

Resistance is Futile: The Borg, the Hive, and Corporate Hegemony

*Es inútil resistirse:
los borg, el enjambre y la hegemonía corporativa*

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ABSTRACT

The Borg, a collective of humanoid cyborgs linked together in a hive-mind and modeled on the earthly superorganisms of ant colonies and beehives, has been the most feared alien race in the *Star Trek* universe. The formidable success of the Borg in assimilating their foes corresponds to the astounding success of superorganisms in our own biosphere. Yet the Borg also serves as a metaphor for another collective of biological entities known as the corporation. In the Anthropocene epoch, corporations have become the most powerful force on the planet; their influence on the social world and the environment exceeds any

government and may determine the continued sustainability of human life. Corporations have been described as people and as machines, but neither metaphor accurately describes their essence or contributes to an understanding that might resist their power. This paper reframes our understanding of the corporation by examining the metaphors that are used to describe it, and by suggesting an entirely new metaphor viewing the Borg and the corporation through the lens of sociobiology. I will argue that the corporation is a new form of superorganism that has become the dominant species on the planet and that the immense, intractable power of a globalized, corporate hive-mind has become the principal obstacle to addressing the planetary emergency of climate change. Reframing our metaphoric understanding of corporations as biological entities in the planetary biosphere may enable us to imagine ways to resist their increasing dominance and create a sustainable future.

KEYWORDS

Superorganisms; corporations; cyborgs; anthropocene; sociobiology.

RESUMEN

Los *borg*, un grupo de humanoides cibernéticos (*ciborgs*) unidos por una conciencia de enjambre y creados con base en los súper organismos terrestres propios de hormigueros y colmenas de abejas, han sido la raza alienígena más temida del universo ideado en la serie *Star Trek* (“Viaje a las Estrellas”). El impresionante éxito de los *borg* al asimilar a sus enemigos se corresponde con el asombroso éxito de los súper organismos de nuestra propia biosfera. No obstante, los *borg* también son una representación metafórica de otro grupo de entes biológicos: las corporaciones. En esta era del antropoceno, las corporaciones se han convertido en la fuerza más potente del planeta. Su influencia en el mundo social y en el medio ambiente supera a la de cualquier gobierno, y podría determinar la sostenibilidad continua de la vida humana. Las corporaciones han sido descritas como personas y como máquinas, pero ninguna de esas dos metáforas describe con precisión su esencia ni contribuye a un nivel de comprensión que pueda resistir su poder. Este artículo presenta una nueva perspectiva para la comprensión de las corporaciones al examinar las metáforas que se utilizan para describirlas, y al proponer una metáfora totalmente nueva en la cual los *borg* y las corporaciones se analizan a través de la lente de la sociobiología. Presento el argumento de que las corporaciones constituyen un nuevo tipo de súper organismo que se ha convertido en la especie dominante del planeta, y que el inmenso e inextricable poder de

una conciencia corporativa globalizada estilo enjambre se ha convertido en el obstáculo principal para abordar la emergencia planetaria del cambio climático. Darle un giro a nuestra comprensión metafórica de las corporaciones para verlas como entes biológicos de la biosfera del planeta podría permitirnos imaginar formas de resistir su creciente dominio y crear un futuro sostenible.

PALABRAS CLAVE

Súper organismos; corporaciones; *ciborgs*; antropoceno; sociobiología.

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1. The Borg

With every year that passes the task of envisioning a sustainable future becomes increasingly difficult. Unbridled corporate power intent on infinite growth is radically altering the conditions necessary to sustain life in a finite biosphere. Scientists around the world, especially climate scientists, are struggling with depression, anger, and fear as they scream from the rooftops that this is a planetary emergency requiring an immediate response. Yet the few who are listening lack the power to resist corporate capitalism. Charles Eisenstein, the author of *Sacred Economics*, writes that responding to this planetary emergency is “almost impossible actually. You could say that really we’re in the business of creating a miracle here on Earth. But I’m saying it is something that is impossible from an old understanding of reality, but possible from a new one” (Eisenstein, 2011). This essay reframes our understanding of the corporation by examining the metaphors that are used to describe it, and by suggesting an entirely new metaphor from the field of sociobiology.

But let us begin with the Borg, the most feared denizens of the Star Trek universe. The Borg are an alien race that operates as a collective of interlinked humanoid drones intent on assimilating all of the other races in the universe through the injection of nanoprobes and the addition of cybernetic enhancements. This fictional race was modeled on terrestrial superorganisms, the most evolutionary successful inhabitants of the invertebrate world: the beehives, ant colonies, wasp nests, and termite mounds. For these organisms, their constructed homes are an essential part of their nature and have enabled their evolutionary success. A superorganism is not a collection of individuals, but a unified collective tied together genetically through programmed patterns of behavior and through physical proximity to their fortified nests. Superorganisms are characterized by the interdependence of individuals, so that any individual separated from the colony will not survive, and by the division of labor, so that members are genetically programmed to perform different tasks contributing to the maintenance of the colony as a whole. Like the ants, bees, and termites, Borg drones have no individuality or self-directed will; they are simply mobile organic extensions of the hive-mind. The Borg queen acts as an avatar for the hive-mind, but Borg consciousness is not centralized but distributed throughout all of the members of the collective. The Borg and insect superorganisms can only be meaningfully understood in their linked totality. In a similar vein, the corporation cannot be meaningfully understood as a collection of individual human beings, but must be reframed as the most powerful biological entity of the biosphere exceeding the evolutionary success of the insect

superorganisms and bringing with that ecological dominance the potential destruction of the biosphere.

2. The corporation as person

A clear understanding of the nature of corporate power is necessary if we are to envision and manifest a sustainable future, but corporate power is often misunderstood and mischaracterized. A common theme heard from the left is that corporations are inherently evil. A common belief among moderates is that corporations are often unethical, but given the right leadership and an understanding of the consequences of their actions, they will correct their destructive behavior and work for the common good. On the far right, the morality of corporations is rarely part of the discussion; instead, the rights of the individual free from government control are of primary concern. If individuals want to combine their efforts and form a corporation, then the government should stay out of the way, or in fact aid the corporations to grow by subsidizing their expansion. What's good for Wall Street is good for Main Street, we are told. In all of these cases, a similar language is being used to describe corporations, as if they were people possessing human values. Even in the case of enormous multi-national corporations, we tend to identify the organization with the individual. The CEO is the human face of the corporation and is often expected to bear moral responsibility for the actions of the corporation. When the actions of corporations lead to destructive social and environmental effects, we tend to blame the people in charge. The left would ascribe moral deficiencies to the CEO and board of directors. The right would elevate the rights of individuals allied in a corporation to pursue their own self-interest over the rights of those who might have suffered the effects of destructive corporate practices. Again, moral judgments are made as if the corporation was a person with the ability to choose between good and evil.

This metaphor of the corporation as a person is the natural outgrowth of its history. In capitalist culture, humans are viewed as self-contained economic units intent on survival. There are other ways to describe humans that include concepts like social relationships and altruism, but the metaphor of the individual as pursuing their own self-interest is dominant in American society. The corporation is also a self-contained economic unit intent on survival and composed of a number of humans acting in concert. It is a new institution that has risen to prominence on the world stage beginning in the second half of the 19th century. When a new institution or concept comes into being, we tend to view it through the metaphorical frame of previous institutions or concepts, even when there are significant

differences. The metaphorical frame of the individual human agent striving after profit fits the corporation because of its similarities to previous conceptions of economic gain, and also because it serves the goals of the corporation. Our legal and political systems have been designed to serve the needs and protect the rights of individuals, and especially those individuals who are located at the top of the hierarchy of power. Because there were no preexisting legal, political, or metaphorical systems for incorporating this new institution into society, the legal, political, and metaphorical systems that had been applied to individuals were applied to corporations. Scott Bowman argues in his book, *The Modern Corporation and American Political Thought*, that this adoption of human individuality as a metaphoric frame for viewing the corporation has served to augment and solidify corporate power.

Corporate individualism continues to be the most important ideological weapon in the arsenal of corporate power. Through modern methods of advertising—especially television commercials—the corporate persona regularly advises, entertains, and indoctrinates a captive audience. Recent Supreme Court rulings concerning corporate political and commercial speech provided constitutional protection for this practice. This is not to say that corporations are necessarily irresponsible, only that they spend huge sums of money and countless hours year-round trying to convince the public that they are good citizens. (Bowman, 1996, p. 182)

The metaphor of the corporation as a human individual has now been solidly cemented into law. In the recent 2010 case of *Citizens United v. Federal Election Commission*, the Supreme Court ruled that a corporation has the same fundamental First Amendment rights as a person. This decision enabled the creation of super PACS, organizations capable of raising enormous amounts of money from corporations and spending that money on political campaigns without any limitations. The precedent for this decision goes back over one hundred years to an era when corporate power began its rise to dominance through the ownership of large industries and networks of transportation like the railroads. The beginning of the legal coup of the American government by corporate power occurred in 1886.

In 1886, in a stunning victory for the proponents of corporate sovereignty, the Supreme Court ruled in *Santa Clara County v. Southern Pacific Railroad* that a private corporation is a natural person under the U.S. Constitution—although, as noted above, the Constitution makes no mention of corporations—and is thereby entitled to the protections of the Bill of Rights, including the right to free speech and other constitutional protections extended to

individuals. Thus corporations finally gained the full rights enjoyed by individual citizens while being exempted from many of the responsibilities and liabilities of citizenship. (Korten, 1995, p. 59)

The metaphor of the corporation as individual has clearly worked to the advantage of corporations. Through the construction of this metaphorical frame, and its resulting legal and political consequences, corporations have gained a dominant role in most human activity on the planet. Their power has now exceeded the power of the nation state, the formerly dominant institution on the planet.

The scale of the concentration of economic power that is occurring is revealed in the statistics: of the world's hundred largest economies, fifty are corporations, and the aggregate sales of the world's ten largest corporations in 1991 exceeded the aggregate GNP of the world's hundred smallest countries. (Korten, 1995, p. 220)

Nation states have also employed the metaphor of nation as person. A president or prime minister is known as a head of state. In monarchies, the king or queen was not only a symbolic representation of the state, but physically embodied its power. The state's very existence depended on the rule of a king or queen sitting on the throne, a requirement that created a serious crisis when royal succession was unclear or contested. This focus on individual agency is an outgrowth of the Renaissance ideal of rational man standing at the center of the universe, and through science, gaining an understanding of the workings of the universe. Contemporary capitalist societies attribute the behavior of complex organizations to the agency of individuals. We do not have adequate metaphors available to explain their behavior as autonomous and beyond human agency.

3. The corporation as machine

This struggle to explain the exponential growth and destructive behavior of corporations calls for an alternative understanding of their essence. Beginning as early as the 1920s with Fritz Lang's *Metropolis*, and continuing to the present day with the highest-grossing film of all time, James Cameron's *Avatar*, media depictions have often used *the corporation as machine* as a central metaphor. This provides an alternative metaphorical understanding of corporations because it explains their inherent amorality. We find it hard to understand how an organization made up of people can persist in patterns of behavior that are clearly de-

structive to humanity and the planet. This would require the assumption that people are inherently greedy and selfish, and we instinctively reject that assumption. One of the most enlightening writers on this subject is Jerry Mander, probably best known for his groundbreaking book, *Four Arguments for the Elimination of Television*, published in 1978 to much critical acclaim. (His arguments have obviously not accomplished their purpose.) In 1991 he published another insightful work, *In the Absence of the Sacred: The Failure of Technology and the Survival of the Indian Nations*, which contained a brilliant and prophetic chapter titled *Corporations as Machines*. His was one of the first significant attempts to understand and metaphorically reimagine the true nature of the corporation. One of his significant insights concerned the degree to which the existence of corporations and the extent of corporate power has been taken for granted. It is almost as if a major new species had appeared on earth and begun to devastate all of the species surrounding it, but the media and the academy did not question its arrival, appearance, or behavior.

Given the extent to which corporations affect both technical change and the forces of nature, it is surprising how little attention we give them. It's not that we are entirely unaware of them; we hear their names trumpeted and flashed at us whichever way we turn. But most of us accept their existence unquestioningly, unconsciously, like background noise. We don't focus on them as the primary players they are, and we have very little understanding of why they behave as they do. (Mander, 1991, p. 121)

The degree to which the growing power of corporations has gone largely unquestioned in public awareness was also noted about the same time by David Korten in *When Corporations Rule the World*:

Corporations have emerged as the dominant governance institutions on the planet, with the largest among them reaching into virtually every country of the world and exceeding most governments in size and power. Increasingly, it is the corporate interest more than the human interest that defines the policy agendas of states and international bodies, although this reality and its implications have gone largely unnoticed and unaddressed. (Korten, 1995, p. 54)

Both Mander and Korten then go on to discuss why the people who work for corporations do not seem capable of affecting corporate behavior through their own ethical positions. There have been some recent exceptions like Ben & Jerry's Ice Cream adopting an ethical approach to doing business, and writers like Paul Hawken and Amory Lovins who advocate

a new form of corporate behavior based on environmental and social justice concerns which they call "natural capitalism." Their theory states that with the right people in charge, basing their decisions on an enlightened knowledge of long-term environmental and social consequences, it is possible to fundamentally alter corporate behavior. Korten and Mander argue against this possibility by attributing the problem not to people or their lack of enlightened knowledge, but to the very form and structure of the corporation.

The problem is deeply embedded in the structure and rules by which corporations are compelled to operate. The marvel of the corporation as a social innovation is that it has the ability to bring together thousands of people within a single structure and compel them to act in concert in accordance with the corporate purpose that is not necessarily their own. Those who revolt or fail to comply are expelled and replaced by others were more compliant. (Korten, 1995, p. 67)

Seeing corporate behavior as rooted in the people who work within them is like believing that the problems of television are attributable solely to its program content. With corporations, as with television, the basic problems are actually structural. They are problems inherent in the forms and rules by which these entities are compelled to operate. If the problems could be traced to the personnel involved, they could be solved by changing the personnel. Unfortunately, however, all employees are obliged to act in concert, to behave in accordance with corporate form and corporate law. If someone attempted to revolt against these tenets, it would only result in the corporation throwing the person out, and replacing that person with another who would act according to the rules. Form determines content. Corporations are machines. (Mander, 1991, p. 121)

Here Mander has evoked the common metaphor of corporation as machine. But are corporations actually machines, or is he using poetic hyperbole? Machines are distinguished from humans and human organizations by their inability to program themselves for the purpose of maintaining their own survival. There have been many examples in science fiction of machines gaining self-consciousness and the will to survive. But this possibility has yet to come to pass, and machines left to their own devices will do nothing unless we tell them to do something. In contrast, corporations, like individual humans, possess the ability to change their behavior to maintain their survival. They are clearly more than mere machines. A few pages later, Mander abandons the metaphor of corporation as machine and tries again to understand their true nature:

Though human beings work inside corporations, a corporation is not a person, and does not have feelings. In most senses a corporation is not even a “thing.” It may have offices, and/or a factory or products, but the corporation does not have any physical existence or form—no corporality... If the corporation is not a person or thing, what is it? It is basically a concept that is given a name, and a legal existence, on paper. Though there is no such actual creature, our laws recognize a corporation as an entity. So does the population. We think of corporations as having concrete form, but their true existence is only on paper and in our minds. (Mander, 1991, p. 124)

If corporations do not have a physical existence, this conflicts with the accepted dictionary definition of a machine as "an apparatus using or applying mechanical force," or even the alternative definition of "an efficient and well-organized group of powerful people." Corporations are not machines, and they are more than groups of efficient and well-organized people. Do they exist beyond good and evil? Is it irrational and ultimately unproductive to expect that corporations will exercise moral compunctions over their own behavior? They are a new entity, mysterious and undefined, that requires a new definition and metaphorical understanding. We need to reframe our understanding of the enormous, burgeoning power of corporations by viewing them as something entirely different from either a person or machine – a superorganism.

4. Sociobiology and superorganisms

To understand what is meant by a superorganism, we need to turn to the fairly recent scientific field of sociobiology. In 1975, Edward O. Wilson published *Sociobiology: The New Synthesis*, which led to major (and controversial) recognition of this disciplinary approach to understanding the social behavior of animals. Wilson defined sociobiology as "The extension of population biology and evolutionary theory to social organization." (Wilson, 1978, p. x) Humans are undoubtedly the most social of all vertebrate animals, and sociobiology has made human social behavior and its evolutionary roots one of its principle areas of inquiry. But there are other organisms that rival humans in the complexity of their social behavior. In a book coauthored by Edward O. Wilson and Bert Hölldobler titled *The Superorganism: The Beauty, Elegance, and Strangeness of Insect Societies* (Hölldobler, Wilson, & Nelson, 2009), the authors describe the most well-known of these superorganisms, the ants, termites, and bees, whose colonies are incredibly complex organizations consisting of innumerable individual organisms.

A superorganism is a colony of individuals self-organized by division of labor and united by a closed system of communication. Its members choose their labor roles by a small number of relatively simple algorithms that evolved by natural selection at the colony level. Each insect colony, as we have stressed, can be envisaged as a factory inside a fortress. The factory is the egg-laying queen, in company with the nurse workers, who rear her progeny, and the foragers, who supply food for all. The fortress is the nest, the workers that build it, and the members of the soldier caste that defend it. (Hölldobler, *et al.*, 2009, p. 84)

The primary distinguishing characteristics of superorganisms are the interdependence of individuals, so that any one member separated from the colony would not survive for long, and the division of labor, so that members are genetically programmed to perform different tasks contributing to the general maintenance of the colony. The primary divisions of labor include the creation of different castes to produce offspring, care for the offspring, defend the nest, forage for food, etc. Superorganisms can be compared to human society not only in their incredible complexity, but in their evolutionary success as species.

The basic elements of the superorganism or not cells and tissues, but closely cooperating animals. To follow one bee home, to peer into the hive she enters, to observe the mass of nest inhabitants in their full organized frenzy is to understand why social insects—the colonial bees, wasps, ants, and termites—are species for species the most abundant of land-dwelling arthropods. Although they represent only 2% of the approximately 900,000 known insect species in the world, they likely compose more than half the biomass... (Hölldobler, *et al.*, 2009, pp. 4-5)

Insect superorganisms have been the most evolutionary successful organisms on the planet. Consideration of their success and its application to human society may shed some light on the future evolutionary success of humanity which is now being threatened by a new superorganism, the corporation.

5. The superorganism metaphor

Since its origin in the field of sociobiology, the metaphor of superorganism has been used by other authors to describe and illuminate the progress of human civilization. In *Here on Earth: A Natural History of the Planet*, Tim Flannery, an Australian paleontologist and en-

vironmentalist, devotes three chapters to discussing the characteristics and advantages of superorganisms in the insect world, and how those advantages were also adopted as essential features of human civilizations leading to planetary dominance (Flannery, 2010). He describes human evolutionary history as being determined by the conflicts between these civilizations defined as superorganisms. He posits the independent development of five original superorganisms in five regions: the Fertile Crescent, East Asia, South America, North America, and New Guinea, and gives as an example of one of the conflicts between them the arrival of the Fertile Crescent (European) superorganism in South America leading to the rapid destruction of the South American superorganism.

This is a fascinating way to view civilizations, but it does not fit several of the key characteristics of a superorganism as defined by sociobiology. Members of a civilization can survive and even flourish far from their home, while members of insect superorganisms are tied to their hive or nest. The system of communication within a civilization is not closed as civilizations communicate with each other through translation and learning different languages, while insect superorganisms only communicate within themselves. The division of labor in a civilization is not fixed and reproduction occurs within all castes, while insect superorganisms have fixed division of labor and reproduction. However, the metaphor of civilization as superorganism is fascinating and adds to our understanding of the history and future of human civilization from a sociobiological perspective.

Another significant use of the superorganism metaphor was in *Metaman: The Merging of Humans and Machines into a Global Superorganism*, a book by the biophysicist, Gregory Stock (Stock, 1993). The book is an ebullient celebration of the merging of our humanity with the technology that has so rapidly pervaded every aspect of our lives. Through the integration of technology into our lives, and perhaps even our physical bodies, Stock foresees that we will transcend our dependence on the natural world.

Metaman is that part of humanity, its creations, and its activities that is interdependent—joined together by trade, communications, and travel. At this moment, the superorganism is primarily the world's industrialized countries and the urban areas in developing lands, but it is growing and spreading rapidly into the rural regions of the third world that are as yet peripheral to it. (Stock, 1993, p. 22)

Although the book is still intriguing two decades after its publication, and was in many ways prescient, Stock devotes only a page to the connections between the enormous evolutionary success of the sociobiologically-defined insect superorganisms and his own definition of the human/machine global superorganism. He fails to see that the success of

those biological superorganisms is dependent on a complex, symbiotic relationship with their environment. For example, he assumes that Metaman will be capable of mitigation or adaptation to the enormous challenge of potentially catastrophic climate change and all other aspects of the associated environmental crisis. For Stock, these pose a technological challenge that can be overcome through human ingenuity and the enormous resources provided by the integration of humanity and technology into the Metaman superorganism. But who is pulling the levers behind the screen of the Metaman wizard? Where does the power reside?

Stock only briefly mentions corporate power in over 200 pages on the new global superorganism. He dismisses the rights of nations to determine their own economic policy by saying that “Metaman’s development is not moving in that direction. Global competition will increasingly be between corporations and corporate alliances rather than nations” (1993, p. 98). He views this an inevitable and positive trend, yet the past few decades have made abundantly clear the failure of corporate power to take any meaningful action to combat climate change or the decimation of the biosphere through pollution and resource extraction. The guiding power of Metaman is not the human power of individuals who elect the leaders of their nations and democratically determine their own fate, but the corporate power that only has the goal of increased profit and infinite growth. Stock states that “Metaman’s technological capacity to move beyond fossil fuels is indisputable” (1993, p. 124), yet in the past few decades we have witnessed an orchestrated campaign by corporate power to deceive the public about the dangers of global warming and to accelerate the extraction of the maximum amount of fossil fuels for the maximum amount of profit. If Metaman is so intelligent and promises such a bright future, why is he propelling the biosphere over the cliff of extinction? The reason is profit. The metaphorical Metaman as a wise entity with a patina of inevitability is an illusion and a specious apology for the neoliberal policies that have decimated the biosphere, justified continual resource wars, and radically increased the gap between the mega-rich and desperately poor.

A few decades previous to the publication of *Metaman*, the first use of the metaphor of superorganism outside of the field of sociobiology was expressed by James Lovelock in his Gaia hypothesis (1979). Lovelock's idea, developed in the 1970s, was that the ecosphere as a whole is a self-regulating superorganism. In other words, the earth is a single living organism with positive feedback loops to maintain homeostasis. The Gaia hypothesis has been embraced by the environmental and "new age" communities as an expression of philosophical and spiritual truth, although it is controversial in the scientific community. Like the metaphor of civilization as superorganism, or *Metaman* as superorganism, the Gaia hypo-

thesis does not fit into our narrower definition based on sociobiology, but it is a fascinating and valuable metaphor for the biosphere, and may help to ensure that the planet will continue to support life.

6. The corporation as superorganism

The two most successful organizations on the planet have been insect societies and corporations. Insect superorganisms have been enormously successful, but they have achieved this success with minimal disruption to the ecosystem that supports them. In contrast, corporate superorganisms are destroying the ecosystem that supports them, and perhaps the ability of the earth to sustain human life. All superorganisms are organisms, and a biological definition of an organism includes the following (Kratz & Siegfried, 2010, Chapter 2):

- *An organism is made of cells that contain DNA.* A corporation can be interpreted to be similar in several ways. A corporation does not exist without humans to staff it. Those humans are made up of cells that contain DNA. In an organism, DNA is the plan for the structure of the organism. In corporations, the plan for the corporation is contained in two forms: the legal documents that structure the organization, and the understanding of those documents contained in the minds of the people in the corporation. The important point is this: the composition and plan for the composition of the corporation has a biological basis. It would not exist without DNA and human biology to ensure its continuation.
- *Living things maintain order inside their cells and bodies.* Corporations are constantly engaged in the task of maintaining order inside of themselves. A corporation that allowed any significant disorganization would cease to exist. Its very existence is defined by its organization.
- *Living things regulate their systems.* Corporations regulate their systems to maintain profitability. They raise and lower prices, stock up on supplies, hire productive employees, maintain their physical plants, relocate if it is advantageous, etc.
- *Living things respond to signals in the environment.* Corporations are continually engaged in market research, public relations, and advertising. They continually recreate their images and behavior in response to the marketplace.
- *Living things transfer energy among themselves and between themselves and their environment.* Corporations transfer energy to and from each other and the environment in the form of products and currency. The currency is symbolic of and redeemable for various forms of energy and raw materials.
- *Living things grow and develop.* Corporations are constantly growing by expanding their operations and by merging with or acquiring other corporations. Growth is symbolically represented by the accumulation of currency adding to the net value and power.

- *Living things reproduce.* Through reproduction, organisms enable the continued existence of their genome. Corporations do not have to reproduce because they are potentially immortal. Individual employees die, but the corporation lives on. Corporate reproduction is essentially continuous, and in a capitalist system, is dependent on continuous growth.
- *Living things have traits that evolved over time.* Corporations evolve over time. Because of competition, the most efficient and profitable corporations survive, and their competitors die. The most efficient corporate traits are copied by new corporations improving quality and creating continuous competition.

7. Organisms, insect superorganisms, and corporate superorganisms

Corporations fulfill all of the biological requirements and can be classified as organisms. The next section explores the parallel similarities and differences between organisms, insect superorganisms, and corporate superorganisms utilizing a table from *The Superorganism: The Beauty, Elegance, and Strangeness of Insect Societies* (Hölldobler, et al., 2009, p. 85) that compares the characteristics of organisms and superorganisms, and in addition, I will add a third category of corporations.

TABLE 1: CHARACTERISTICS OF ORGANISM, SUPERORGANISM AND CORPORATIONS

Organism	Superorganism	Corporation
Cells	Colony members	Employees, management, stockholders
Organs	Castes (workers, soldiers, queen, etc.)	Divisions
Gonads	Reproductive castes	Mergers, acquisitions, conglomeration
Somatic organs	Worker castes	Non-management employees
Immune system	Defensive caste; alarm-defense communication; colony recognition labels	Security; ID badges; employee corporate identity
Circulatory system	Food distribution, including regurgitation among nestmates, distribution of pheromones and chemical cues	Product shipment, supply deliveries, invoice payments, salaries, bonuses, stock dividends, etc.

Organism	Superorganism	Corporation
Sensory organs	Combined sensory apparatus of colony members	Combined senses of employees and management: market research
Nervous system	Communication and interaction among colony members	Communication and interaction among employees, management, and customers: e-mail, phone calls, memos, reports, conferences, etc.
Skin, skeleton	Nest	Legal documents detailing ownership, obligations, limitations, etc.
Organogenesis: growth and development of the embryo	Sociogenesis: growth and development of the colony	Legal incorporation followed by growth through profit, asset appreciation, and acquisition

Source: Based on Hölldobler, *et al.*, 2009, p. 85.

8. The corporate genome

An organism consists of a multitude of individual, differentiated cells working together to form one unified structure determined by a genetic code. A superorganism consists of a multitude of colony members working together to form one unified colony determined by a common genetic code. The primary function of the genetic code in an organism is to maximize the survival and replication of the individual, but in a superorganism the genetic code is designed to maximize the survival of the colony. The genetic code for an organism is self-contained; the genetic code for superorganisms is not self-contained, but depends on inclusion in a colony in which the other genetic codes are expressed.

Nothing in the brain of a worker ant represents a blueprint of the social order. There is no overseer or "brain caste" who carry such a master plan in its head. Instead, colony life is the product of self-organization. The superorganism exists in the separate programmed responses of the organisms that compose it. (Hölldobler, *et al.*, 2009, p. 7)

Corporations are superorganisms because their "genetic code" is also not contained in any one individual, but is determined by documents that are external to the physical bodies of

any of the members, and that are interpreted by the superorganism as a whole. Under these conditions, the individual members have no inalienable rights. Just as the worker ant cannot demand a raise and the honeybee queen cannot abstain from reproducing, the employee or manager of a corporation is equally constrained by the genetic coding of the corporation.

It is far from an incidental consideration that in its internal governance structures, the corporation is among the most authoritarian of organizations and can be as repressive as any totalitarian state. Those who work for corporations spend the better portion of their waking hours living under a form of authoritarian rule that dictates their dress, their speech, their values, their behavior, and their levels of income—with limited opportunity for appeal. With few exceptions, their subject employees can be dismissed without recourse on almost momentary notice. (Korten, 1995, pp. 221-222)

This imposition of authoritarian conformity is a dehumanizing but profitable strategy employed by corporations. When seen from the perspective of a humanist or political progressive, it is morally reprehensible, but when seen from the perspective of a sociobiologist, it is as an evolutionary advantage. The second perspective is more useful because it recognizes the true nature of corporations. We can still view the strategy as reprehensible, but understanding its purpose within the superorganism may help us to imagine an alternative.

9. Corporate eusociality

Another of the primary distinguishing characteristics of superorganisms is eusociality, which is genetically determined division of labor. The most extreme examples of this are superorganisms in which reproduction is carried out by one caste or individual, while care of the progeny is carried out by another caste.

Eusociality, the care of the offspring of a reproductive caste by worker caste, is the most advanced level of social life in the insects. Although rare in evolution, the condition once attained has often been spectacularly successful... Why has eusociality been so successful? The well-documented answer is that organized groups beat solitaires in competition for resources, and large, organized groups beat smaller ones of the same species. Then why has eusociality been so rare? The answer is that it requires nondescendent altruism, which is

behavior benefiting others at the cost of the lifetime production of offspring by the altruist. (Hölldobler, *et al.*, 2009, pp. 29-30)

The evolutionary origin and success of the corporation can also be traced to the division of labor. In his book *Corporate Hegemony*, William Dugger describes the theory of Thorstein Veblen, a late 19th–early 20th century American sociologist and economist who was noted for his Darwinian evolutionary approach to the history of corporations.

Veblen's historical account of the emergence of corporate power may be summarized as follows. From the handicraft era to the ascendancy of the captain of finance in the era of machine technology, the split between business and industry steadily widened as economic technological imperatives produced an increasing division of labor. (Dugger, 1989, p. 112)

The modern corporation is built on an extreme division of labor. CEO salaries are usually hundreds of times the salary of workers. CEOs can live in penthouses in Manhattan and spend the summer in their beach house in the Hampton's, while workers live in crowded dormitories in Chinese industrial cities. Managerial work can consist entirely of speaking and writing words and numbers, while the workers can work sixteen hours a day doing monotonous, backbreaking physical labor. Wealthy investors can do absolutely nothing except call their stockbrokers and still earn billions. But from an evolutionary perspective, this extreme division of labor has been an immensely successful strategy for superorganisms. One of the key elements of corporate success has been the dehumanizing strategy of extreme division of labor. We may wish for more kinder, gentler approaches to human labor, but we must understand that in cutthroat corporate competition, human laborers are expendable. Society demands the prosperity and cheap goods that are the result of corporate superorganisms utilizing whatever strategies are most profitable.

10. Corporate reproduction and adaptability

Organisms attempt to ensure the immortal survival of their own genetic code through reproduction, a necessary response to the inevitability of biological death. Reproduction can be sexual or asexual and produce a combination of the genetic material of two parents, or an exact copy of the genetic material of one parent. Reproduction in insect superorganisms is more complicated. A queen or a separate caste of reproductive workers is responsible for producing progeny and ensuring the survival of the genetic code of the superorganism as a whole. However, reproduction in corporations is not necessary, because existing corpora-

tions can be immortal, and new corporations can be born by simply filing legal papers for incorporation. Variations on what we think of as reproduction are often evolutionarily advantageous.

Corporations can even reproduce themselves by spinning off wholly owned subsidiaries, a mode of asexual reproduction, or by forming joint ventures of several kinds, a mode of sexual reproduction. Contemporary corporations call sex “merging.” Offspring often result from these unions through divestiture. The offspring are often cared for by specialized corporate nannies called holding companies. A voluntary encounter between two amorous corporations is a friendly takeover, while an involuntary encounter (yes, corporations can rape and be raped) is called a hostile takeover. (Dugger, 1989, pp. 10-11)

Organisms are normally limited in their location of habitation and range by environmental factors. Insect superorganisms are even more limited because they are required to live within physical proximity of one another. Corporations, however, are not limited in their location of habitation or range. They are extremely adaptable to a wide variety of environmental circumstances and are not tied to any one particular location. Insect superorganisms, like all organisms, have genetically evolved adaptations to inhabit and exploit various specific environmental niches. In contrast, corporations are not limited by random mutations, but can write their own “genetic code,” and hence are almost infinitely adaptable, an ability that makes them so pervasive and powerful. In Hannan and Freeman's book, *Organizational Ecology*, they make the point that not only is an organization's adaptability to the existing environment an important advantage, but also the ability to alter the environment to suit its needs is a crucial advantage.

All adaptation theories agree the largest, oldest and most powerful organizations have superior capacities for adapting to environmental circumstances. Size and power enable organizations to create specialized units to deal with emerging environmental problems. More importantly, these characteristics convey a capacity to intercede in the environment and to forestall or direct change. (Hannan & Freeman, 1989, p. 12)

The location of habitation and range is related to the ecological concept of niche. Organisms and superorganisms inhabit niches within the environment that match their genetic predispositions. The niche provides them with a source of energy that they are able to exploit with maximum efficiency and minimum competition. Corporations have the capability to inhabit

and exploit widely varying niches. This advantage is due to their extreme adaptability and size.

Corporations have gained major economic powers through conglomeration. But their most significant power is a product of their sheer size. Unlike the rest of us, the corporate giants do not have to take the world the way they find it. They have become so large, they can change the rules of the game. Their size has given them the clout to force government to write new laws or waive existing laws, alter tax schedules, impose trade restrictions, and guarantee loans. Because they are so enormous, they can organize PACS (Political Action Committees) all over the country. Because they are so enormous, they can give money to bolster political candidates running for the same office; so no matter who wins, you lose. Because they are so enormous, they can mobilize national campaigns against allegedly unfair foreign competition in their bailiwick. And because they are so enormous, when they claim that they will have to close their plants and lay off their workers unless they get what they want, politicians listen. Because they are so enormous, they are creating a new dispensation. (Dugger, 1989, pp. 24-25)

11. Corporate consumption

All organisms must have a source of energy; they have to consume something. Plants consume sunlight in combination with water and soil. Animals consume sunlight by eating plants, or by eating other animals that have eaten plants. Insect superorganisms, like humans, sometimes cultivate crops or raise livestock to supply their food. One of the most fascinating and significant parallels between humans and insect superorganisms is the use of agriculture to provide a source of energy.

Both human civilization and the evolution of extreme insect superorganisms were attained by agriculture, a form of mutualistic symbiosis of animals with plants or fungi. Human agriculture, which originated about 10,000 years ago, was a major cultural transition that catapulted our species from a hunter-gatherer lifestyle to a technological and increasingly urban existence, accompanied by an enormous expansion of population. Humanity thereby turned itself into a geophysical force and began to alter the environment of the entire planetary surface. Approximately 50 to 60,000,000 years before this momentous shift, some social insects had already made the evolutionary transition from a hunter-gatherer existence to agriculture... The most advanced agricultural insect societies, like their human counterparts, rose to ecological dominance. (Hölldobler, *et al.*, 2009, p. 408)

But what do corporate superorganisms consume? What is their primary source of energy? Here it may be useful to look at the historical growth of corporations which began in earnest in the second half of the 19th century and has continued unabated to the present day. Corporate growth has paralleled technological growth, but technological growth is the result of unparalleled concentration of capital enabling research and innovation. Corporations can't feed on technology; they need energy to utilize the technology to produce goods to gain profits. That energy has been provided by the increasing availability and utilization of fossil fuels. First coal and then oil and natural gas have become increasingly available and utilizable since the second half of the 19th century. The increasing production of these fuels has paralleled and enabled the growth of corporations. It is a basic ecological principle that a species will expand in population to match the available food supply. If there is an abundance of grass, there will be more antelope, if there are more antelope, there will be more lions. The same holds true for the corporate superorganism. Industry requires a concentrated and easily transportable form of fuel to power its machinery. Railroads didn't become common until coal and the technology to burn it was easily available. Cars and airplanes only became common after oil and then gasoline became easily available. Advanced technological tools like computers can only be manufactured with a consistent supply of high-powered electricity generated by the burning of fossil fuels. To put it in simple terms, the corporate superorganism eats fossil fuels for breakfast, lunch, and dinner. The accumulated energy harvested from millions of years of buried, dead organisms feeds its voracious appetite. Corporate superorganisms are extremely adaptable, but they can't exist without an ever-increasing supply of high-quality fuel in order to meet the demands of an infinite growth economy.

Corporations borrow money to invest in activity that will generate profit. The corporation has to pay interest on the money, so profits must exceed interest or the stockholders will sell their stock and the corporation will die. This creates the necessity for constant growth. The economic pundits and politicians talk continuously about how we need to grow the economy. But it doesn't take much common sense to understand that infinite growth is an impossibility in a finite biosphere. The irrational belief in the possibility of infinite growth has to a large extent been created by the steadily increasing supply of low-cost concentrated carbon-based fuel beginning with the Industrial Revolution and continuing to the present day. However, the available supply of easily accessible carbon-based fuel on the planet has arguably peaked and begun to decrease. The supply of fuel in the ground is finite. That seems obvious, but its implications are enormous for the continued existence of corporate superorganisms, and have been largely ignored. I have focused on the supply of

fossil fuel, but this is not the only resource that corporations consume. Corporate superorganisms digest copper, iron, diamonds, water, soil nutrients, human labor, and perhaps more significant than all of the others, the oxygen in the air. Consumption of oxygen through the burning of fossil fuels and the resulting release of carbon dioxide into the atmosphere is inflicting devastating and irrevocable damage on the earth's atmosphere.

12. Cyborgs at the bus stop

One would imagine that a generation of university students aware of the damage to their future inflicted by the Corporate Borg would be up in arms demanding radical change to the existing status quo. In recent years there have been some indications of a rising awareness and activism among what has been termed the Millennial generation (those born in the eighties and nineties) that have become evident in movements like Occupy Wall Street and the Bernie Sanders presidential campaign. Yet considering that this generation has overtaken the Baby Boomers (those born from the mid-forties to mid-sixties) as the largest generation in the American population (Fry, 2016), and considering the enormous consequences at stake if corporate power is allowed to continue unchecked, one would hope for and expect a more vociferous outcry from a multitude of idealistic and outraged students against the decimation of their future. Why has this not been the case?

Drive slowly by a bus stop at any American university campus in the year 2016 and you will see the same sight, a horde of students huddled over their iPhones or Androids. They are not talking to each other. They are not reading books, or looking up at the trees, or checking out potential mates, but are linked into the hive mind through the Internet. Their consciousness has extended far beyond their physical surroundings and is now interwoven with the consciousness of millions of others in cyberspace. Should we imagine this to be a form of consciousness expansion and liberation from the confines of the physical body? Should we perceive it as a form of corporate control? Or is it just the result of accelerating technological development with massive unintended social consequences right at a crucial moment in time demanding more and not less social awareness and action.

One thing is abundantly clear – we have created a generation of cyborgs. The concept of cyborg, a biological human whose body has been augmented by technological additions, has been a recurrent theme in science fiction. One of the most popular depictions has been the assimilation by the Borg of humanoid alien races through the injection of microscopic nanoprobes and the surgical addition of ocular laser implants and prosthetic arms. What makes the Borg cyborgs so frightening is not the invasiveness of grafted non-human body parts,

but the relentless, unfeeling, and amoral way in they fulfill their roles. In many other sci-fi imaginary worlds, cyborgs have existed in various combinations of biological, mechanical, and cybernetic enhancements. Modern medical science has made possible many of these fictional procedures that would have been thought impossible just decades ago, but the vast majority of the population have yet to be surgically enhanced. Instead, the creation of cyborgs has taken another more efficient and less invasive path through technological devices that are not implanted, yet always remain in contact or proximity.

The smartphone has become a new appendage attached to the bodies of our youth. Of course the attachment is not literal, but witness the panic that ensues when a Millennial loses their smartphone and it's easy to perceive the psychological and emotional attachment as something very real and almost physical. It is not surprising that the two most popular smartphones are called iPhones and Androids. The identity of the students who carry them everywhere has merged with that technological portal into cyberspace. In sci-fi, cyborgs are sometimes independent superheroes driven by moral forces to save humanity from some evil threat, but more often they are the tools of evil forces who use their cyborg enhancements to gain power. A classic example was Arnold Schwarzenegger as the Terminator, a cyborg assassin sent back through time to change the course of history and insure the dominance of the artificial intelligence entity, Skynet. But what about those cyborg students at the bus stop? Is their almost continual connection to the Internet enhancing and extending their personal power, or are they all being hypnotized while their tiny screens suck their souls into corporate cyberspace?

Corporations love cyborgs. Since the advent of mass production and the assembly line, robots have often proven more efficient and compliant than human workers. They don't require a salary or an insurance plan, and management doesn't have to worry that they will organize a union and demand better working conditions or a share of the profits. But still many tasks require the advanced complexity of the human brain and the supple adaptability of the human body. Technological advances have not yet replaced the surgeon, the architect, the artist, or the manager with robotic machines. Humans are still required, but the humans should preferably not have thoughts or emotions of their own, unless they contribute to the maximization of corporate profits. Cyborgs are the solution.

What if corporate superorganisms could control the minds of future workers by addicting them to their smartphones and controlling the content? This is where it gets confusing, because the Internet is still like the Wild West, no one has complete control. That potential exists, but has yet to be implemented. The immersion of the Millennial generation in cyberspace has been a force that has expanded their consciousness into new, previously

unknown realms, but simultaneously, corporate ownership of the medium and control over content has indoctrinated them with the message of conformity and compliance. But more importantly than the content is the medium itself. In the phrase that Marshall McLuhan made famous many years before the existence of smartphones or the Internet, “The medium is the message” (McLuhan, 1964). What may be the most salient feature of this ubiquitous technology is not the content, but its constant distraction and disembodiment. The ability to think independently, to have thoughts of one’s own, may be drowned out in the waves of constant, disconnected input. Much recent research has explored the idea that the medium of screen technology is not only distracting but actually physiologically addictive (Hilarie, Cosette, Ann, & Alexander 2012). In addition, Sherry Turkle, Professor of the Social Studies of Science and Technology at MIT, recently published *Alone Together: Why We Expect More from Technology and Less from Each Other*, in which she summarizes research showing that our constant engagement in artificial, non-physical interactions in cyberspace is decreasing our capacity for empathy (Turkle, 2011). Empathy is the enemy of profit. Independent thought that doesn’t serve the bottom line is the enemy of profit. It is in the interest of the corporate superorganism to train and hire cyborgs who don’t empathize and don’t think for themselves.

13. Conclusion

In the future universe of the Star Trek Federation, the Borg are the most feared of all the enemies, yet they are neither good nor evil. They exist beyond any conception of human morality for they only follow the prime directive of every species, to propagate their genome. Their hyper-efficient superorganism organization makes them almost invincible. Through the many incarnations of Star Trek, a recurring theme is the foreshadowing of the ultimate triumph of the Borg over the Federation alliance of humanoid species. Is this a prophetic foreshadowing of our own fate? Like the Borg, the corporation as superorganism is not evil. We don't call a mountain lion evil when it sinks its teeth into the neck of a deer. Species expand their population to match the available food supply. Planet Earth has been blessed and cursed by the extraordinary inheritance of a colossal supply of energy lying just below the surface. Until the advent of the Industrial Revolution, there was no species on earth capable of fully exploiting that energy supply. The discovery of that supply, and the rapid advances in technology that made possible its use as fuel for the energy-hungry wonders of the modern world, also fed the exponential growth and reproduction of the superorganism we call the corporation. We like to believe that humans are the most powerful species on the planet, but this is an illusion, for the corporate superorganism is

now the most powerful species on the planet. Perhaps by more fully understanding its rampant success through the lens of sociobiology, we will be able to imagine ways to undermine its dominance and apparent invincibility.

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