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## The Evolution of Social Power

*This article is the second in a series based on Richard's forthcoming book, **POWER: LIMITS AND PROSPECTS FOR HUMAN SURVIVAL**. For information about the book and how to join a pre-release reading and discussion group please see [postcarbon.org/power](http://postcarbon.org/power). To read the first in the series, see [Museletter #337](#).*

We are all enmeshed in fascinating and often daunting webs of social power. From laws to police and prisons, to armies and weaponry, to fame and high political office, to paychecks and taxes, to debt and credit, to advertising and public relations, to propaganda, to household and workplace gender dynamics, to organizational chains of command, to extremes of wealth and poverty, people have found endless ways of modifying one another's behavior to suit their wants and needs.

These proliferating abilities to influence others are rooted in nature. All social animals have hierarchies (like the pecking order in my backyard flock of hens), and some animals are territorial, excluding others of their kind from access to mating opportunities or food. Some creatures (like ants) have even evolved a clearly defined division of labor. But we humans have managed to take social organization to extremes, empowering some and disempowering others in ways that are sometimes brutal beyond comprehension. How and why have we done this?

As a result of decades of work by anthropologists, archaeologists, psychologists, and biologists, answers are falling into place. It turns out that the chief initial players in the drama of evolving social power were language, food, fighting, and reproduction.

When we speak of social power, we're usually referring to *vertical* power—in which one person, or a group, influences the behavior of others through incentives and disincentives (i.e., bribes and threats). This kind of power evolved in discrete stages starting about 11,000 years ago. More on that in a moment.

Prior to that, however, and for the vast majority of our existence as a species, we lived as hunter-gatherers, among whom power was typically distributed more horizontally. That is, nearly everyone took part in decisions, and authority was situational, based on demonstrated skill or knowledge. Women

and men had somewhat different spheres of activity, but they respected each other's contributions to the group. No doubt, groups differed significantly in terms of how people treated one another, largely depending on how they adapted themselves to obtaining local food. But, as far as we can tell, vertical social power was minimal.

Nevertheless, this wasn't a peaceful Eden. The latest archaeological evidence suggests that life in pre-agricultural societies was fairly [violent](#). Within groups, disagreements over sex or food could occasionally result in a beating or worse (there's abundant proof that, throughout history, the great majority of violent acts have been committed by [men](#) rather than women). However, most casualties came not from family squabbles, but from raids and counter-raids between groups competing for access to the best foraging space. Over time, competition *between* societies resulted in more cooperation *within* societies. Increased cooperation was facilitated by the ongoing development of language, which enabled people to coordinate their behavior, ask questions, and teach complicated sequences of tasks. Increased cooperation provided the means for societies to grow in size and complexity—thereby, again, enabling them to compete more successfully with their neighbors.

Population growth, crowding, and fighting ultimately drove two key, related developments: the adoption of field agriculture based on grain crops, and the formation of the first states (which in turn led to more population growth, crowding, and fighting). Grains permitted more intensive food production; they also could be stored, and could therefore be taxed. Taxation enabled leaders to put surplus aside in case of poor harvests in years to come—while also allowing them to enrich themselves, to pay for palaces and temples, and to hire teams of full-time specialists in violence (i.e., soldiers) to raid other, neighboring societies or to defend against raids. As urban centers grew, some people began to specialize as blacksmiths, accountants, priests, and merchants; but the great bulk of the populace remained tied to the land as farmer-peasants.

The long, slow development of grain agriculture entailed the domestication both of crop varieties and of animals bred for food, traction, and pest control. Gradually, some people began to apply the techniques of animal domestication to other people. Women and children started to be treated essentially as household domesticates, while war captives were pressed into slavery (which was universally practiced in early state societies). As rigid social castes emerged, humanity—a single species—divided itself into groups that acted more predator-like or more prey-like with respect to other groups. This was vertical social power in its rawest form.

Because farmers tended to stay in one place, rather than following the seasonal movements of game animals like many of their hunter-gatherer forebears, they started to divide and fence land. As the notion of land ownership emerged, exclusionary power (also seen in the territorial behavior of animals like badgers, spiders, and hummingbirds) took strange new forms, with some people claiming ownership of other people, and kings claiming ownership of the entire state.

With people living closer together, it became easier to share new ideas and teach new skills. Key inventions included improved weapons (e.g., swords and armor), farming tools (notably, the plow), money, and writing. Money

served as a storable, transferrable token of social power; while communication technologies (starting with writing) enabled a few to influence the minds of many.

Cities offered opportunities for invention and wealth creation, but they were places of disease and high mortality rates. Therefore, they had to be continually supplied with more human beings from the countryside or from military conquest. Women in early state societies were tasked with birthing and raising as many children as possible.

Money, debt, and taxes created a new social phenomenon: the wealth pump, which continually funneled wealth originating with nature to farmers, miners, and craftspeople, and hence to soldiers, merchants, priests, and kings. Society became a pyramid of economic and political power, a self-regulating system of wealth and poverty. But there was a cost to this sorting process: the ongoing degradation of nature (damage to soil or overharvesting of trees) destabilized the system, as did the continual impoverishment of people at the bottom of the social structure—who could be taxed no further once they were starving. Meanwhile, increasing numbers of people wanted to be at the top of the pyramid; so, in moments of crisis, factions of elite aspirants sought to sway the masses in different directions, leading to coups and revolutions.

In sum, vertical social power evolved together with population growth, war, communication technology, and food production. It came with obvious drawbacks (who would want to be a slave or even a peasant, and who would want to live through a period of grave societal instability or collapse?), but such societies survived and proliferated because they were collectively powerful in relation to other societies.

But that's not the end of the story of social power's evolution. Two big turning points came later, when everything changed.

The first occurred about 3,000 years ago, when animal-herding tribes of the great Eurasian Steppe, stretching from modern Ukraine to Manchuria, began using the horse (domesticated around 5,500 years ago) in warfare. Using horse-drawn chariots and saddle-seated cavalry, the Steppe dwellers swooped down on early kingdoms, toppling one after another. The latter needed to do something to respond and survive, and their solution involved even greater social complexity. Empires emerged, with larger land areas and populations. Having more citizens gave them a bigger tax base, so they could afford to build long, high walls and hire bigger armies, with chariots and cavalry of their own. But empires faced an internal problem: their citizenry was drawn from peoples with differing customs, religions, and languages. How to keep everyone on the same page?

Social evolution provided a solution: Big God moralizing religions. Previously, religion had little to do with morality; it served a range of other social and psychological functions. Big God religions implanted a moral watcher in each person's head, which proved to be an effective and economical means of social control. Knowing that others worshipped the same moralizing deity increased trust and cooperation, thereby facilitating trade and public order. The idea of heaven made these religions attractive to non-believers, while the idea of hell discouraged backsliders. You could easily identify whom you could count on, because all adherents to the religion

were required to perform personally costly public demonstrations of loyalty, such as church attendance, tithing, and pilgrimages. Unfortunately, dispensing torture and death to nonbelievers was another way of showing commitment to the Big God. These religions also reinforced women's burden of producing as many offspring as possible: population growth was seen as a source of social power to be wielded by each religion's adherents against all competing religious groups.

The second turning point came much later, just a couple of centuries ago, with the advent of fossil fuels. Energy is what empowers us to do anything whatsoever; with more energy, we can do more things. Fossil fuels represented millions of years of stored ancient sunlight, available cheaply and in seemingly endless quantities. Over the last 200 years, humanity's annual energy usage has grown by a staggering 4,000 percent, with some societies and individuals using far more than others. Suddenly it became possible to do everything faster and on a bigger scale—including farming, mining, manufacturing, transporting, and fighting. Applied to agriculture, fossil fuels plus technology reduced the number of full-time farm laborers to a tiny fraction of the populace. People left the countryside and moved to cities, creating a new middle class of employees jostling for jobs in manufacturing, sales, advertising, and dozens of industries that had barely existed a century or two earlier. With more available food, and fossil-fuel-based medicines and sanitation chemicals, cities became safer, and the human population exploded from 1 billion in 1820 to nearly 8 billion in 2021. Whereas agricultural life favored a division of labor between women and men, the overwhelming majority of urban factory and office work could be done equally well by people of any gender. Hence came organizing efforts to obtain voting rights and equal pay for women.

The initial phase of the fossil-fuel energy transition centered on coal. For the first time in history, coal “energy slaves” could supplant the forced labor of millions of human beings. This development (plus the multi-racial, morally-based abolitionist movement and a Civil War) led to the end of state-sanctioned slavery. Unlike the previous agricultural economy, the new coal-powered industrial system employed specialized workers at key nodes along society's energy supply routes, and these workers were frequently abused, underpaid, and subjected to dangerous and unhealthy conditions. The coal economy thus became the perfect breeding ground for a new kind of political power characterized by trade unions, strikes, and the spread of both democracy and progressive economic reforms. At the same time, however, in international relations coal led to steamboat colonialism and more deadly wars for control of sources of raw materials.

The next phase of the fossil energy transition flowed from oil, which was more energy-dense and portable than coal. Petroleum introduced transportation via automobiles and trucks; as a consequence, cities were redesigned around highway systems. Meanwhile, petroleum-fueled aviation, which started as a dangerous hobby, quickly became a routine mode of long-distance mass travel.

Because oil was easily moved via pipeline and tanker, petroleum revenue streams were often global in nature. Further, while the United States was the world's superpower of oil production during the first half of the 20<sup>th</sup> century, pumping over half the world's petroleum in most years, even larger amounts

of oil and gas happened to be located in poor nations in the Middle East. Thus, the unfolding story of oil would hinge on US geopolitics, which itself depended largely on the maintenance of the dollar as the world's reserve currency and as the currency of account for the international oil trade.

Oil-age weapons led to industrial-scale killing. World War II—which was fought with oil, and, to a large extent, for access to oil—took roughly 60 million lives and incentivized the development of weapons capable of destroying entire cities in an instant.

Fossil fuels enabled so much resource extraction and manufacturing as to provoke a new kind of economic problem—the overproduction of goods, which was one of the causes of the Great Depression. Industrial and government managers came up with a solution that combined advertising, planned obsolescence, and consumer credit. It amounted to a new kind of economy—the *consumer* economy—which is managed via interest rates and measured by GDP. Its primary goal is *growth*, on which jobs, government revenues, and investor profits all depend.

By the late 20<sup>th</sup> century, global trade and communications had created a kind, and a level, of species-wide economic integration never before seen. Humanity had become a [Superorganism](#) with a global metabolism: minerals extracted on one continent are now processed on another, integrated into a manufactured product on another, sold to an end user on still another, then eventually shipped across an ocean to be recycled or dumped in a waste heap.

By 2007, for the first time in history, more people lived within cities rather than outside them. Among other things, the trend toward urbanization resulted in a subtle disconnection of people's lives and thoughts from land and nature. People's immediate welfare now depends more on paychecks, investment returns, and government programs; their deeper dependency on natural systems and cycles is simply taken for granted and unexamined. We are obsessed with economic gyrations and political intrigues, as well as proliferating entertainment options; thus, few people notice as other species disappear, the climate changes, and the oceans die.

Fossil fuels gave the wealth pump the capacity to transfer value from nature to industrialists, bankers, and investors in unprecedented amounts, producing unimaginable fortunes. Without brakes on that process, inequality quickly grew to dangerous extremes. During the 20<sup>th</sup> century, policy makers instituted graduated taxation (which partially reversed the action of the wealth pump by taxing the rich at higher rates) and redistributive government programs (education, health care, food coupons) in order to keep inequality from generating social and political crises. In some countries, the consequence was a Big Government that replaced key functions of Big God religions, thereby contributing to the secularization of society.

Domestically, economic growth served as a social pacifier: business-friendly policy makers argued that, as long as the whole economic pie is growing, it doesn't really matter if some people are taking disproportionate slices—as long as those people are seen to be responsible for growth. Internationally, “development” was sold as a process whereby poor nations would increasingly become industrialized and richer. In most cases, however, it amounted to an empty promise. In reality, international bankers convinced

leaders of low-GDP nations to borrow immense sums to pay for bloated infrastructure projects; then bankers and policy makers in wealthy nations used that debt to force those nations to “develop” (i.e., privatize, extract, and cheaply sell) their natural resources. As [Jason Hickel](#) points out, low-GDP nations contribute about 80 percent of the global economy’s labor and resources, but receive about five percent of the income generated.

Throughout the evolution of social power, human values have changed to fit the eco-social energy context. Hunter-gatherers had politically and economically egalitarian values, gender inequality was variable but generally low, and levels of interpersonal violence were high. People in agrarian state societies ardently believed that political and economic hierarchies were justified, gender inequality was extreme, and (outside of warfare) levels of interpersonal violence were lower. Fossil-fueled societies have politically and economically egalitarian values, gender inequality is low, and interpersonal violence is lower still.

Thus, in terms of human values, history traces an arc that nearly completes a full circle: the values of hunter-gatherers and fossil fuelers have some surprising things in common. Agrarian societies were the outlier, because their processes of energy capture favored rigid political hierarchies and division of labor by gender. History teaches us that human values are mutable, but it also suggests they are closely tied to energy and food systems.

Vertical power is certainly alive and well today. Despite all efforts in recent decades at economic “leveling” (via unions, progressive taxation, and government redistribution programs), inequality has grown to extremes. One example is emblematic in this regard. In the 1960s, military competition prompted the development of early computer networks, the antecedents of the internet; when the latter emerged full-blown as the World Wide Web in the mid-1990s, fast electronic communication created a blizzard of business opportunities, which eventually led to more effective manipulation of opinion and the accumulation of unprecedented fortunes by digital entrepreneurs. While the web is often thought of as empowering everyone who uses it, in fact it has contributed to widening inequity. And, once again, war, communication technologies, and increasing economic inequality were bound up together in a social evolutionary process.

During the past century, specialists have begun studying the social and psychological impacts of vertical power. Their findings are unsurprising but disturbing. Power makes us literally crazy, and can turn perfectly normal people into monsters. People with a little power want more. People with low self-esteem often abuse what little power they have. And people whose power is threatened often lash out. Those who crave power often prop themselves up by putting others down. Those with more power rationalize reprehensible behavior toward those with less by assuming or asserting that the powerless are lazy, corrupt, incapable, unintelligent, or otherwise undeserving. Experiments organized by Solomon Asch in the 1950s showed that ordinary people will agree to ridiculously incorrect assertions by authority figures in order to conform. And Stanley Milgram’s famous and troubling studies on obedience to perceived authority, carried out in the 1960s, showed that ordinary people look to those with power for direction, even when asked to do things that are morally questionable.

We also know now that inequality hurts us all. Anthropologists and historians have developed a new field informally known as “collapse studies,” in which they’ve probed data from hundreds of societies for patterns, revealing “secular cycles” of wealth accumulation and societal instability. However, we can also see inequality’s perils all around us in the present: in the coronavirus pandemic, the rush by wealthy nations to secure as many vaccines as possible has the unintended effect of minimizing vaccination rates in poor nations, thereby greatly reducing the likelihood of eliminating the disease from *any* country any time soon. Similarly, the failure by wealthy nations to pay for climate change adaptation in poor nations will likely lead to massive waves of refugees overwhelming the borders of the rich.

Vertical power worked well for us humans in some ways, increasing our collective power and enabling some of us to enjoy great conveniences. But the costs have been incalculable. Moreover, the inadvertent environmental damage caused by the recent evolution of human physical and social power may be unsurvivable.

In recent years, social inequality has been contested by Occupy Wall Street, Arab Spring revolutions, and Black Lives Matter protests, to name just three prominent instances. But insufficient informed public attention has been directed toward the structural causes of power inequality in the modern world: the wealth pump, food and energy systems, weapons, communication technologies, and debt.

As we’ve seen, the evolution of social power was primarily tied to growth in usable energy—first as a result of the development of farming, and then through the introduction of fossil fuels. In measurable terms (growth of population, per capita energy usage, and per capita wealth), fossil fuels were actually a bigger deal in human social evolution than the invention of agriculture or the advent of empire. But fossil fuels are finite and depleting, and burning them causes climate change. For reasons I have explored at length in [other publications](#), the proposed replacements (solar, wind, and nuclear power) probably won’t be able to supply as much energy as we currently use, much less permit further growth. As our collective physical power is poised to wane, here are just a few of the big, interrelated questions about social power that we probably should be thinking about:

- Will the human Superorganism be able to maintain itself as a collective entity? What are the implications if it doesn’t? If it survives, could it “mature” by somehow becoming aware of natural and social limits and adapting itself to them?
- Can we recover the horizontal power enjoyed by our hunter-gatherer forebears? Or would doing so ultimately require giving up farming and all that goes with it?
- Is universal gardening a realistic alternative to centralized food systems based on grain agriculture?
- Will urbanization reverse itself, so that re-ruralization becomes a dominant demographic trend later this century?
- How can women maintain and expand their hard-won equality in a post-fossil-fuel world?
- How can we prevent slavery from making a comeback, while continuing to address that terrible historical institution’s reverberating impacts?

- Can we reduce inequality without reining in communication technologies?
- If the rapid population growth of the past two centuries depended on the benefits of cheap, abundant energy, what are the population implications of energy decline?
- How can we manage energy decline without war?
- Do we need a new religion to reconnect us to nature?
- Can we get along without debt?
- How can we more effectively limit the proliferation of weapons?

That's a lot to contemplate. We shouldn't expect to have all the answers right away, given the fact that most people, including most world leaders, haven't even arrived at the questions yet. But we'll need some answers soon. Finding ones that we can live with, and weaving them into the fabric of our social relationships, will require more than careful thought; work and sacrifice will be needed, too.