even if the proportion of those living in absolute poverty has declined, the absolute numbers are larger than ever before. In 2005, more than three billion people (more people than the total population of the world in 1900) lived on less than $2.50 a day. Most of these people have seen few benefits from the fossil-fuels revolution and suffer from the unhealthy, unsanitary and precarious living conditions of the early industrial revolution that were described so vividly by 19th-century authors and socialists such as Dickens and Engels.

The sheer amount of energy and resources available today means that, in principle, it should be possible to reduce inequalities, without aiming at the Utopian goal of a perfectly egalitarian global society. If this is true, it means that the challenges of the Russian Revolution face us once again; can we lower inequality to levels that reduce the likelihood of the sort of class explosion that Marx foresaw? We have seen that major reductions in inequality brought about by deliberate policy decisions seem unlikely in class societies with large surpluses. That is the gist of Walter Scheidel's argument. But the history of 20th-century capitalism, including its many different experiments with some form of welfare state, suggest that more modest reductions in inequality — reductions that might just be sufficient to stave off a revolutionary explosion — may be achievable. And the sheer size of

modern surpluses makes such an outcome more plausible than ever before in human history.

Unfortunately, there are ecological reasons for doubting that continued growth can soften class tensions as it did in the capitalist world for much of the 20th century. This is because there is growing evidence that, despite our technological virtuosity as a species, we will soon face insurmountable limits to growth. Those limits no longer arise from lack of innovation or even of energy and resources, but rather from limits to the resilience of the biosphere as a whole. The flows of energy and resources on which modern society depend are now so colossal that they are rivalling the great biospheric processes of plate tectonics, and the water and carbon cycles. The huge flows of energy and resources now managed by human societies are beginning to transform the atmosphere and the oceans in ways that will eventually undermine the relatively stable climatic conditions that allowed the emergence and evolution of agrarian civilisations over the last 5,000 years. And this suggests that, sometime in the next hundred years, growth must slow down or stop, either as a result of deliberate human action, or as a result of external catastrophes. The limits to growth have been studied carefully by many environmental organisations, none better than the Stockholm Resilience Centre, whose analyses point to the existence of a number of crucial limits that human activities must not breach.[18]

How will the issue of equality and inequality play out a century after the Russian Revolution, in a global society in which continued growth is no longer sustainable?

First, if growth begins to slow, we will once again have to take seriously the tensions that Marx thought would destroy capitalism. In a world of slowing growth, it will be much harder to soften the tensions created by rising inequality. As Thomas Piketty has warned, increasing inequality will surely generate increasing instability. The rational response is surely to try, not to abolish inequality, but to soften it. The capitalist societies of the mid-20th century, with their extensive welfare state systems and safety nets, suggest that this is not a Utopian goal.

Second, as we adapt, deliberately or under various forms of external pressure, to the realities of a society with little growth in energy and resource flows, we may have much to learn from past human societies, and those indigenous communities that today try to preserve traditions of the ancient past. Societies in which both class inequalities and economic growth were limited flourished for most of human history, and we may have much to learn from them and their modern descendants about how to live sustainably, how to live without the fantasy that future generations will always enjoy larger surpluses than our own generation.

If we do not set goals that are too Utopian, if we aim at reducing inequalities to levels that allow the emergence of sustainable and viable societies, then we may be able to manage the transition to a world that is more egalitarian and more sustainable than today's world.

Curiously, one of the best descriptions I know of such a society comes from the economic writings of J S Mill. John Stuart Mill welcomed such a future as a refreshing contrast to the frenetic gold-rush world of the industrial revolution. In 1848, he wrote in his *Principles of Political Economy*: 'I confess I am not charmed with the ideal of life held out by those who think that the normal state of human beings is that of struggling to get on; that the trampling, crushing, elbowing, and treading on each other's heels, which form the existing type of social life, are the most desirable lot of human kind, or anything but the disagreeable symptoms of one of the phases of industrial progress'. Instead, he argued, 'the best state for human nature is that in which, while no one is poor, no one desires to be richer, nor has any reason to fear being thrust back, by the efforts of others to push themselves forward'. Growth was still needed, he stated, in many poorer countries, but the richer countries were more in need of a better distribution of wealth. With basic necessities taken care of, the task for them was to live more fully rather than to keep acquiring more material wealth.

> A stationary condition of capital and population implies no stationary state of human improvement. There would be as much scope as ever for all kinds of mental culture, and moral and social progress; as much room for improving the Art of Living, and much more likelihood of its being improved, when minds ceased to be

engrossed by the art of getting on.[19]

Mill is not the only economist to have recognised that economic growth is not the same as a good life. In 1930, in an essay entitled 'Economic Possibilities for Our Grandchildren,' the British economist John Maynard Keynes argued that within a century, productivity would be high enough to guarantee the necessities of life to everyone. At that point, he hoped, people would stop working so hard and think more about how they lived rather than how to generate even more wealth.

Mill warned that the stationary state should be chosen deliberately and on good terms before it was forced on a reluctant humanity on much poorer terms. 'I sincerely hope, for the sake of posterity, that they will be content to be stationary, long before necessity compels them to it.' If we don't manage to build a less unequal world through the deliberate, coordinated efforts of governments around the world, we may face the sort of breakdowns that Walter Scheidel has described, breakdowns that will create a more equal world despite everything we do, by levelling down rather than by levelling up, by sending humanity back to the living standards and conditions of the agrarian era. That is an outcome none of us moderns should wish for.

Once again, the issues posed by the Russian Revolution are on the agenda for today's global societies. Once again, we have to start thinking how to create societies that are more equal than those of the past. Our expectations may be more modest than those that drove the October Revolution. But somehow or other it will be vital to soften inequalities that could lead to social conflicts on a global scale, in a world now equipped with nuclear weapons. In addition, we face the new challenge of limiting the flows of energy and resources on which modern societies are built, in order to avoid a serious breakdown of the biospheric mechanisms on which all human societies depend. Rapid economic growth can no longer soften the tensions created by inequality. As we tackle these huge, global challenges, the experiences of the Russian Revolution may still have much to teach us.

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[1] There is a rapidly growing literature on big history. For some samples, see David Christian, *Maps of Time: An Introduction to Big History*, reprint with a new preface, Berkeley, CA, University of California Press, 2004; David Christian, 'The Return of Universal History,' *History and Theory, Theme Issue*, 49 (December 2010), pp 5-26; and a more recent essay, David Christian, "What is Big History?", *Journal of Big History,* Vol 1, No 1 (2017), pp 4-19.

[2] H G Wells, *Outline of History: Being a Plain History of Life and Mankind,* 3rd ed, New York, Macmillan,1921, Preface.

[3] R R Palmer, *The Age of the Democratic Revolution,* 2 vols, Princeton: Princeton University Press, 1959, 1964.

[4] Karl Marx, *The Communist Manifesto*, in D McLellan (ed) *Karl Marx: Selected Writings*, London, Oxford University Press, 1977, p 222.

[5] *The Communist Manifesto*, p 225.

[6] *The Communist Manifesto,* p 288.

[7] Walter Scheidel, *The Great Leveler: Violence And The Global History Of Inequality From The Stone Age To The Present,* Princeton, Princeton University Press, 2017, p 6.

[8] http://www.bbc.com/news/business-35339475 [accessed 20 October 2017].

[9] Paul Gregory, *Before Command: An Economic History of Russia from Emancipation to the First Five-Year Plan,* Princeton, Princeton University Press, 1994.

[10] I make this argument in great detail in David Christian, *A History of Russia, Central Asia and Mongolia,* Volume 2, *Inner Eurasia from the Mongol Empire to today: 1260-2000,* Wiley Blackwell, 2018.

[11] M T Florinsky, *The End of the Russian Empire,* New York, Collier Books, 1961, pp 228-9.

[12] Thomas Piketty, *Capital in the 21st Century,* trans. Arthur Goldhammer, Cambridge, Mass., Harvard University Press, 2014.

[13] The classic statement of this position can be found in Marx and Engels, *The Origins of the Family, Private Property and the State.*

[14] Friedrich Engels, 'Origin of the Family, Private Property, and the State', [1884], *Marx/Engels Selected Works*, Vol 3, 2010, p 87, marxists.org/archive/marx/works/download/pdf/origin.

[15] based on Vaclav Smil, *Harvesting the Biosphere: What We Have Taken from Nature,* Cambridge, Mass., MIT Press, 2013.

[16] *The Great Leveler,* p 9.

[17] See, for example, E A Wrigley, *Energy and the English Industrial Revolution,* Cambridge, Cambridge University Press, 2011.

[18] On the idea of 'Planetary Boundaries', see http://www.stockholmresilience.org/research/planetary-boundaries.html [accessed 8 Feb 2018]

[19] John Stuart Mill, *Principles of Political Economy with some of their Applications to Social Philosophy*, Sir W J Ashley (ed) [1848], London, Longmans, Green & Co, 1920, p 752.