State of the Planet — EarthDanger.Wordpress.com – January 2019

At no time in the history of the planet have we faced so many challenges, threats, issues, destruction, all man-made, to the future of the planet. The purpose of this site is to highlight these concerns. This is a non-political, non-partisan, non-religious and non-ideological effort with no agenda, simply to reveal the facts and truths of the State of the Planet, as they are today.

We spend our entire lifetimes getting and spending and exploiting the Planet's resources, without any care and without restoring and preserving the resources that we use for a sustainable future. Education systems and practices are built to fully exploit the Earth's resources with utter disrespect and disdain for nature and animals, the proof is everywhere, a simple example is species extinction.

What is wrong with the World today, what are we doing wrong? How are we destroying the Planet all in the name of progress and modernization?

“We are but transient passengers on this planet Earth. It does not belong to us. We are not free to doom generations yet unborn. We are not at liberty to erase humanity’s past or dim its future. Social systems do not endure for eternity. Only life can lay claim to uninterrupted continuity. This continuity is sacred.”

The purpose of the website is to raise global awareness of how we are collectively destroying the Planet. My plan is to contact educational authorities around the world and propose that they add the topics on the website to their high school curriculums so that school children become aware of the situation at an early age.

What is the purpose of Life? is it only about getting and spending? about materialism and shopping? is it about the traditional markers of success, like salary, status and security? or is it the realization that making a living does not always equate to making a life.

For most of human history, the word “technology” has been identified with progress. An ax made of metal instead of stone makes life easier and better, just like refrigeration or the power steering. It’s only in the past few decades that the scientific and industrial processes we’ve invented have created so much progress that it’s sometimes too much. All of the advancement has created a social construct that is, for the first time, seen negatively. And so instead of basking in the modern world, we yearn to unplug and disconnect. People and companies have been manufacturing all sorts of products mostly for profit without thinking about the implications for the health of people or the health of the planet, one product that comes to mind is plastics. After 60 years of inventions and manufacturing all in the name of progress, the devastating effects are everywhere threatening our very existence on the planet.

Making a life also requires one to focus on the Art of Living, on loving relationships, emotional intelligence, a sense of meaning and purpose and living in harmony with all of God's creations for a sustainable future including protecting and nurturing Mother Earth.

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A. Nature and Mankind's Harm to Nature and the Planet

1. Exposed Permafrost Layer

1. Permafrost, ground that remains at or below zero degrees Celsius for two or more years, underlies about a fifth of the land surface of the Earth.
2. Melting permafrost in the Arctic is unlocking diseases and warping the landscape
3. Permafrost has been frozen for millennia. Thawing it is a huge disruption.
4. You can find evidence of a changing climate everywhere, but nowhere are the changes more dramatic than in the Arctic.
5. Our world’s northern polar region is warming twice as fast as the global average.
6. On average, Arctic sea ice extent is shrinking every summer. The Greenland ice sheet is becoming unstable, the biggest threat is the release of carbon and methane.
7. But perhaps most disturbing are the changes occurring underground in the permafrost. Permafrost is a layer of frozen soil that covers 25 percent of the Northern Hemisphere. It acts like a giant freezer, keeping microbes, carbon, poisonous mercury, and soil locked in place.
8. Now it’s melting. And things are getting weird and creepy: The ground warps, folds, and caves. Long-dormant microbes — some trapped in the ice for tens of thousands of years — are beginning to wake up, releasing equally ancient C02, and could potentially come to infect humans with deadly diseases.
9. And the retreating ice is exposing frozen plants that haven’t seen the sun in 45,000 years, as new radiocarbon dating research suggests.
10. In the 1980s, the temperature of permafrost in Alaska, Russia and other Arctic regions averaged to be almost 18°F, now the average is just over 28°F.

2. Melting Ice Caps

1. The melting of the polar ice caps is caused by the overall increase in global temperature, and this melting can have serious consequences for all organisms on Earth. As the polar ice caps melt, sea levels rise and the oceans become less saline.
2. If we keep burning fossil fuels indefinitely, global warming will eventually melt all the ice at the poles and on mountaintops, raising sea level by 216 feet.
3. Icebergs are chunks of frozen glaciers that break off from landmasses and fall into the ocean.
4. Rising temperature may be causing more icebergs to form by weakening the glaciers, causing more cracks and making ice more likely to break off. As soon as the ice falls into the ocean, the ocean rises a little.
5. The largest ice covered landmass is Antarctica at the South Pole, with about 90 percent of the world's ice (and 70 percent of its fresh water).
6. Antarctica is covered with ice an average of 2,133 meters (7,000 feet) thick. If all of the Antarctic ice melted, sea levels around the world would rise about 61 meters (200 feet).
7. At the northern most end of the world, the North Pole, the ice is not nearly as thick as at the South Pole. The ice floats on the Arctic Ocean.
8. There is a significant amount of ice covering Greenland, which would add another 7 meters (20 feet) to the oceans if it melted. Because Greenland is closer to the equator than Antarctica, the temperatures there are higher, so the ice is more likely to melt.
9. But there might be a less dramatic reason than polar ice melting for the higher ocean level — the higher temperature of the water. Water is most dense at 4 degrees Celsius. Above and below this temperature, the density of water decreases (the same weight of water occupies a bigger space). So as the overall temperature of the water increases it naturally expands a little bit making the oceans rise.

3. Species Extinction

1. In biology and ecology, extinction is the termination of an organism or of a group of organisms (taxon), normally a species. The moment of extinction is generally considered to be the death of the last individual of the species, although the capacity to breed and recover may have been lost before this point.
2. More than 99 percent of all species, amounting to over five billion species, that ever lived on Earth are estimated to be extinct.
3. A dagger symbol (†) placed next to the name of a species or other taxon is often done to indicate its status as extinct.
4. It's frightening but true: Our planet is now in the midst of its sixth mass extinction of plants and animals — the sixth wave of extinctions in the past half-billion years.
5. We're currently experiencing the worst spate of species die-offs since the loss of the dinosaurs 65 million years ago.
6. Unlike past mass extinctions, caused by events like asteroid strikes, volcanic eruptions, and natural climate shifts, the current crisis is almost entirely caused by us — humans.
7. In fact, 99 percent of currently threatened species are at risk from human activities, primarily those driving habitat loss, introduction of exotic species, and global warming.
8. Because the rate of change in our biosphere is increasing, and because every species' extinction potentially leads to the extinction of others bound to that species in a complex ecological web, numbers of extinctions are likely to snowball in the coming decades as ecosystems unravel.
9. Species diversity ensures ecosystem resilience, giving ecological communities the scope they need to withstand stress.
10. In the past 500 years, we know of approximately 1,000 species that have gone extinct, from the woodland bison of West Virginia and Arizona's Merriam's elk to the Rocky Mountain grasshopper, passenger pigeon and Puerto Rico's Culebra parrot — but this doesn't account for thousands of species that disappeared before scientists had a chance to describe them.
11. What's clear is that many thousands of species are at risk of disappearing forever in the coming decades.
12. No group of animals has a higher rate of endangerment than amphibians. Frogs, toads, and salamanders are disappearing because of habitat loss, water and air pollution, climate change, ultraviolet light exposure, introduced exotic species, and disease.

4. Threatened Wilderness

1. Many of the issues and threats to our public lands come from those who would seek to develop our wild places, rather than save it for a sustainable life for the future and our children.
2. These threats range from unchecked development to drilling in wild and natural places.
3. Developers already have access to more than 75 percent of our national forests and lands managed by the Bureau of Land Management. But some developers, and some in Congress, want even more access to our nation's wildest places.
4. While there is a place for development on some public land, there are some places that are too wild to be developed, and must be protected for our children and grandchildren.
5. Our last wild places and open do so much for the environment, for wildlife and for the communities around them that get clean water and jobs from our growing recreation economy.
6. The oil industry, for example, has access to most of our public land. The industry leases tens of millions of acres of public land where they can look for oil, and thousands of permits to drill on our public lands. Drilling on public land can have a serious impact on the land and the surrounding environment, including pollution and a negative effect on wildlife.
7. The world's last great wildernesses are shrinking at an alarming rate. In the past two decades, 10% of the earth's wilderness has been lost due to human pressure.
8. Over the course of human history, there has been a major degradation of 52% of the earth's ecosystems, while the remaining 48% is being increasingly eroded. "If this rate continues, we will have lost all wilderness within the next 50 years."
9. This wilderness degradation is endangering biodiversity, as well as the water cycle, the nitrogen cycle and pollination. Once they have been damaged or cleared, the wildernesses are gone for good; there is no scientific evidence that degraded eco-systems could ever return to their original condition.
10. They are being encroached on by logging, oil and gas exploration, mining, roads, urbanization and agriculture.
11. The environment footprint of humanity is truly massive, no other species has ever come close to us in terms of consuming and damaging so much of the world's energy, resources and land area.

5. Climate Change - Global Warming

1. Global warming, also referred to as climate change, is the observed century-scale rise in the average temperature of the Earth's climate system and its related effects. Multiple lines of scientific evidence show that the climate system is warming
2. Global warming is just one aspect of climate change. "Global warming" refers to the rise in global temperatures due mainly to the increasing concentrations of greenhouse gases in the atmosphere. "Climate change" refers to the increasing changes in the measures of climate over a long period of time – including precipitation, temperature, and wind patterns.
3. The current warming trend is of particular significance because most of it is extremely likely (greater than 95 percent probability) to be the result of human activity since the mid-20th century and proceeding at a rate that is unprecedented over decades to millennia.1
4. Earth-orbiting satellites and other technological advances have enabled scientists to see the big picture, collecting many different types of information about our planet and its climate on a global scale.
5. Ice cores drawn from Greenland, Antarctica, and tropical mountain glaciers show that the Earth's climate responds to changes in greenhouse gas levels. Ancient evidence can also be found in tree rings, ocean sediments, coral reefs, and layers of sedimentary rocks. This ancient, or paleoclimate, evidence reveals that current warming is occurring roughly ten times faster than the average rate of ice-age-recovery warming.
6. The planet's average surface temperature has risen about 2.0 degrees Fahrenheit (1.1 degrees Celsius) since the late 19th century.
7. The oceans have absorbed much of this increased heat, with the top 700 meters (about 2,300 feet) of ocean showing warming of 0.302 degrees Fahrenheit since 1969.
8. The Greenland and Antarctic ice sheets have decreased in mass.
9. Glaciers are retreating almost everywhere around the world — including in the Alps, Himalayas, Andes, Rockies, Alaska and Africa.
10. Satellite observations reveal that the amount of spring snow cover in the Northern Hemisphere has decreased over the past five decades and that the snow is melting earlier.
11. Global sea level rose about 8 inches in the last century. The rate in the last two decades, however, is nearly double that of the last century.
12. Both the extent and thickness of Arctic sea ice has declined rapidly over the last several decades.
13. Since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30 percent.

6. Pollution in Waterways

1. Pesticides, fertilizers, and animal waste from the agriculture industry are contaminating our lakes, waterways, and oceans. We're also dumping over 180 million tons of toxic chemicals and other pollutants from industrial and mining practices into the world's lakes, rivers, and oceans every year.

2. Rain washes fertilizers, pesticides, and contaminated soil into rivers and streams, where it creates excessive amounts of nitrogen and phosphorous in the water. This excess of nutrients stimulates the growth of plants in lakes, taking up additional oxygen from the water and eventually killing organisms, insects and other aquatic life.

3. Pollution due to excess nutrients in freshwater or saltwater also results in algal blooms, which is a thick sludge or discoloring that covers the surface of a body of water. These toxic blooms pose a threat by depriving the water of oxygen, which is essential to the survival of aquatic species.

4. A lack of sufficient oxygen kills off aquatic life and plants, resulting in dead zones and threatening the survival of the ecosystem. Land animals, birds, and humans can also be harmed by the contaminated water, or by consuming fish or shellfish that lived in contaminated water.

5. Animal waste from factory farming contributes to water pollution when the large, open-air lagoons that house wastewater from the farms leak and contaminate local water supplies, or when runoff from the farms makes its way into nearby lakes and waterways.

6. Animal waste from factory farms also contains hormones which, when introduced into water systems, can cause reproductive problems in fish.

7. As technology improves, scientists are able to detect more pollutants, and at smaller concentrations, in Earth's freshwater bodies. Containing traces of contaminants ranging from birth control pills and sunscreen to pesticides and petroleum, our planet's lakes, rivers, streams, and groundwater are often a chemical cocktail.

8. Beyond synthetic pollution, freshwater is also the end point for biological waste, in the form of human sewage, animal excrement, and rainwater runoff flavored by nutrient-rich fertilizers from yards and farms.

9. Types of Water Pollution - a toxic substance is a chemical pollutant that is not a naturally occurring substance in aquatic ecosystems. The greatest contributors to toxic pollution are herbicides, pesticides and industrial compounds. Organic pollution occurs when an excess of organic matter, such as manure or sewage, enters the water. When organic matter increases in a pond, the number of decomposers will increase.

7. Animal Cruelty, Factory Farming

1. Do animals have souls? Yes, every living being, from the animals down to the insects and tiny organisms, possesses souls. Like humans, they are also beings subject to the laws of Nature and the cycle of births and deaths. We may consider them ignorant, but they have their own language and intelligence. They also perform an important duty in creation and occupy an important place in the manifestation and evolution of life in fact, humans exist on a continuum with the rest of life and that we are not completely separated from other animals. Animals have their own life, their own interests and their own ability to feel pain – we should therefore not harm them or kill them.
2. Female animals suffer some of the worst cruelty inflicted by humans. To animal industries, the ability to have babies is a valuable commodity. As a result, mothers of many species suffer physical and psychological stress that few of us can imagine.
3. For many female animals, her own body, and with it most of her freedoms, are taken from her the moment she's born. In industries that trade lives for profit, all animals suffer. But because only females can reproduce, the suffering they experience is often uniquely cruel.
4. The good news is that while she isn't given the freedom to choose her fate or the fate of her body, we can. Every day, we have the power to make a profound difference in the lives of these animals with the choices we make in our own lives.
5. For a mother, there is no greater fear than to lose a child. For dairy cows, this nightmare is a reality, repeated year on year. To keep them producing milk, farmers forcibly impregnate female cows yearly, often involving inserting an arm inside her during insemination. Then, within days of her calf being born, her baby is taken from her, so that the milk she is producing can be bottled for human consumption.
6. Cows can be seen chasing after their calves and both mother and calf can be heard calling out for one another as they're separated. Newborn males, called 'bobbies', will usually be sent to slaughter within a few days. For a female calf … her future is likely in the same system of cruelty as her mother, valued only for the milk she can produce.
7. Cows are sensitive and social animals. Mother and calf form a strong bond from the moment her baby is born. You can spare mother cows from the cycle of being impregnated and having their baby taken from them, by choosing dairy-free milks, cheeses, ice cream and yoghurt.
8. Dogs – In her lifetime, she will give birth to many litters of pups. Her puppies will go on to live in homes where their days will be filled with long walks, belly rubs, squeaky toys and treats. But she will never know love.
9. Treated as nothing more than puppy breeding machines, dogs in puppy factories live in conditions that would shock dog lovers. Investigations have found animals living in filthy wire-fenced cells, with no access to the outdoors and nothing to lie on except a wooden crate or concrete floor. Dogs have earned the title of "man's best friend" because of their affectionate and loyal nature. But these dogs are deprived of the very thing they crave the most — love.
10. Chickens – Hens – Because it is only hens who can lay eggs, every single chicken trapped in a cage is female. She can't stretch her wings, she doesn't get to feel the sun's warmth, she'll never get to fulfil her natural desires to dust bathe or lay her eggs in private. She has all her freedoms taken from her, so that the egg industry can make a bigger profit on her eggs.
11. Ever wondered what happens to all the roosters? When a new flock of chickens are hatched for egg production, the girls are sorted from the boys on their first day of life. Since roosters can't lay eggs, they have no value to the egg industry. Still chirping, and trying to stand, newborn male chicks are thrown into giant grinding machines or gassed to death. This happens in all egg production systems — cage, barn, free range and organic.
12. Prawns-Shrimp – Even prawns in prawn farms have their bodies harmed to force them to reproduce. Female prawns have a hormonal gland behind their eye that regulates when they breed. Rather than provide the right conditions and wait for her to breed naturally, prawn farmers destroy this gland by cutting off her eye, usually with a pair of

heated forceps. This traumatic procedure forces female prawns to reproduce more quickly — all so that prawn farms can maximise their profits. Prawns who have their eye cut off become disoriented and can be seen rubbing the wound for relief. No animal deserves this.

13. Pigs – Like dairy cows and breeding dogs in puppy factories, female pigs in the food industry are repeatedly impregnated — their bodies and their piglets used for the profit of humans. Pregnant female pigs in factory farms are forced to give birth in ‘farrowing crates’, which are essentially a metal cage too small for her to even turn around. Her piglets are born into a world devoid of any of the comforts a new mother craves for herself and her young. The crate provides enough room for them to suckle from her as she lays there, but little else.

8. Deforestation

1. Deforestation, clearance, or clearing is the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use. Examples of deforestation include conversion of forestland to farms, ranches, or urban use. The most concentrated deforestation occurs in tropical rainforests.
2. Deforestation is clearing Earth's forests on a massive scale, often resulting in damage to the quality of the land. Forests still cover about 30 percent of the world's land area, but swaths half the size of England are lost each year.
3. The world's rain forests could completely vanish in a hundred years at the current rate of deforestation.
4. The biggest driver of deforestation is agriculture. Farmers cut forests to provide more room for planting crops or grazing livestock. Often, small farmers will clear a few acres by cutting down trees and burning them in a process known as slash and burn agriculture.
5. Logging operations, which provide the world's wood and paper products, also cut countless trees each year. Loggers, some of them acting illegally, also build roads to access more and more remote forests—which leads to further deforestation.
6. Forests are also cut as a result of growing urban sprawl as land is developed for dwellings.
7. Forests cover 31% of the land area on our planet. They produce vital oxygen and provide homes for people and wildlife. Many of the world's most threatened and endangered animals live in forests, and 1.6 billion people rely on benefits forests offer, including food, fresh water, clothing, traditional medicine and shelter.
8. Forests play a critical role in mitigating climate change because they act as a carbon sink—soaking up carbon dioxide that would otherwise be free in the atmosphere and contribute to ongoing changes in climate patterns. Deforestation undermines this important carbon sink function. It is estimated that 15% of all greenhouse gas emissions are the result of deforestation.
9. Deforestation is a particular concern in tropical rainforests because these forests are home to much of the world's biodiversity. For example, in the Amazon around 17% of the forest has been lost in the last 50 years, mostly due to forest conversion for cattle ranching..
10. Deforestation can have a negative impact on the environment. The most dramatic impact is a loss of habitat for millions of species. Eighty percent of Earth's land animals and plants live in forests, and many cannot survive the deforestation that destroys their homes.
11. Deforestation also drives climate change. Forest soils are moist, but without protection from sun-blocking tree cover, they quickly dry out. Trees also help perpetuate the water cycle by returning water vapor to the atmosphere. Without trees to fill these roles, many former forest lands can quickly become barren deserts.

9. Ozone Layer Depletion

1. The Earth's ozone layer is mainly found in the lower portion of the stratosphere from approximately 20 to 30 km (12 to 19 mi).
2. Ozone depletion describes two related phenomena observed since the late 1970s: a steady decline of about four percent in the total amount of ozone in Earth's stratosphere (the ozone layer), and a much larger springtime decrease in stratospheric ozone around Earth's polar regions. The latter phenomenon is referred to as the ozone hole. There are also springtime polar tropospheric ozone depletion events in addition to these stratospheric phenomena.
3. The main cause of ozone depletion and the ozone hole is man-made chemicals, especially man-made halocarbon refrigerants, solvents, propellants, and foam-blowing agents (chlorofluorocarbon (CFCs), HCFCs, halons), referred to as ozone-depleting substances (ODS).
4. These compounds are transported into the stratosphere by the winds after being emitted at the surface. Once in the stratosphere, they release halogen atoms through photodissociation, which catalyze the breakdown of ozone (O3) into oxygen (O2). Both types of ozone depletion were observed to increase as emissions of halocarbons increased.
5. Ozone depletion and the ozone hole have generated worldwide concern over increased cancer risks and other negative effects. The ozone layer prevents most harmful UVB wavelengths of ultraviolet light (UV light) from passing through the Earth's atmosphere. These wavelengths cause skin cancer, sunburn, and cataracts, which were projected to increase dramatically as a result of thinning ozone, as well as harming plants and animals.
6. These concerns led to the adoption of the Montreal Protocol in 1987, which bans the production of CFCs, halons, and other ozone-depleting chemicals.
7. Ozone layer depletion is one of the most serious problems faced by our planet earth. It is also one of the prime reasons which are leading to global warming.
8. Ozone is a colourless gas which is found in the stratosphere of our upper atmosphere. The layer of ozone gas is what which protects us from the harmful ultraviolet radiations of the sun. The ozone layer absorbs these harmful radiations and thus prevents these rays from entering the earth's atmosphere.
9. Ultraviolet radiations are high energy electromagnetic waves emitted by the sun which if enters the earth's atmosphere can lead to various environmental issues including global warming, and also a number of health related issues for all living organisms. Thanks to the ozone layer which protects us from these harmful rays.

10. Air Pollution

1. Air pollution can be defined as the presence of toxic chemicals or compounds (including those of biological origin) in the air, at levels that pose a health risk. In an even broader sense, air pollution means the presence of chemicals or compounds in the air which are usually not present and which lower the quality of the air or cause detrimental changes to the quality of life (such as the damaging of the ozone layer or causing global warming).
2. Smog hanging over cities is the most familiar and obvious form of air pollution. But there are different kinds of pollution—some visible, some invisible—that contribute to global warming.
3. Generally any substance that people introduce into the atmosphere that has damaging effects on living things and the environment is considered air pollution.
4. Carbon dioxide, a greenhouse gas, is the main pollutant that is warming Earth. Though living things emit carbon dioxide when they breathe, carbon dioxide is widely considered to be a pollutant when associated with cars, planes, power plants, and other human activities that involve the burning of fossil fuels such as gasoline and natural gas.
5. In the past 150 years, such activities have pumped enough carbon dioxide into the atmosphere to raise its levels higher than they have been for hundreds of thousands of years.
6. Other greenhouse gases include methane—which comes from such sources as swamps and gas emitted by livestock—and chlorofluorocarbons (CFCs), which are used in refrigerants and aerosol propellants until they were banned because of their deteriorating effect on Earth's ozone layer.
7. Another pollutant associated with climate change is sulfur dioxide, a component of smog. Sulfur dioxide and closely related chemicals are known primarily as a cause of acid rain.
8. Industrialized countries have worked to reduce levels of sulfur dioxide, smog, and smoke in order to improve people's health. But a result, not predicted until recently, is that the lower sulfur dioxide levels may actually make global warming worse.
9. Just as sulfur dioxide from volcanoes can cool the planet by blocking sunlight, cutting the amount of the compound in the atmosphere lets more sunlight through, warming the Earth. This effect is exaggerated when elevated levels of other greenhouse gases in the atmosphere trap the additional heat.
10. Most people agree that to curb global warming, a variety of measures need to be taken. On a personal level, driving and flying less, recycling, and conservation reduces a person's "carbon footprint"—the amount of carbon dioxide a person is responsible for putting into the atmosphere.

11. Toxic Waste

1. Toxic waste is any unwanted material in liquid, solid, or gas form that can cause harm (e.g. by being inhaled, swallowed, or absorbed through the skin). Many of today's household products such as televisions, computers and phones contain toxic chemicals that can pollute the air and contaminate soil and water.

2. Toxic materials are poisonous byproducts as a result of industries such as manufacturing, farming, construction, automotive, laboratories, and hospitals which may contain heavy metals, radiation, dangerous pathogens, or other toxins.

3. Toxic waste has become more abundant since the industrial revolution, causing serious global health issues.

4. Disposing of such waste has become even more critical with the addition of numerous technological advances containing toxic chemical components. Products such as cellular telephones, computers, televisions, and solar panels contain toxic chemicals that can harm the environment if not disposed of properly to prevent the pollution of the air and contamination of soils and water.

5. A material is considered toxic when it causes death or harm by being inhaled, swallowed, or absorbed through the skin.

6. The waste can contain chemicals, heavy metals, radiation, dangerous pathogens, or other toxins. Even households generate hazardous waste from items such as batteries, used computer equipment, and leftover paints or pesticides.

7. Toxic material can be either human-made and others are naturally occurring in the environment.

8. Toxic waste products are divided into three general categories:
   1. chemical wastes, 2 radioactive wastes, and 3 medical wastes.

9. The world's most dangerous chemical toxins, which are commonly grouped into a collection called the "dirty dozen"by chemists and environmentalists, are categorized as persistent organic pollutants (POPs).

10. Several POPs are pesticides: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, and toxaphene.

12. Ocean Dead Zones

1. Dead zones are hypoxic (low-oxygen) areas in the world's oceans and large lakes, caused by "excessive nutrient pollution from human activities coupled with other factors that deplete the oxygen required to support most marine life in bottom and near-bottom water. (NOAA)".

2. In the 1970s oceanographers began noting increased instances of dead zones. These occur near inhabited coastlines, where aquatic life is most concentrated. (The vast middle portions of the oceans, which naturally have little life, are not considered "dead zones".)

3. Dead zones are human-caused. They occur when crop fertilizer and cow poop, containing high levels of nitrogen and phosphorous, get washed into streams and rivers and out to the ocean.

4. Less oxygen dissolved in the water is often referred to as a "dead zone" because most marine life either dies, or, if they are mobile such as fish, leave the area. Habitats that would normally be teeming with life become, essentially, biological deserts.

5. Hypoxic zones can occur naturally, but scientists are concerned about the areas created or enhanced by human activity. There are many physical, chemical, and biological factors that combine to create dead zones, but nutrient pollution is the primary cause of those zones created by humans.

6. Excess nutrients that run off land or are piped as wastewater into rivers and coasts can stimulate an overgrowth of algae, which then sinks and decomposes in the water. The decomposition process consumes oxygen and depletes the supply available to healthy marine life.

7. Dead zones occur in many areas of the country, particularly along the East Coast, the Gulf of Mexico, and the Great Lakes, but there is no part of the country or the world that is immune. The second largest dead zone in the world is located in the U.S., in the northern Gulf of Mexico.

8. The cause of such "hypoxic" (lacking oxygen) conditions is usually eutrophication, an increase in chemical nutrients in the water, leading to excessive blooms of algae that deplete underwater oxygen levels. Nitrogen and phosphorous from agricultural runoff are the primary culprits, but sewage, vehicular and industrial emissions and even natural factors also play a role in the development of dead zones.

9. Dead zones occur around the world, but primarily near areas where heavy agricultural and industrial activity spill nutrients into the water and compromise its quality accordingly.

10. The largest dead zone worldwide is the Baltic Sea. Overfishing of Baltic cod has greatly intensified the problem. Cod eat sprats, a small, herring-like species that eat microscopic marine creatures called zooplankton that in turn eat the algae. So, fewer cod and an explosion of zooplankton-eating sprats means more algae and less oxygen – a vicious cycle develops.

13. Marine Debris - Plastics in Sea and River Water and Plastic Islands

1. Marine debris, also known as marine litter, is human-created waste that has deliberately or accidentally been released in a lake, sea, ocean or waterway.

2. Floating oceanic debris tends to accumulate at the center of gyres and on coastlines, frequently washing aground, when it is known as beach litter or tidewrack. Deliberate disposal of wastes at sea is called ocean dumping. Naturally occurring debris, such as driftwood, are also present.

3. With the increasing use of plastic, human influence has become an issue as many types of plastics do not biodegrade. Waterborne plastic poses a serious threat to fish, seabirds, marine reptiles, and marine mammals, as well as to boats and coasts.

4. Marine debris injures and kills marine life, interferes with navigation safety, and poses a threat to human health. Our oceans and waterways are polluted with a wide variety of marine debris ranging from soda cans and plastic bags to derelict fishing gear and abandoned vessels.

5. Today, there is no place on Earth immune to this problem. A majority of the trash and debris that covers our beaches comes from storm drains and sewers, as well as from shoreline and recreational activities such as picnicking and beach going.

6. Abandoned or discarded fishing gear is also a major problem because this trash can entangle, injure, maim, and drown marine wildlife and damage property. Lost or abandoned commercial and recreational fishing nets, lines, pots, and traps are another form of marine debris, categorized as derelict fishing gear (DFG).

7. Plastic debris acts as a sponge for toxic, hormone-disrupting chemicals like Polychlorinated biphenyls (PCBs) and Dichloro-Diphenyl-Trichloroethane (DDT) that reside in seawater.

8. As contaminated plastics break down into small pieces they often resemble food, such as plankton, and are ingested by marine species, entering into the food chain. Studies connected in the North Pacific Central Gyre on fish that feed on plankton found that 35% of the fish had ingested plastic.

14. Greenhouse Gases

1. A greenhouse gas is a gas in an atmosphere that absorbs and emits radiant energy within the thermal infrared range. This process is the fundamental cause of the greenhouse effect. The primary greenhouse gases in Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.
2. Without greenhouse gases, the average temperature of Earth's surface would be about −18 °C (0 °F), rather than the present average of 15 °C (59 °F).
3. Human activities since the beginning of the Industrial Revolution (around 1750) have produced a 40% increase in the atmospheric concentration of carbon dioxide (CO2), from 280 ppm in 1750 to 406 ppm in early 2017.
4. It has been estimated that if greenhouse gas emissions continue at their present rate, Earth's surface temperature could exceed historical values as early as 2047, with potentially harmful effects on ecosystems, biodiversity and the livelihoods of people worldwide.
5. Much like the glass of a greenhouse, gases in our atmosphere sustain life on Earth by trapping the sun's heat. These gases allow the sun's rays to pass through and warm the earth, but prevent this warmth from escaping our atmosphere into space. Without naturally-occurring, heat-trapping gases—mainly water vapour, carbon dioxide and methane—Earth would be too cold to sustain life as we know it.
6. The danger lies in the rapid increase of carbon dioxide and other greenhouse gases that intensify this natural greenhouse effect.
7. For thousands of years, the global carbon supply was essentially stable as natural processes removed as much carbon as they released. Modern human activity—burning fossil fuels, deforestation, intensive agriculture—has added huge quantities of carbon dioxide and other greenhouse gases.
8. Today's atmosphere contains 42 per cent more carbon dioxide than it did at the start of the industrial era. Levels of methane and carbon dioxide are the highest they have been in nearly half a million years.
9. Carbon dioxide is the main contributor to climate change, especially through the burning of fossil fuels. Methane is produced naturally when vegetation is burned, digested or rotted without the presence of oxygen. Large amounts of methane are released by cattle farming, waste dumps, rice farming and the production of oil and gas.
10. Behind the struggle to address global warming and climate change lies the increase in greenhouse gases in our atmosphere.

15. Desertification

1. Desertification is a type of land degradation in which a relatively dry area of land becomes increasingly arid, typically losing its bodies of water as well as vegetation and wildlife. It is caused by a variety of factors, such as through climate change (particularly the current global warming), Deforestation and through the overexploitation of soil through human activity. Desertification is a significant global ecological and environmental problem.
2. Declines in productivity may be the result of climate change, deforestation, overgrazing, poverty, political instability, unsustainable irrigation practices, or combinations of these factors. The concept does not refer to the physical expansion of existing deserts but rather to the various processes that threaten all dryland ecosystems, including deserts as well as grasslands and scrublands.
3. Desertification takes place worldwide in drylands, and its effects are experienced locally, nationally, regionally, and globally. Drylands occupy 41% of Earth's land area and are home to more than 2 billion people
4. Persistent, substantial reduction in the provision of ecosystem services as a result of water scarcity, intensive use of services, and climate change is a much greater threat in drylands than in non-dryland systems.
5. The greatest vulnerability is ascribed to sub-Saharan and Central Asian drylands. For example, in three key regions of Africa—the Sahel, the Horn of Africa, and Southeast Africa—severe droughts occur on average once every 30 years. These droughts triple the number of people exposed to severe water scarcity at least once in every generation, leading to major food and health crises.
6. Desertification is a result of a long-term failure to balance demand for and supply of ecosystem services in drylands.
7. The pressure is increasing on dryland ecosystems for providing services such as food, forage, fuel, building materials, and water for humans and livestock, for irrigation, and for sanitation. This increase is attributed to a combination of human factors and climatic factors.

16. Land Degradation

1. Land degradation is a process in which the value of the biophysical environment is affected by a combination of human-induced processes acting upon the land.

2. It is viewed as any change or disturbance to the land perceived to be deleterious or undesirable. Natural hazards are excluded as a cause; however human activities can indirectly affect phenomena such as floods and bush fires. This is considered to be an important topic of the 21st century due to the implications land degradation has upon agronomic productivity, the environment, and its effects on food security.

3. It is estimated that up to 40% of the world's agricultural land is seriously degraded.

4. Land degradation is a global problem largely related to agricultural use. Causes include:

   – Land clearance, such as clear cutting and deforestation
   – Agricultural depletion of soil nutrients through poor farming practices
   – Livestock including overgrazing and overdrafting
   – Inappropriate irrigation and overdrafting
   – Urban sprawl and commercial development
   – Vehicle off-roading
   – Quarrying of stone, sand, ore and minerals
   – Increase in field size due to economies of scale, reducing shelter for wildlife, as hedgerows and copses disappear
   – Exposure of naked soil after harvesting by heavy equipment
   – Monoculture, destabilizing the local ecosystem
   – Dumping of non-biodegradable trash, such as plastics
   – Invasive Species
   – Soil degradation
   – Soil contamination
   – Soil erosion
   – Soil acidification and
   – Loss of soil carbon

5. Significant land degradation from seawater inundation, particularly in river deltas and on low-lying islands, is a potential hazard that was identified in a 2007 IPCC report.

6. As a result of sea-level rise from climate change, salinity levels can reach levels where agriculture becomes impossible in low-lying areas.

17. Acidification of Coral Reefs

1. **‘Ino ka moana ke ahu mōkākī nei ka puna i uka.‘**
   The sea is rough, for the corals are strewn on the beach.
   (Here are all the indications that there is trouble yonder.) This Hawaiian proverb reminds us the sky and ocean are connected, with the conditions of the atmosphere influencing those of the ocean.
2. The warmer air and ocean surface temperatures brought on by climate change impact corals and alter coral reef communities by prompting coral bleaching events and altering ocean chemistry. These impacts affect corals and the many organisms that use coral reefs as habitat.
3. If we continue to produce carbon dioxide at the current rate, future atmospheric carbon dioxide will be high enough to lower ocean surface pH to 7.8 by the year 2100 (Royal Society 2008). Scientists have done laboratory studies that suggest a pH about this low could dissolve coral skeletons and may cause reefs to fall apart (Fine and Tchernov 2006). If coral reefs are lost, vital habitat will be lost too.
4. The future health of coral reefs and many marine organisms depends on our ability to reduce our carbon dioxide emissions on a global scale.
5. Climate change has resulted in coral bleaching, when warm waters persist, corals bleach and become less able to combat disease. As climate change continues, bleaching is predicted to become more common.
6. Warmer water temperatures brought on by climate change stress corals because they are very sensitive to changes in temperature. If water temperatures stay higher than usual for many weeks, the zooxanthellae they depend on for some of their food leave their tissue. Without zooxanthellae, corals turn white because zooxanthellae give corals their color. White, unhealthy corals are called bleached. Bleached corals are weak and less able to combat disease.
7. Climate change alters ocean chemistry leading to ocean acidification
   Much of the carbon dioxide that enters the atmosphere dissolves into the ocean. In fact, the oceans have absorbed about 1/3 of the carbon dioxide produced from human activities since 1800 and about 1/2 of the carbon dioxide produced by burning fossil fuels. As carbon dioxide in the ocean increases, ocean pH decreases or becomes more acidic. This is called ocean acidification.
8. With ocean acidification, corals cannot absorb the calcium carbonate they need to maintain their skeletons and the stony skeletons that support corals and reefs will dissolve.
9. More carbon dioxide in the water makes the ocean more acidic. This coral’s skeleton has been damaged by ocean acidification.
10. Ocean acidification affects more than just corals. Snails, clams, and urchins also make calcium carbonate shells and ocean acidification negatively impacts these organisms as well. Just like corals, ocean acidification makes it harder for these organisms to absorb the calcium carbonate they need to build their shells.

18. Groundwater Pollution

1. Groundwater pollution (also called groundwater contamination) occurs when pollutants are released to the ground and make their way down into groundwater. This type of water pollution can also occur naturally due to the presence of a minor and unwanted constituent, contaminant or impurity in the groundwater, in which case it is more likely referred to as contamination rather than pollution.

2. The pollutant often creates a contaminant plume within an aquifer. Movement of water and dispersion within the aquifer spreads the pollutant over a wider area. Its advancing boundary, often called a plume edge, can intersect with groundwater wells or daylight into surface water such as seeps and spring, making the water supplies unsafe for humans and wildlife. The movement of the plume, called a plume front, may be analyzed through a hydrological transport model or groundwater model. Analysis of groundwater pollution may focus on soil characteristics and site geology, hydrogeology, hydrology, and the nature of the contaminants.

3. Pollution can occur from on-site sanitation systems, landfills, effluent from wastewater treatment plants, leaking sewers, petrol filling stations or from over application of fertilizers in agriculture.

4. Pollution (or contamination) can also occur from naturally occurring contaminants, such as arsenic or fluoride. Using polluted groundwater causes hazards to public health through poisoning or the spread of disease.

5. Different mechanisms have influence on the transport of pollutants, e.g. diffusion, adsorption, precipitation, decay, in the groundwater. The interaction of groundwater contamination with surface waters is analyzed by use of hydrology transport models.

6. Groundwater is also one of our most important sources of water for irrigation. Unfortunately, groundwater is susceptible to pollutants.

7. Groundwater contamination occurs when man-made products such as gasoline, oil, road salts and chemicals get into the groundwater and cause it to become unsafe and unfit for human use.

8. Materials from the land's surface can move through the soil and end up in the groundwater. For example, pesticides and fertilizers can find their way into groundwater supplies over time. Road salt, toxic substances from mining sites, and used motor oil also may seep into groundwater. In addition, it is possible for untreated waste from septic tanks and toxic chemicals from underground storage tanks and leaky landfills to contaminate groundwater.

9. Drinking contaminated groundwater can have serious health effects. Diseases such as hepatitis and dysentery may be caused by contamination from septic tank waste. Poisoning may be caused by toxins that have leached into well water supplies.

10. Wildlife can also be harmed by contaminated groundwater. Other long term effects such as certain types of cancer may also result from exposure to polluted water.

19. Run off waste from farms into waterways

1. Runoff is water from rain or melted snow which is not absorbed and held by the soil, but runs over the ground and through loose soil. Agricultural runoff is water leaving farm fields because of rain, melted snow, or irrigation.

2. As runoff moves, it picks up and carries pollution, which it can deposit into ponds, lakes, coastal waters, and underground sources of drinking water.

3. Agricultural runoff can include pollution from soil erosion, feeding operations, grazing, plowing, animal waste, application of pesticides, irrigation water, and fertilizer. Pollutants from farming include soil particles, pesticides, herbicides, heavy metals, salts, and nutrients such as nitrogen and phosphorus.

4. High levels of nitrates from fertilizers in runoff can contaminate drinking water and cause potentially fatal “blue baby” syndrome in very young infants by disrupting oxygen flow in the blood.

5. Agricultural wastewater generated from a variety of farm activities including animal feeding operations and the processing of agricultural products, can pollute surface and ground water if not properly managed. Examples of agricultural wastewater include but are not limited to manure, milking center wash water, barnyard and feedlot runoff, egg washing and processing, slaughterhouse wastewaters, horse washing waters and runoff associated with composting.

6. Additionally, runoff from croplands can contribute sediment, fertilizers and pesticides into surface waters.

7. Polluted agricultural runoff is the leading source of water pollution in rivers and lakes, according to a federal report. It can also trigger algae blooms in coastal waters, and produce “dead zones” in the ocean where there is no oxygen and few fish or wildlife can survive. In cities and suburbs, urban and industrial runoff is also a major source of water pollution.

8. Agricultural runoff can create a bad taste and odor in drinking water and contaminate drinking water, well water, and food sources. The pesticides in runoff can accumulate in fish, which can expose people who eat the fish to high levels of these chemicals.

9. Runoff occurs when there is more water than land can absorb. The excess liquid flows across the surface of the land and into nearby creeks, streams, or ponds. Runoff can come from both natural processes and human activity.

10. The most familiar type of natural runoff is snowmelt. Mountains that cannot absorb water from heavy snowfalls produce runoff that turns into streams, rivers, and lakes. Glaciers, snow, and rain all contribute to this natural runoff.

11. Runoff also occurs naturally as soil is eroded and carried to various bodies of water. Even toxic chemicals enter waterways through natural processes, such as volcanic eruptions. Toxic gases released by volcanoes eventually return to the water or soil as precipitation.

12. Irrigation practices that transformed California’s scorched desert into one of the nation’s most productive farming regions are the chief cause of pollution ruining the Salton Sea.

13. Growers who put food on the table dump waste water into the sea on a scale that would make big industries blush. Since the first drop of Colorado River water was diverted to make the desert bloom nearly a century ago, irrigated crop land spanning 600,000 acres in the Imperial and Coachella valleys has flushed a steady stream of salts, pesticides, fertilizers and selenium into the sea.

20. Commercial Farming, insecticides, pesticides

1. Pesticides are chemicals used to eliminate or control a variety of agricultural pests that can damage crops and livestock and reduce farm productivity.

2. The most commonly applied pesticides are insecticides (to kill insects), herbicides (to kill weeds), rodenticides (to kill rodents), and fungicides (to control fungi, mold, and mildew).

3. According to Cornell entomologist David Pimentel, “It has been estimated that only 0.1% of applied pesticides reach the target pests, leaving the bulk of the pesticides (99.9%) to impact the environment. Harmful environmental impacts of pesticide use include:

   – Loss of biodiversity
   – Elimination of key species (e.g., bees)
   – Water pollution
   – Soil contamination
   – Pest resistance, resulting in the need for increased application of pesticides

   Pesticides became common after the second World War as part of the war effort was scientific research into a way to end hunger, i.e. pesticides and the increasing productivity and availability of food production with their help. Currently an estimated 3.2 million tons of pesticides are used each year.

4. Pesticides are wasted in environments where the farmer has little knowledge or care for the detrimental effects of the pesticides. Without regulations and enforcements these pesticides can easily be spread farther than their intended area. This is especially common in developing countries.

5. With misuse the pesticides can easily be picked up by the rainwater and washed into the streams as runoff.

6. Pesticides can be transported to humans or other organisms in a variety of ways. It is near to impossible for the pesticide to only affect its targeted crop.

7. Wind is one transportation method. The wind picks up the pesticides and can blow them onto other farms or into rivers. It can be absorbed into the soil and then taken up by other organisms or can contaminate the surface and groundwater that run over/through it.

8. Pesticides are then absorbed by the plants which is detrimental to the growth of the plants. That which is not absorbed usually remains on the surface and flows into streams as surface runoff. It is dissolved into the water and then can be taken in by plants and animals. The streams would then be considered a reservoir of pesticides with a relatively high abundance level.

9. Approximately 80% of the corn and 22% of the wheat produced in the US every year is used for animal feed, while 30 million tons of US-produced soy meal is consumed annually as livestock feed.

10. In addition to causing environmental damage, when grain is grown with pesticides and then fed to livestock, pesticide residues can accumulate in the animals’ fatty tissue and milk. Pesticides, such as arsenic compounds, are also included in livestock feed to control intestinal parasites and other pests.

21. Killing off of Bees

1. The Role of the Bee – the next time you see a bee buzzing around, remember that much of the food we eat depends significantly on natural insect mediated pollination – the key ecosystem service that bees and other pollinators provide.
2. “If wild pollinator declines continue, we run the risk of losing a substantial proportion of the world’s flora”
3. Bees and other pollinating insects play an essential role in ecosystems. A third of all our food depends on their pollination. A world without pollinators would be devastating for food production.
4. Who would pollinate all the crops? Hand-pollination is extremely labour-intensive, slow and expensive.
5. The economic value of bees’ pollination work has been estimated around € 265 billion annually, worldwide. So, also from a purely economic point of view, it pays to protect the bees.
6. Bees make more than honey – they are key to food production because they pollinate crops. Bumblebees, other wild bees, and insects like butterflies, wasps, and flies all provide valuable pollination services.
7. A third of the food that we eat depends on pollinating insects: vegetables like zucchini, fruits like apricot, nuts like almonds, spices like coriander, edible oils like canola, and many more…
8. In Europe alone, the growth of over 4,000 vegetables depends on the essential work of pollinators. But currently, more and more bees are dying. The bee decline affects mankind too. Our lives depend on theirs.
9. Insecticides in particular pose the most direct risk to pollinators. As their name indicates, these are chemicals designed to kill insects, and they are widely applied in the environment, mostly around cropland areas.
10. Bees’ woes have been pinned to a number of factors, including the mass conversion of pollen-rich meadows into heavily farmed land for staples such as corn and soy beans.

22. Toxic Carcinogens everywhere

1. A carcinogen is any substance, radionuclide, or radiation that promotes carcinogenesis, the formation of cancer. This may be due to the ability to damage the genome or to the disruption of cellular metabolic processes.

2. Common examples of non-radioactive carcinogens are inhaled asbestos, certain dioxins, and tobacco smoke. Although the public generally associates carcinogenicity with synthetic chemicals, it is equally likely to arise in both natural and synthetic substances. Carcinogens are not necessarily immediately toxic; thus, their effect can be insidious.

3. Cancer is any disease in which normal cells are damaged and do not undergo programmed cell death as fast as they divide via mitosis. Carcinogens may increase the risk of cancer by altering cellular metabolism or damaging DNA directly in cells, which interferes with biological processes, and induces the uncontrolled, malignant division, ultimately leading to the formation of tumors.

4. Many people worry that substances or exposures in their environment may cause cancer.

5. Cancer is caused by changes in a cell's DNA – its genetic "blueprint." Some may be caused by outside exposures, which are often referred to as environmental factors. Environmental factors can include a wide range of exposures, such as:

6. Substances and exposures that can lead to cancer are called carcinogens. Some carcinogens do not affect DNA directly, but lead to cancer in other ways. For example, they may cause cells to divide at a faster than normal rate, which could increase the chances that DNA changes will occur.

7. The risk of developing cancer depends on many factors, including how they are exposed to a carcinogen, the length and intensity of the exposure, and the person's genetic makeup.

23. GMO Genetically Modified Crops - Interfering with the life cycle of Nature

1. The debate around genetically modified organisms (GMO) is huge and heated on either side. One of the major considerations when arguing against the use of GMO products is the potential for environmental harm. What exactly are the environmental risks to consider in regards to GMOs?
2. First of all, it is important to understand what a GMO is precisely. The World Heath Organization (WHO) defines them as organisms whose DNA has been altered in a non-natural way.
3. GM plants are usually changed to be insect resistant, virus resistant, or herbicide tolerant.
4. Furthermore, the long term effects of GMOs are not certain. Pests that are targeted by these agricultural methods can adapt to pesticides and herbicides, in addition to the DNA changes in GM plants to make them ¨resistant.¨ This means that they will not always be effective, but their toxic legacies will remain.
5. Cumulative effects of products such as GMOs are important to take into consideration. Evidence also suggests that small genetic changes in plants may produce even larger ecological shifts, meaning that there is potential for GMO´s to become persistent and weedy in agricultural conditions, since they are modified to be resistant to some modern agricultural techniques..
6. Finally, biodiversity, while it is critical in all ecosystems and to the sustainability of all species, is put at risk by GMOs. When GM crops are planted, generally in a monocrop fashion, many heritage seeds are no longer used. The nature of GMOs means fewer weed flowers and, therefore, less nectar for pollinators.
7. Toxins released into the soil through the plants´ routes mean fewer soil bacteria, which are integral to healthy soil for plants to grow without the use of chemical fertilizers. Toxic residues are left in the soil of GM crops. Nutrients are not returned to the soil in mono crops and from GMO foods, meaning that soil is becoming dry and void of all nutrients, generally integral to the growing process.
8. A cycle of dependence on GMO seeds and chemical fertilizers, pesticides, and herbicides is then created in order to grow a single crop. In addition to soil issues, the irrigation used to grow GM foods naturally carries all of these problems into water sources and into the air. This exposes different bacteria, insects, and animals to the same problems.
9. GMO´s DNA may end up in soil, compost, animal feed and byproducts, and other living organisms from insects to larger pests. Bees can transport pesticides, herbicides, and DNA through the air into the environment. Once a plant is introduced in an agricultural environment, it is reasonable to assume it will become part of a larger ecosystem, meaning the problem of environmental damage done by GMOs is much larger than simply potentially harming our health.
10. Aside from environmental issues, GMOs are the topic of social and ethical debates as well. It goes without saying that we live in an inter-connected world, where the way we interact with nature can cause a complex array of consequences. Being informed on the food we are consuming, and the way modern agricultural techniques are affecting the environment, is one effective way of consciously interacting with the natural world.
11. A genetically modified organism (GMO) has had its DNA decoded and manipulated to create something different than what has developed naturally. The technique used is

called genetic engineering or recombinant DNA technology. Creating GMOs involves taking DNA molecules from inside the cells of different organisms and combining them into one molecule to create a new set of genes. These new genes are then inserted into the cells of a plant or animal to produce characteristics the recipient never had.

12. Why is this a problem worth our concern? We have no idea of where this may lead. Even the strongest supporters of genetic engineering admit there is great uncertainty concerning these processes and their consequences. As the reports of almost all research results in our popular media say, “Further research is needed.”

13. Besides the unknown consequences, many people are troubled by the ethical problems of “playing God.” When you decode the DNA of a living organism and manipulate it to create a new and unique being, an ethical debate is inevitable. Bioengineering has been called the final frontier. The scientists doing this work, however well intentioned, have been accused of tampering with the natural evolution of all living things on earth.

24. Extreme Weather - Hurricanes, Floods, Tornadoes, Tsunamis, Drought, Heat Waves

1. An extreme weather event is something that falls outside the realm of normal weather patterns. It can range from a flood to a drought to a hurricane to a hailstorm. Some extreme weather and climate events have increased in recent decades, and new and stronger evidence confirms that some of these increases are related to human activities.
2. As the world has warmed, that warming has triggered many other changes to the Earth's climate. Changes in extreme weather and climate events, such as heat waves and droughts, are the primary way that most people experience climate change.
3. Human-induced climate change has already increased the number and strength of some of these extreme events. Over the last 50 years, much of the U.S. has seen increases in prolonged periods of excessively high temperatures, heavy downpours, and in some regions, severe floods and droughts.
4. Heat waves are periods of abnormally hot weather lasting days to weeks. The number of heat waves has been increasing in recent years.
5. Extreme Drought - higher temperatures lead to increased rates of evaporation, including more loss of moisture through plant leaves.
6. Heavy downpours are increasing worldwide, especially over the last three to five decades. The mechanism driving these changes is well understood. Warmer air can contain more water vapor than cooler air.
7. Flooding has intensified worldwide in certain areas,
8. Hurricanes, there has been a substantial increase in most measures of Atlantic hurricane activity since the early 1980s, the period during which high quality satellite data are available. Hurricane development, however, is influenced by more than just sea surface temperature, it also depends on how local atmosphere responds to changes in local sea surface temperatures.

25. Melting Glaciers

1. Earth is losing its ice: Glaciers around the world are rapidly disappearing
2. millions of people will be forced to leave their homes within a lifetime as sea levels rise
3. “Unless substantial climate response action is taken and the trend of global temperature rise is reversed, we will continue to see Miami streets swallowed by the sea … And we can expect this pattern to continue for decades, centuries, and indeed, millennia.
4. Climate models have projected that 52 per cent of all the small glaciers in Switzerland will be gone in 25 years, while western Canada will lose about 70 per cent of its glacial ice by 2100.
5. The loss of Earth’s land ice is of international concern. Rising seas, to which melting ice is a key contributor, are expected to displace millions of people within the lifetime of many of today’s children
6. The problems of glacier loss do not stop at sea level rise; glaciers are also crucial water sources, integral parts of Earth’s air and water circulation systems, nutrient and shelter suppliers for flora and fauna, and unique landscapes for contemplation or exploration.”
7. Containing about five metres of potential sea level rise, the West Antarctic Ice Sheet is particularly vulnerable because it rests on bedrock well below sea level and is exposed to warm ocean waters at depth.
8. The risks and impacts of a one or two-metre sea level rise differ substantially for coastal cities and island nations.
9. But perhaps even more important for planning is whether that flooding occurs in 2050 or 2150.
10. 10,000 years … gone in 10. Seven glaciers that are melting before our eyes, Matterhorn Europe, Himalayas, Greenland, Mount Kilimanjaro, Andes, Glacier National Monument, Alaska.

26. Melting Icecaps

1. The melting of the polar ice caps is caused by the overall increase in global temperature, and this melting can have serious consequences for all organisms on Earth. As the polar ice caps melt, sea levels rise and the oceans become less saline.

2. If we keep burning fossil fuels indefinitely, global warming will eventually melt all the ice at the poles and on mountaintops, raising sea level by 216 feet.

3. Icebergs are chunks of frozen glaciers that break off from landmasses and fall into the ocean. The rising temperature may be causing more icebergs to form by weakening the glaciers, causing more cracks and making ice more likely to break off. As soon as the ice falls into the ocean, the ocean rises a little.

4. If the rising temperature affects glaciers and icebergs, could the polar ice caps be in danger of melting and causing the oceans to rise? This could happen, but no one knows when it might happen.

5. The main ice covered landmass is Antarctica at the South Pole, with about 90 percent of the world's ice (and 70 percent of its fresh water). Antarctica is covered with ice an average of 2,133 meters (7,000 feet) thick. If all of the Antarctic ice melted, sea levels around the world would rise about 61 meters (200 feet). But the average temperature in Antarctica is -37°C, so the ice there is in no danger of melting. In fact in most parts of the continent it never gets above freezing.

6. At the other end of the world, the North Pole, the ice is not nearly as thick as at the South Pole. The ice floats on the Arctic Ocean.

7. There is a significant amount of ice covering Greenland, which would add another 7 meters (20 feet) to the oceans if it melted. Because Greenland is closer to the equator than Antarctica, the temperatures there are higher, so the ice is more likely to melt.

8. But there might be a less dramatic reason than polar ice melting for the higher ocean level — the higher temperature of the water. Water is most dense at 4 degrees Celsius. Above and below this temperature, the density of water decreases (the same weight of water occupies a bigger space). So as the overall temperature of the water increases it naturally expands a little bit making the oceans rise.

27. Collapsing Ecosystems

1. Ecological collapse refers to a situation where an ecosystem suffers a drastic, possibly permanent, reduction in carrying capacity for all organisms, often resulting in mass extinction. Usually, an ecological collapse is precipitated by a disastrous event occurring on a short time scale.

2. The Earth's biodiversity is under attack. We would need to travel back over 65 million years to find rates of species loss as high as we are witnessing today.

3. The world's climate is already changing due to warming temperatures. Extreme weather events (floods, droughts, and heatwaves) are increasing as global temperatures rise.

4. While we are starting to learn how these changes will affect people and individual species, we don't yet know how ecosystems are likely to change.

5. Ecological theory tells us that as ecosystems become unhealthy, they approach critical thresholds (also referred to as tipping points). The more unhealthy they become, the quicker they respond to disturbances.

6. Ecosystems that cross a critical threshold are transformed into new states, often with losses in biodiversity, exotic species invasions, and sudden forest die-off events. For example, over the past 10 years, ecosystems in the western US have experienced large-scale tree deaths and native, black grama grasslands have been transformed to the exotic, South African Lehmann love grass..

7. As humans we show weakened resistance when we are sick, and we become more susceptible to external conditions. Similarly, slower than normal ecosystem responses to external changes may also be indicative of an unhealthy ecosystem. Both of these measures, fast and slow, are early warning signs for ecosystem collapse

8. Conservation often focuses on the big, enigmatic animals – tigers, polar bears, whales. There are many reasons to want to save these species from extinction. But what about the vast majority of life that we barely notice? The bugs and grubs that can appear or vanish from ecosystems without any apparent impact?

9. Biodiversity increases resilience: more species means each individual species is better able to withstand impacts. Think of decreasing biodiversity as popping out rivets from an aircraft. A few missing rivets here or there will not cause too much harm. But continuing to remove them threatens a collapse in ecosystem functioning. Forests give way to desert. Coral reefs bleach and then die.

10. In fact, the presence or absence of some of the rarest species may be giving us important clues as to how near an ecosystem is to a potential collapse.

11. Such rare species we call ecosystem canaries. Like canaries that coal miners used to check for poisonous gasses deep underground, ecosystem canaries are often the first species to disappear from a stressed ecosystem. Their vanishing can be linked to changes in the functioning of ecosystems, which can serve as a warning that a collapse is approaching.

28. Satellites and Space Debris

1. Space debris (also known as space junk, space waste, space trash, space litter or space garbage) is a term for the mass of defunct, artificially created objects in space, most notably in Earth orbit, such as old satellites and spent rocket stages. It includes the fragments from their disintegration, erosion and collisions. As of December 2016, five satellite collisions have resulted in generating space waste.
2. As of 5 July 2016, the United States Strategic Command tracked a total of 17,852 artificial objects in orbit above the Earth, including 1,419 operational satellites. However, these are just objects large enough to be tracked.
3. As of July 2013, more than 170 million debris smaller than 1 cm (0.4 in), about 670,000 debris 1–10 cm, and around 29,000 larger debris were estimated to be in orbit.
4. Collisions with debris have become a hazard to spacecraft; they cause damage akin to sandblasting, especially to solar panels and optics like telescopes or star trackers that cannot be covered with a ballistic Whipple shield (unless it is transparent).
5. More than 500,000 pieces of debris, or “space junk,” are tracked as they orbit the Earth. They all travel at speeds up to 17,500 mph, fast enough for a relatively small piece of orbital debris to damage a satellite or a spacecraft.
6. The rising population of space debris increases the potential danger to all space vehicles, but especially to the International Space Station, space shuttles and other spacecraft with humans aboard.
7. NASA takes the threat of collisions with space debris seriously and has a long-standing set of guidelines on how to deal with each potential collision threat..
8. The greatest risk to space missions comes from non-trackable debris. In 1996, a French satellite was hit and damaged by debris from a French rocket that had exploded a decade earlier.

29. Fishing Nets in Oceans (Ghost Nets)

1. Ghost nets are fishing nets that have been left or lost in the ocean by fishermen. These nets, often nearly invisible in the dim light, can be left tangled on a rocky reef or drifting in the open sea. They can entangle fish, dolphins, sea turtles, sharks, dugongs, crocodiles, seabirds, crabs, and other creatures, including the occasional human diver. Acting as designed, the nets restrict movement, causing starvation, laceration and infection, and suffocation in those that need to return to the surface to breathe.

2. Every year hundreds of thousands of marine animals, such as sea turtles, seals, dolphins and whales are harmed by ocean plastic pollution. Abandoned plastic fishing nets are a significant part of the problem.

3. These nets can travel long distances from their points of origin and can remain in the ocean long after they are discarded, resulting in the entrapment and death of marine mammals, sea birds and fish. The result is an increasingly critical global threat to marine life.

4. Abandoned fishing nets and pots, trap, maim, and kill hundreds of marine animals daily Unseen below the surface, fishing gear reaps the oceans bounty the world over. Viewed from below, nets appear as veil walls lightly dancing the currents with a serene and silent intent. Ever since nets began to be cast out at sea eons ago, more and more fishing gear has been entering our oceans daily. And much of this gear remains in the water, lost, torn away, or simply abandoned.

5. Abandoned fishing gear devours sea-life with insatiable hunger. To a number of conservationists, these derelict nets are darkly referred to as “ghost gear.”

6. Floating nets wander around, collecting a plethora of organisms, and eventually sink under the weight. As this biomass breaks apart in the ocean’s benthic regions, the nets shake their load and lumber upwards again, ready to wreak more havoc.

7. Some nets and lines wrap themselves on reefs, shipwrecks, or rocks, ensnaring marine animals, maiming, drowning or simply starving hundreds of thousands of them. Pots intended for crab, lobster, and shrimp see an eclectic range of visitors. Entire crab or lobster lineages, scavenging bottom dwellers that venture inside for a hapless predecessor’s remains, perish in these traps.

8. Abandoned gear makes no distinctions, capturing marine mammals, fish, turtles, whales, birds, sharks, rays, and invertebrates.

9. Fifty or sixty years ago, nets were commonly made from biodegradable hemp or cotton. With the advent of synthetic, degrade-resistant materials such as nylon, nets now can remain active in the water for hundreds of years.

10. Certain plastics can remain in the marine environment for up to 600 years. When gear does finally break apart, further damage is done when marine animals eat plastic particles and polyurethane chemicals leach into the water.

30. Wildfires

1. The effects of global warming on temperature, precipitation levels, and soil moisture are turning many of our forests into kindling during wildfire season.
2. As the climate warms, moisture and precipitation levels are changing, with wet areas becoming wetter and dry areas becoming drier.
3. Higher spring and summer temperatures and earlier spring snowmelt typically cause soils to be drier for longer, increasing the likelihood of drought and a longer wildfire season.
4. These hot, dry conditions also increase the likelihood that wildfires will be more intense and long-burning once they are started by lightning strikes or human error.
5. The costs of wildfires, in terms of risks to human life and health, property damage, and money, are devastating, and they are only likely to increase unless we better address the risks of wildfires and reduce our activities that lead to further climate change.
6. Across much of the northern hemisphere, intense and prolonged heatwaves have triggered disruption and devastation as North America, the Arctic, northern Europe and Africa have sweltered in record-breaking temperatures.
7. In Africa, a weather station at Ouargla, Algeria, in the Sahara desert, recorded a temperature of 51.3C, the highest reliable temperature ever recorded in Africa.
8. In Japan, where temperatures have reached more than 40C, people were last week urged to take precautions after the death toll reached 30 with thousands more having sought hospital treatment for heat-related conditions. And in California increased use of air conditioning units, switched on to counter the scorching conditions there, has led to power shortages.
9. But perhaps the strangest impact of the intense heat has been felt in Canada. It too has been gripped by ferocious heat, with Toronto recording temperatures that have exceeded 30C on 18 days so far this year. This figure compares with only nine such days all last summer.
10. As global carbon emissions continue to rise and predictions suggest the world will be unable to hold global temperature rises this century to below 2C above pre-industrial levels, widespread heatwaves are very likely to get worse and become more frequent, scientists warn.

B. State of Mankind

1. Overpopulation

1. 2018 – 7.7 BILLION PEOPLE AND INCREASING DAILY

2. 1976 – 3.6 BILLION PEOPLE

3. Human overpopulation (or population overshoot) occurs when the ecological footprint of a human population in a specific geographical location exceeds the carrying capacity of the place occupied by that group.

4. Overpopulation can further be viewed, in a long term perspective, as existing if a population cannot be maintained given the rapid depletion of non-renewable resources or given the degradation of the capacity of the environment to give support to the population.

5. Warning: Mother “Earth didn’t replace the dinosaurs after they died” in the last great species extinction, reports Nobel physicist Robert Laughlin. She “just moved on and became something different.” But so what, you say, that was 65 million years ago. Right?

6. Wrong. Today humans are the new dinosaurs, the next species slated for extinction, warn 2,000 United Nations scientists. Soon. We’re also causing the extinction, even accelerating a new timetable. Signing our own death warrant. Not millions of years in the future, but this century. Thanks to our secret love of climate change. Yes, we’re all closet science deniers.

7. Here’s how Laughlin put it: “Humans have already triggered the sixth great period of species extinction in Earth’s history.” Get it? We’re to blame. We are the engine driving a new species extermination.

8. The human race is in a suicidal run to self-destruction. We can’t blame it on the great American conspiracy of climate-science deniers, Big Oil, the Koch Bros, U.S. Chamber of Commerce and Congress. It’s us.

9. We just keep buying gas guzzlers, keep investing retirement money in Exxon Mobil, keep making more and more babies, forever in denial of the widening gap between perpetual economic growth and more babies living on a planet of rapidly diminishing resources.

10. Earth’s real problem, too many babies … but we can’t admit the truth
    What’s wrong? Everybody on Earth is in denial about our biggest problem … population growth. Too many new babies, a net of 75 million a year. And we’re all closet deniers — leaders, investors, billionaires, the 99%, everybody. Yes, even Bill McKibben’s 350.org global team. The U.N.’s 2,000 scientists know overpopulation is Earth’s only real problem.

11. Get it? Earth has only one real problem, there’s the one main dependent variable in the scientific equation. But we refuse to focus on it. So, yes, even scientists are science deniers too. They know population growth is the killer issue, but are avoiding it too. Thousands of scientists have brilliant technical solutions to reducing the impact of global warming. But avoid the root cause. They keep solving the dependent variables in their climate-change science equation. But population growth is the cause of the Earth’s problem, not the result.

2. Societal Collapse - Extinction of Civilizations

1. Societal collapse is the fall of a complex human society. Such a disintegration may be relatively abrupt, as in the case of the Maya civilization, or gradual, as in the case of the fall of the Western Roman Empire.
2. Common factors that may contribute to societal collapse are economical, environmental, social and cultural, and disruptions in one domain sometimes cascade into others.
3. In some cases a natural disaster (e.g. tsunami, earthquake, massive fire or climate change) may precipitate a collapse.
4. Other factors such as a Malthusian catastrophe, overpopulation or resource depletion might be the proximate cause of collapse. Significant inequity may combine with lack of loyalty to established political institutions and result in an oppressed lower class rising up and seizing power from a smaller wealthy elite in a revolution.
5. The diversity of forms that societies evolve corresponds to diversity in their failures. Jared Diamond suggests that societies have also collapsed through deforestation, loss of soil fertility, restrictions of trade and/or rising endemic violence.
6. Foreign Invasions - The decline of the Roman Empire is one of the events traditionally marking the end of Classical Antiquity and the beginning of the European Middle Ages. North Africa's populous and flourishing civilization collapsed after exhausting its resources in internal fighting and suffering devastation from the invasion of the Bedouin tribes of Banu Sulaym and Banu Hilal. Ibn Khaldun noted that the lands ravaged by Banu Hilal invaders had become completely arid desert.In the brutal pillaging that followed Mongol invasions, the invaders decimated the populations of China, Russia, the Middle East, and Islamic Central Asia. Later Mongol leaders, such as Timur, though he himself became a Muslim, destroyed many cities, slaughtered thousands of people and did irreparable damage to the ancient irrigation systems of Mesopotamia.
7. Encounters between European explorers and populations in the rest of the world often introduced local epidemics of extraordinary virulence. Smallpox ravaged Mexico in the 1520s, killing 150,000 in Tenochtitlán alone, including the emperor, and Peru in the 1530s, aiding the European conquerors.
8. Some believe that the death of up to 95% of the Native American population of the New World was caused by Old World diseases.
9. Societal collapse of many indigenous cultures has occurred as a result of European imperialism in various parts of the globe, particularly in areas where European settler communities took possession of land once held by native peoples, in Latin America and North America, and in Australasia. The effects of this dispossession are still evident in many of the problems confronting indigenous cultures, including alcoholism, high rates of incarceration, suicide rates and fraternal violence.
10. Mathematician predicts that mass global extinction that wipes out human civilization will begin in 2100.

3. Nuclear Energy and Nuclear Waste

Nuclear power is dirty, dangerous and expensive.

A. Nuclear Power

1. Most nuclear reactors are based on the concept of nuclear fission. Nuclear fission occurs when uranium nuclei are bombarded with neutrons. This bombardment breaks the uranium nuclei apart, releasing heat, radiation and more neutrons. The neutrons that are released cause a chain reaction as more uranium nuclei get bombarded, releasing massive amounts of energy. This explains how nuclear power plants can create so much electricity from only a small amount of uranium. However, it also helps explain some of the concerns governments, scientists and citizens have about the ramifications of an accident within a nuclear power plant.
2. Now, it's important to note that in a nuclear power plant, the uranium chain reaction is controlled. Therefore, a nuclear reactor cannot explode like an atomic bomb. This is because a nuclear bomb requires an uncontrolled chain reaction with highly-enriched uranium fuel. Uranium is a very heavy naturally-occurring element. Being an element, it can exist in different forms known as isotopes. Isotopes are different forms of the same element that contain different numbers of neutrons in their nucleus. The isotope U-235 is important because it can be used in the nuclear fission chain reaction to create a lot of energy.
3. Unlike the uranium used in a nuclear bomb, which is about 90% enriched with the isotope U-235, the uranium used in a nuclear reactor is only slightly enriched, to about four or five percent. This limits the amount of neutrons available for the fission chain reaction. Also, the chain reaction within the core of a nuclear reactor is controlled by control rods that absorb neutrons to control the rate of reaction. A nuclear bomb does not utilize control rods and, therefore, is an uncontrolled chain reaction.
4. A meltdown is an accident in which severe overheating of the nuclear reactor results in the melting of the reactor's core. A meltdown could occur if there was a defect in the cooling system of the reactor that allowed one or more of the nuclear fuel elements to exceed its melting point.
5. If a meltdown occurred, a nuclear power plant could release radiation into the environment.
6. The biggest concern associated with a nuclear power accident is the negative effects that exposure to radiation can have on the human body and the environment.
7. If a person were exposed to significant amounts of radiation over a period of time, this exposure could damage body cells and lead to cancer
8. In addition to personal health concerns, there are also environmental health concerns associated with nuclear power generation. Nuclear power plants use water from local lakes and rivers for cooling. Local water sources are used to dissipate this heat, and the excess water used to cool the reactor is often released back into the waterway at very hot temperatures. This water can also be polluted with salts and heavy metals, and these high temperatures, along with water pollutants, can disrupt the life of fish and plants within the waterway.
9. Since the World Trade Center attacks in New York City on September 11th, 2001, concerns have circulated that terrorists could target nuclear reactors with the purpose of releasing radioactive materials.
10. The nuclear industry still has no solution to the 'waste problem, the transport of this waste poses an unacceptable risk to people and the environment. Nuclear waste is hazardous for tens of thousands of years. This clearly is unprecedented and poses a huge threat to our future generations. Even if put into a geological repository, the waste might emerge and threaten future generations.

4. Energy Economy - Fossil Fuels - Oil and Coal

1. America is at an energy crossroad. As a nation, we are dependent on fossil fuels at a time of growing demand and dwindling supply. Meanwhile, fossil fuel use continues to impose massive environmental and economic costs. Now the country must choose between paying to continue the status quo or investing in a new energy future.

2. The costs of continuing on our current energy path are steep. American consumers and businesses already spend roughly $700 billion to $1 trillion each year on coal, oil and natural gas, and suffer the incalculable costs of pollution from fossil fuels through damage to our health and environment.

3. If America continues along a business-as-usual energy path, U.S. fossil fuel spending is likely to grow, totaling an estimated $23 trillion between 2010 and 2030.

4. The world is overly reliant on fossil fuels such as coal, natural gas and oil.

5. For every dollar that an American household spends each year, about 10 cents is likely to go toward the purchase of energy, with most of that money spent on fossil fuels.

6. Fossil fuel production and use damage our environment and our health – inflicting even greater damage on the American economy and our quality of life.

7. Fossil fuel combustion is the leading contributor to global warming, which, in addition to being a looming environmental and human catastrophe, could inflict massive economic damage as well:

8. Sea level rise and an increase in the severity of storms could put key cities such as New York, Miami and New Orleans at greater risk of costly storm damage.

9. Global warming is forecast to inflict a variety of other costs, including declining rainfalls and rising temperatures that will combine to cause large and extended drought conditions in regions like the Southwest, and impacts on public health due to heat-related illnesses, greater formation of ozone smog, and increases in vector-borne disease.

5. Morality, Civility, Ethics, Decaying Moral Values

1. Moral breakdown is a phenomenon in which a major degradation or complete loss of moral values takes place within a particular society. The abruptness of such kind of degradation may vary depending on the situation and the events that take place within the given society over a certain time.

2. Moral Breakdown may be caused by the changes in the political and/or cultural changes of the society, conflict or a natural disaster.

3. Education without values, as useful as it is, seems rather to make man a more clever devil. — C.S. Lewis, 1898-1963

4. Picking up a newspaper can be a scary way to start the morning: terrorist bombings, guns in classrooms, Terri Schiavo, Enron, politicians lying to constituents and journalists misleading us all. Our gut reaction is to fling open a window and scream, “I’m not going to take it anymore.”

5. It is widely believed that modern society is in sharp decline. Among the ills cited are skyrocketing rates of crime, divorce, teenage sex, teenage births and drug abuse; war (especially in the 20th century); and a general decline in personal morality and religiosity.

6. There is also concern that modern science and technology is leading to a widening of the gap in living conditions and educational opportunities between prosperous first-world nations and impoverished third-world nations. Such concerns are raised by both the secular left and the religious right.

7. Religious fundamentalists frequently pin the blame on modern science in general, and on evolution in particular.

8. Some examples of decline - Uut-of-wedlock births and single-parent households. Internet fraud and “addiction”. Crime. It is widely believed that crime, from minor burglary to serious violent offenses, is spiraling out of control. Teenage sex, birth and abortion. It is widely believed that teenage sex and birth rates are exploding out of control. Teenage alcohol, cigarette and drug use. Endless Wars and Proxy Wars waged by powerful, wealthy countries.

6. Urban Sprawl

1. Urban sprawl, also called sprawl or suburban sprawl, the rapid expansion of the geographic extent of cities and towns, often characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation.
2. Urban sprawl is caused in part by the need to accommodate a rising urban population; however, in many metropolitan areas it results from a desire for increased living space and other residential amenities.
3. Urban sprawl has been correlated with increased energy use, pollution, and traffic congestion and a decline in community distinctiveness and cohesiveness. In addition, by increasing the physical and environmental “footprints” of metropolitan areas, the phenomenon leads to the destruction of wildlife habitat and to the fragmentation of remaining natural areas.
4. Urban sprawl refers to a number of related characteristics of suburban development, such as extremely low density for residential development, unique dependence on the car for transportation and street malls and shopping malls as exclusive forms of retail.
5. Critics have charged urban sprawl with a variety of social ills, such as increased pollution, social isolation, destruction of natural resources and even increased obesity. Supporters of suburbanization have challenged these accusations and argued that low density development, with good schools and high levels of safety, is what the vast majority of household desires.
6. People must really like each other. Although we live in one of the world’s largest countries with an endless horizon of space, we choose to live right next to each other in our cities. Over 80% of us now live in urban areas. As our cities grow bigger, urban sprawl is beginning to affect our quality of life.
7. The most obvious problem is that sprawl leads to a car-dependent culture—and driving is stressful for drivers and for nature. More traffic, more carbon emissions, more smog! But sprawl isn’t inevitable. It is often the result of poor planning and short-sightedness.
8. Sprawl affects us in surprising ways—like draining our precious free time and expanding our waistlines. A commuter who drives just one hour each day spends the equivalent of nine working weeks a year in a car. Researchers have found that people living in sprawling suburbs spend less time walking and weigh up to six pounds more than those living in pedestrian-friendly neighborhoods.
9. Urban sprawl is cutting into precious farm and wildlands, leaving us with less greenspace and precious wildlands, like bogs, which are being drained and paved over, putting valuable wildlife habitat and species at risk.

7. Water Scarcity

Background Information

1. Water covers 70% of our planet, and it is easy to think that it will always be plentiful. However, freshwater—the stuff we drink, bathe in, irrigate our farm fields with—is incredibly rare. Only 3% of the world's water is fresh water, and two-thirds of that is tucked away in frozen glaciers or otherwise unavailable for our use.
2. As a result, some 1.1 billion people worldwide lack access to water, and a total of 2.7 billion find water scarce for at least one month of the year.
3. Inadequate sanitation is also a problem for 2.4 billion people—they are exposed to diseases, such as cholera and typhoid fever, and other water-borne illnesses.
4. We have ignored the earth's environmental stop signs. Faced with falling water tables, not a single country has mobilised to reduce water use. Unless we can wake up to the risks we are taking, we will join earlier civilizations that failed to reverse the environmental trends that undermined their food economies.
5. More than half the world's wetlands have disappeared. Agriculture consumes more water than any other source and wastes much of that through inefficiencies.
6. Climate change is altering patterns of weather and water around the world, causing shortages and droughts in some areas and floods in others.At the current consumption rate, this situation will only get worse. By 2025, two-thirds of the world's population may face water shortages. And ecosystems around the world will suffer even more.
7. Water scarcity is the lack of fresh water resources to meet water demand.
8. One-thirds of the global population (2 billion people) live under conditions of severe water scarcity at least 1 month of the year.
9. Half a billion people in the world face severe water scarcity all year round. Half of the world's largest cities experience water scarcity.

8. Food Scarcity

1. The Time bomb, setting Nation against Nation- ever increasing food prices, leading to political instability, spreading hunger and, unless governments act, a catastrophic breakdown in food. “Food is the new oil and land is the new gold”
2. The result is that a new geopolitics of food has emerged, where the competition for land and water is intensifying and each country is fending for itself.
3. Nearly 60 percent of global land deals in the last decade have been to grow crops that are used for biofuels and to feed cattle for meat.
4. In the last 10 years food prices have doubled as demand for food has increased with a rapidly growing world population and millions have switched to animal-based diets, which require more grain and land.
5. Oxfam said last week it expected the price of key food staples, including wheat and rice, to double again in the next 20 years, threatening disastrous consequences for the poor.
6. But the surest sign that food supplies are precarious is seen in the amount of surplus food that countries hold in reserve, or “carry over” from one year to the next.
7. “For six of the last 11 years the world has consumed more food than it has grown. We do not have any buffer and are running down reserves. Our stocks are very low and if we have a dry winter and a poor rice harvest we could see a major food crisis across the board.”
8. New trends such as falling water tables, plateauing grain yields and rising temperatures join soil erosion and climate change to make it difficult, if not impossible, to expand production fast enough.”
9. Four pressing needs must be addressed together, instead of better seeds, tractors or pumps to raise water, feeding the world now depends on new population, energy, and water policies.
10. We live in a world where more than half the people live in countries with food bubbles based on farmers’ over-pumping and draining aquifers. The question is not whether these bubbles will burst, but when. The bursting of several national food bubbles as aquifers are depleted could create unmanageable food shortages.
11. If world population growth does not slow dramatically, the number of people trapped in hydrological poverty and hunger will only grow.
12. If the world fails to address the climate issue, the earth’s temperature this century could easily rise by 6°C, devastating food supplies. We have ignored the earth’s environmental stop signs. Faced with falling water tables, not a single country has mobilised to reduce water use. Unless we can wake up to the risks we are taking, we will join earlier civilizations that failed to reverse the environmental trends that undermined their food economies.
13. We know the answers. They include saving water, eating less meat, stopping soil erosion, controlling populations and changing the energy economy. We have to mobilise quickly. Time is the scarcest resource. Success depends on moving at wartime speed. It means transforming the world industrial economy, stabilising populations and rebuilding grain stocks.

9. Evils of the Connected World – Internet

1. The internet is not good or evil, dark or light. It's humans, that determine what the technology does (at least for now). And no matter how reliant we are on these technologies, there has to be appropriate filters on how we use the tools we've created — or we'll begin to abuse them.
2. The 'internet of things' is creating a more connected world but there is a dark side to giving up our domestic lives to machines.
3. A woman falls asleep on the floor. She wakes, terrified and in excruciating pain to find a robot vacuum cleaner chewing up her hair. The cuddly toy you bought your toddler daughter turns out to be secretly recording your private conversations, the bedtime stories you read together and her sleeping and then broadcasting them on the internet.
4. The CCTV you installed to keep your house safe from burglars is hacked and your life ends up as a 24-hour reality show without you knowing. It is a big hit in Japan.
5. Your smart home is compromised, the lock code is changed shutting you out, the sound system is cranked up to 11, blaring out while you're stuck in the drive. The lights are flashing on and off like a disco. You realise there is a party going on inside and you weren't invited. Perhaps it is just the machines having a good time.
6. Some of these have happened. For others, it's only a matter of time. Our houses are being possessed. And the 21st century's evil spirits are the ghosts controlling our machine. This is the "internet of things", the much-vaunted next iteration of a connected landscape of domestic and urban objects.
7. The dream is of a connected world in which products talk to each other and everything becomes more efficient, seamless. It is a world which is already populated by domestic devices such as Nest's home-control systems, the hair-eating robot vacuum cleaner (yep, that one's true), smart fridges, lighting systems and ovens. And the dream of all these manufacturers is that they will be able to harvest your most intimate data.
8. The user survey and the focus group will be replaced by real-time information. Unknowingly, we will be conducting market research for the manufacturers and online retailers as we carry out our domestic chores, eat, chat and just move around in our homes.
9. In order to be any use a system such as Amazon's Alexa ("an intelligent personal assistant") needs to be listening all the time, waiting f[or key words or phrases to trigger it into action. In other words, it is a surveillance device. If you liked Samsung's spy-telly by the way, you can now buy its Family Hub fridge-freezer, which will send a picture of its contents to your smartphone in lieu of a shopping list and upon which you can order your next delivery online. But while you pour a drink, who else is poring over the contents of your fridge?
10. Sci-fi author Bruce Sterling agrees with Greenfield. "It's the cheap Chinese cameras which are ideal for Distributed Denial of Service attacks, the loads of data which can be hacked by the ankle biters — the 15- or 16-year-old kids who can take down a bank from their bedrooms," he says. "The idea that a teenager could create chaos on a global scale is so big it is actually hurting morale in the [tech] industry. It's embarrassing."
11. The internet of things is inviting an infinite digital openness into our homes without any of the protections we automatically apply to our physical architecture. In fact, it is even able to override this — would you like your locks and security systems controlled by an app? Perhaps you already do.
12. More than 90 percent of IT security professionals predict that connected devices will be a major security issue this year as security programmes fail to keep pace with the 'significant' risks posed by the Internet of Things (IoT).

10. Materialism and Consumerism

1. Research has associated consumerism and materialism with low self-esteem and the feelings of loneliness and unhappiness.

2. A series of studies published in the journal, Motivation and Emotion showed that as people become more materialistic, their sense of wellbeing and purpose is reduced and if they become less materialistic, it rises.

3. While materialism is good for the economy, fuelling growth, it can have a negative impact on a personal level, leading to anxiety and depression.

4. Consumerism can also damage relationships, communities, and the environment.

5. In many ways, there is a logical correlation. Consumerism and materialism often involve comparisons with others and, if it is perceived that others are doing better, resulting feelings of deficiency are understandable.

6. With the immense amount of advertising we are bombarded with on a daily basis, it is unsurprising that there are many things we feel we want and need.

7. Advertising plays on our fears and the need for social acceptance. When we are told a product will give us youthful skin, make us more sexually successful or impress others, it is little wonder that we take away feelings of being less than good enough as we are, hence the resulting low self-esteem.

8. In addition, focusing exclusively on earning enough money to buy more can take time away from the things that can nurture happiness including relationships, social activities, hobbies, charity and community work and the environment.

9. That's our entire economic system: buy things. Everybody buy. It doesn't matter what you buy. Just buy. It doesn't matter if you don't have money. Just buy. Our entire civilization now rests on the assumption that, no matter what else happens, we will all continue to buy lots and lots of things.

10. Buy, buy, buy, buy, buy. And then buy a little more. Don't create, or produce, or discover — just buy. Never save, never invest, never cut back — just buy. Buy what you don't need with money you don't have… Buy like you breathe, only more frequently.

11. Americans today, compared to 55 years ago, own twice as many cars and eat out twice as much per person, but we don't seem to be any happier because of it. Rather than rising levels of well-being, we've seen mounting credit card debt and increasing numbers of self-storage facilities to house the things we compulsively buy.

12. Here are six things you should know about the psychology of consumption — and strategies to find freedom from materialism.

    a. Consumer culture may be harming individual well-being.
    b. Materialist values are linked to Type-A behavior.
    c. Money really can't buy you happiness.
    d. Materialism could ruin your relationships. Materialistic people also typically have less pro-social and empathetic qualities, both towards others and towards the environment.
    e. Consumer cultures may breed narcissistic personalities.
    f. Consumerism is fueled by insecurity — and remedied by mindfulness.

11. Corruption and Greed

1. Public corruption and bribery: The acts often stem from a government official's desire for money or power being so strong that it's eventually overtaken by good old-fashioned greed. It comes in many forms, including: money laundering, extortion, embezzlement, kickbacks.

2. Money and greed are powerful forces that become corrupting influences on people and their environment.

3. As money is seen to equal power, the wealthy people therefore is seen to have more power, giving them more authority over the poor. This creates a separation in the different socio-economic classes, which ultimately creates inequality in a community. Because of this, greed comes into play, causing chaos as violence erupts in order for a person to obtain what they want. Corruption is seen as those who have higher authority are able to abuse their power and get away with it.

4. We are today so ensnared in the process of selling and buying things in the market place, that we cannot imagine human life being otherwise.

5. Because, consumption and consumerism dominate social discourse and political agendas of all parties, consumerism hogs the limelight at centre stage as the prime objective of life.

6. The stability of life is an illusion. No matter how rich you are, you can always imagine being infinitely richer. The greater your imagination exceeds your station, the more corrupt you are likely to get. While it is true that we can all admire power and money, we must also ensure to remain prone to admire ideals.

7. The government is constantly boasting that the economic pie is getting bigger — how can it be true that most of us are getting smaller pieces? The answer, of course, is that a few people are getting much, much bigger slices! Although wages have stagnated, corporate profits have doubled.

8. The living standards of workers have continued to decline contrary to classical economic theory. This is largely due to political intervention based on corrupt relations between corporate capital and the state.

9. Are today's corporations the modern-day version of the 'mafia'? It seems that shame has vanished from our 'civilization'! How can it be that nobody can be held accountable? It seems that nobody is responsible for anything anymore!

10. Has institutional dishonesty become the norm? As producer and director Anthony Wall declared, 'The behaviour of society as a whole and its institutions in particular, tend to reflect prevailing attitudes within its government.'

11. In today's life, even market forces are frequently secondary to political factors, namely multiple forms of corruption in securing economic advantage.

12. Political corruption cannot take place without the knowledge of the state administrators. It transfers wealth from national-public use into private or corporate gain. It reduces the legitimacy and trust of the government in the eyes of its people, while it also widens and deepens internal class inequalities and undermines 'good' governance. Finally, it creates a 'culture' of corruption that siphons public resources from social services and productive investment to personal wealth.

13. The war against greed trumps all wars as it lies at the root of it all. During the Xmas celebrations, the archbishop of Canterbury had warned that human greed is threatening the environmental balance of the Earth. For the purported 'Christian' nation that we boast to be, the passion of greed reduces religious doctrine to just many dusty rules. Did

you hear any whisper of condemnation by the local church hierarchy regarding the prevailing ‘law of the jungle’? Neither did I!

14. The African Union calculates that every year over US$148 Billion is stolen from the continent by its leaders. That works out to more than a quarter of the continent’s entire Gross Domestic Product lost to corruption every single year.

12. Factory Farming

1. Contemporary animal agribusiness is the greatest evil ever perpetrated by humanity. There have been many horrors that were evil acts, but in scope and brutality perhaps none exceeds factory farming.

2. In the United States, over 1 million land animals are killed per hour. The vast majority endured lives of unrelieved suffering and abuse in factory farms. Humans have abused humans and nonhumans for millennia, but in terms of numbers, no human atrocity comes close to the contemporary institution of factory farming.

3. Genocides usually end with the extermination of the victims. In contrast, nonhumans are continually being bred in response to an insatiable appetite for flesh.

4. Of course, there have been times when human slavery has persisted for centuries, so the perpetual nature of factory farming is distinctive but not unique.

5. In general, when humans have killed or abused fellow humans, the intended reasons (however misguided or flatly incorrect they might be) related to important concerns. For example, many of the perpetrators of the Holocaust against the Jews, the Rwandan genocide of Tutsi, and the American extermination of most of the Native Americans believed that their crimes were necessary to preserve societies against major threats.

6. In contrast, factory farming serves only to meet a food preference. Moreover, the extreme brutality of factory farming reflects a desire to obtain flesh and other animal products as cheaply as possible. If people were willing to pay a little more for these products, their procurement would still entail abuse, but the degree of abuse could be far less.

7. Factory farmed animals are totally innocent. They never intentionally harm anyone (though, in their effort to escape pain or death, they do occasionally hurt farm workers).

8. Humans can often struggle on their own behalf, arguing against institutions that mistreat them or even fighting against their tormentors. In contrast, nonhumans have no effective means of resisting their human oppressors.

9. The preference for flesh is a leading cause of human-caused misery. Consuming flesh and other animal products has contributed heavily to global warming, squandering of limited natural resources, and reducing food security.

10. Farming has been drastically changed over the last 25 years. Small farms have been replaced by large, industrialized factory operations, and animals and the natural world have become mere commodities in the process.

11. While agribusiness has mastered the art of “growing” and killing animals faster and on a larger scale than ever before, the costs and negative results of this so called “cheap” food system are severe for us all.

12. Factory farms confine animals by the thousands in massive warehouses, treating them like production units rather than as living, feeling individuals. Millions are packed in cages and crates so tightly that they can’t walk, turn around or even stretch their limbs.

13. Mahatma Gandhi was correct when he said, “The moral progress of a nation can be judged by how its animals are treated.”

13. Fast Foods

THE DANGERS OF FAST FOOD

1. When James Dean said, “Live fast, die young, leave a beautiful corpse” in the 1950s, Americans were much thinner and fast food was a new invention. Today Americans are simply too chubby to live as fast as the lean 1950s idol. Instead they eat fast food, die younger than they should and leave increasingly obese corpses.

2. Along with smoking, substance abuse and inactivity, fast food presents one of the greatest public-interest health threats to people everywhere.

3. Fast food is almost universally dangerous and should probably carry a warning from the surgeon general. It contains meat-based carcinogens, is high in total calories and saturated fat and is a principal source of trans fat.

4. In a country obsessed with immediate gratification and conspicuous consumption, what could be more seductive than the capacity to consume excessively at a moment’s notice?

5. The dominance of the fast-food culture makes it possible to have almost continual, unhealthy moveable feasts–daily.

6. Not only is the food dangerous, but it promotes a lifestyle and culture that are also dangerous. Our lives are fast, frenetic and commercial. Food should be our sanctuary from the madness, not part of it.

7. It’s no accident that Dave Thomas, the happy CEO of Wendy’s who pushes the company’s burgers on TV, had a coronary bypass operation several years ago. As we can see on more recent commercials, he’s dropped a few pounds, but that hasn’t stopped him from hawking his products to the rest of us.

8. North American children are not eating well. Approximately 30 percent of them are obese, up more than 50 percent in the past 20 years. In general, children eat too much, and much of what they eat is unhealthy.

9. Most people know that fast food is not good for you, but many don’t realize how dangerous it really is. They probably know about the calories, saturated fat and maybe even the potential carcinogens in the beef. But maybe they think they can escape the worst of it by skipping the burger and having the Chicken McNuggets or the french fries. After all, fries are just potatoes cooked in vegetable oil, right? Unfortunately the fries may be worse than the burger. Why? Trans fats.

10. Trans fats are man-made fats that were virtually unknown to humans until 1911, when Procter & Gamble, the people who brought you Olestra, first marketed Crisco. In some ways this is another kind of high-fat fraud. You go into a fast food outlet and choose the fries instead of the burger, thinking you’re avoiding saturated fat. But it turns out that you’re no better off. Temperatures used for deep-frying liberate legions of deadly free radicals from fats. Even more frightening is the effect for multiple frying episodes. Fats that are used again and again for frying oxidize at frighteningly high rates.

11. Seven evils of Fast Foods;
    a. Substandard Ingredients
    b. Fat and Sugar for that Blobby Feeling
    c. Salt can lead to Hypertension
    d. Low Fiber equals Gut Problems
    e. Additives can Mess up your Body
    f. Nutrient-Poor—you get Sick
    g. Addictive—you can’t stop the gorging

14. Information Overload

1. Information overload (also known as infobesity or infoxication) is a term used to describe the difficulty of understanding an issue and effectively making decisions when one has too much information about that issue.
2. Information overload occurs when the amount of input to a system exceeds its processing capacity.
3. Decision makers have fairly limited cognitive processing capacity. Consequently, when information overload occurs, it is likely that a reduction in decision quality will occur.
4. The dawn of the information age and access to powerful and low cost data collection on automated basis has brought us more information than at any other point in history.
5. Managing information in daily life is no longer restricted to a wealthy elite but is a problem which faces nearly everyone. Social media, e-mail, websites, mobile apps, etc. all spill data into our lives daily.
6. Getting information from the Internet is like taking a drink from a fire hydrant
7. Digitizing content also removed barriers to another activity first made possible by the printing press: publishing new information. No longer restricted by centuries-old production and distribution costs, anyone can be a publisher today.
8. With the information floodgates open, content rushes at us in countless formats: Text messages and Twitter tweets on our cell phones. Facebook friend alerts and voice mail on our BlackBerrys. Instant messages and direct-marketing sales pitches (no longer limited by the cost of postage) on our desktop computers. Not to mention the ultimate killer app: e-mail.
9. There are even claims that the relentless cascade of information lowers people's intelligence. A few years ago, a study commissioned by Hewlett-Packard reported that the IQ
10. Of course, not everyone feels overwhelmed by the torrent of information. Some are stimulated by it. The tendency of always-available information to blur the boundaries between work and home can affect our personal lives in unexpected ways.

15. 24 X 7 News Addiction

1. Has news addiction crept up on you and started to take over your life?
2. Do you constantly feel an urge to 'just check' the news – on TV, radio and all your favorite internet news sites?
3. Nobody likes to show up at a restaurant or the office or even a party looking like they haven't a clue what's going on. Information is currency, and we like to have lots of it.
4. People who haven't got any are like poor relations, deserving of pity. Or contempt. Not only that, but they have nothing to say when everyone else is talking about the latest hot topic.
5. The world of 24/7 instant news that we now live in has got some serious downsides too. For example, the constant flow of new snippets of 'raw' information, with no context and little analysis, makes everything that's reported seem terribly urgent and important. When you stop and think about it, you realize that this can't be true. It's just the frenzied headlines that make it seem important. But the feeling is hard to escape.
6. That feeling of urgency, whether you like it or not, raises the emotional temperature and puts your brain on 'alert'. Something is going on… maybe something threatening… you might have to do something about it… but what? You don't consciously think about this while you're watching a news bulletin, but you are affected by the tone and style of what you see, sometimes even more than you are affected by the content.
7. Non-stop disaster, tragedy, violence and scandal can make you depressed and anxious.
8. News is bad for your health. It leads to fear and aggression, and hinders your creativity and ability to think deeply. The solution? Stop consuming it altogether.
9. New misleads - take the following event. A car drives over a bridge, and the bridge collapses. What does the news media focus on? The car. The person in the car. Where he came from. Where he planned to go. How he experienced the crash (if he survived). But that is all irrelevant. What's relevant? The structural stability of the bridge. That's the underlying risk that has been lurking, and could lurk in other bridges. But the car is flashy, it's dramatic, it's a person (non-abstract), and it's news that's cheap to produce.
10. News leads us to walk around with the completely wrong risk map in our heads. So terrorism is over-rated. Chronic stress is under-rated. The collapse of Lehman Brothers is overrated. Fiscal irresponsibility is under-rated. Astronauts are over-rated. Nurses are under-rated. News is irrelevant.
11. Out of the approximately 10,000 news stories you have read in the last 12 months, name one that – because you consumed it – allowed you to make a better decision about a serious matter affecting your life, your career or your business. The point is: the consumption of news is irrelevant to you. But people find it very difficult to recognise what's relevant.
12. News has no explanatory power - News items are bubbles popping on the surface of a deeper world. Will accumulating facts help you understand the world? Sadly, no. The relationship is inverted. The important stories are non-stories: slow, powerful movements that develop below journalists' radar but have a transforming effect. The more "news factoids" you digest, the less of the big picture you will understand. If more information leads to higher economic success, we'd expect journalists to be at the top of the pyramid. That's not the case.
13. News is toxic to your body**.** It constantly triggers the limbic system. Panicky stories spur the release of cascades of glucocorticoid (cortisol). This deregulates your immune system and inhibits the release of growth hormones. In other words, your body finds itself in a state of chronic stress. High glucocorticoid levels cause impaired digestion, lack of growth (cell, hair, bone), nervousness and susceptibility to infections. The other potential side-effects include fear, aggression, tunnel-vision and desensitization.
    a. News increases cognitive errors. News feeds the mother of all cognitive errors: confirmation bias.
    b. News inhibits thinking. Thinking requires concentration. Concentration requires uninterrupted time. News pieces are specifically engineered to interrupt you.

c. News works like a drug. As stories develop, we want to know how they continue. With hundreds of arbitrary storylines in our heads, this craving is increasingly compelling and hard to ignore.
d. News wastes time.
e. News makes us passive. News stories are overwhelmingly about things you cannot influence.
f. News kills creativity. **T**hings we already know limit our creativity. This is one reason that mathematicians, novelists, composers and entrepreneurs often produce their most creative works at a young age.

16. Video Games and TV Addiction

1. Despite not appearing in the Diagnostic and Statistical Manual of Mental Disorder (DSM), there has been growing concern about people who appear to be obsessed with video games and spend far too much time playing.

2. Addiction to video games is being considered for upcoming editions of the DSM, but for now it is not recognized as an official clinical problem.

3. Regardless of its unofficial status, there is little question that some individuals (whether they are kids, teenagers, or adults) play video games excessively and that video game addiction can create problems in other important areas of their lives.

4. This is not to imply that everyone who plays video games becomes addicted – in fact, only a small minority seem to develop significant problems.

5. Millions of people play video games in moderation as a way to spend time with friends, relax after a stressful day, and as a simple form of entertainment.

6. Still, keeping gaming habits under control is not something that comes easily to everyone. For some people, online computer gaming becomes the most important thing in their lives.

7. Relationships may suffer when one partner is neglected in favor of video games.

8. When video games are no longer a simple diversion from the real world but an obsession that overtakes all other activities, this can lead to numerous negative consequences in the gamer's life.

9. Problems Associated with an Addiction to Video Games
   a. Psychological
   b. Physical and Health
   c. Family
   d. Financial
   e. School / University - Academic success is often one of most obvious causalities of video game addiction.
   f. Interpersonal Impact

THE SYMPTOMS AND RISKS OF TELEVISION ADDICTION

1. Studies conducted with self-identified TV addicts have shown that those considering themselves addicted to television were more generally unhappy, anxious, and withdrawn than other people who watch television.

2. Research has revealed disturbing evidence that excessive TV watching is associated with a shorter lifespan. Those in the highest risk category watched an average of 6 hours of television a day, and had a lifespan nearly 5 years shorter than people who did not watch TV.

17. Globalization

1. For Pierre Bourdieu, France's leading sociologist of culture and celebrated author, as for many other critics of globalization, what is particularly vexing is the recent retreat of national governments from adequately funding welfare, medical care, housing, public transportation, education, and culture. The neoliberal focus of the past few decades upon privatization, deregulation, and self-help, characteristic of British, American, French, and practices promoted globally by the unelected and non-democratic World Bank, International Monetary Fund, and World Trade Organization (WTO)—beget a wide array of problems: new desocialization policies, promotion of a cult of possessive individualism, union busting, entrepreneurial downsizing, labor "flexibilization," economic inequality, and erosion of a broad range of protections such as those against foreign ownership, investment, and cultural hegemony.

2. The quest for maximum short-term profits and reduced expenditures is seeping into every nook and cranny of life.

3. This economic regime, and "infernal machine" in Bourdieu's words, employs a new mode of discipline and "domination founded upon the institution of insecurity", which is today becoming a way of life (not just of labor) for increasing numbers of people across all classes. As a condition of work, job insecurity affects communication, medical, and educational staff as much as ordinary laborers, low-level white collar employees, and, of course, the growing reserve army of unemployed, dislocated, and part-time, flexibilized workers.

4. Across all countries workers are pitted against one another. Ironically, notes Bourdieu, this neoliberal social insecurity, in its transnational spread, provides a tangible foundation for the emerging solidarity of Lilliputians.

5. They came for the steel companies and nobody said anything. They came for the auto companies and nobody said anything. They came for the office companies, people who did white-collar service jobs, and no one said anything. And they came for the professional jobs that could be outsourced, and nobody said anything.

6. Globalization is fueling "The Great Disruption," there are finite resources on this planet, and that environmental issues, inequities and financial crises are bringing the world to the brink.

7. "I look at the world as an integrated system, so I don't see these protests, or the debt crisis, or inequality, or the economy, or the climate going weird, in isolation — I see our system in the painful process of breaking down…. the rich are getting richer and the corporations are making profits — with their executives richly rewarded.

8. **But, meanwhile, the people are getting worse off** — drowning in housing debt and/or tuition debt — many who worked hard are unemployed; many who studied hard are unable to get good work; the environment is getting more and more damaged; and people are realizing their kids will be even worse off than they are."

9. From terrorism to global warming, the evils of globalization are more dangerous than ever before. What went wrong? The world became dependent on a single superpower. Only by correcting this imbalance can the world become a safer place. The world today is more dangerous and less orderly than it was supposed to be. Ten or 15 years ago, the naive expectations were that the "end of history" was near. The reality has been the opposite. The world has more international terrorism and more nuclear proliferation today than it did in 1990. International institutions are weaker. The threats of pandemic disease and climate change are stronger. Cleavages of religious and cultural ideology are more intense. The global financial system is more unbalanced and precarious.

18. Ills of Mobile Phones

1. “It’s getting harder to differentiate between schizophrenics and people talking on the cell phone. It brings me up short to walk by somebody who appears to be talking to themselves.” Bob Newhart.

2. What started out as a means of adult communication has become a teen status symbol and a new age addiction, and it is not a drug: It’s a cell phone.

3. Recent research at Baylor University finds the link between materialism and IT devices are creating a generation of learned compulsive behavior. With four billion cell phones in use today, that’s a substantial amount of compulsion.

4. Cell phones act like a pacifier for impulsiveness, which is a major component of addiction. Studies reported by the Journal of Behavioral Sciences show that young adult send an average of 109.5 text messages daily and check their cell phones an average of 60 times a day.

5. 22 percent of cell phone users describe themselves as “Heavy users” with eight percent paying bills of $500 or more per month.

6. The device is creating what some experts call the “Narcissist Generation” – those who truly believe they are so important and popular with their thoughts they make themselves available to whom over needs.

7. Read on to find out the top five negative effects from your cell phone to your brain!

   A. Cell phone radiation has been classified as a “possible human carcinogen” by the World Health Organization. Yes, this is true! It poses an increased risk of brain cancer from heavy, long-term use.

   B. A two-year study conducted by the Radiation and Nuclear Safety Authority in Finland found that brain tissue damage could be caused by radiation from mobile phones.

   C. Your cell phone usage could very well give you a tumor!.

   D. While your child may constantly beg you for your cell phone to play the latest version of Candy Crush Saga, you might want to tell him no once in a while. Research shows that the bone marrow of a child’s head absorbs almost ten times more radiation than an adult’s. Yes, you read that right!

   E. Our cell phones are powerful enough to accelerate our brain activity, even after just 50 minutes of use. This just goes to show how sensitive our brain is to electromagnetic radiation, and how this could greatly affect us in the long-term.

19. Endless Wars

1. At the beginning of the 21st century, you're less likely to die a violent death than at any other point in human history. Yet the world is hardly a pacifist utopia, and remains riven by enduring, violent hostilities.
2. The Israeli-Palestinian conflict shows no signs of ending, and over the past year has got even worse.
3. Ethnic groups wage bloody war within Sudan, the Central African Republic, and the Democratic Republic of Congo.
4. Libya, Syria and Iraq may be descending into decades-long civil wars, as the so-called Islamic State tries to carve out a bloody Caliphate from these divided countries. Meanwhile, the smouldering embers of the Cold War are being stoked in Ukraine, as Europe and Russia face off.
5. Political scientists call such long-term rivalries from which there seems no way out intractable conflicts. They are among the world's most destructive social ills, and the most difficult to solve
6. Ending civil wars is hard. Hatreds within countries often run far deeper than between them. The fighting rarely sticks to battlefields, as it can do between states. Civilians are rarely spared. And there are no borders to fall back behind.
7. A war between two states can end much where it began without the adversaries feeling in mortal danger. With nowhere safe to go home to, both sides in a civil war often feel they must carry on fighting if they are to escape slaughter. As those fighting in Syria know, defeat often looks like death, rather than retreat (see article).
8. The motives vary. Some act out of humanitarian concern. Others seek influence, or a higher international profile. But above all, outsiders have learned that small wars can wreak preventable havoc. Fractious Afghanistan bred al-Qaeda; the genocide in tiny Rwanda spread murder across a swathe of neighbours. In coastal west Africa, violence is passed back and forth between Guinea, Liberia, Sierra Leone and Ivory Coast like a winter cold round an office. "The best predictor of a civil war is having one next door,"
9. America's Endless Wars - Official Washington likes to think of its wars as "humanitarian," supposedly bringing "democracy" to faraway lands, but the wars really bring death, destruction and despair.
10. Proxy Wars – most modern wars have been proxy wars whereby foreign powers instigate wars for various purposes.
11. Rita Corbin's celebrated woodcut listing "The Works of Mercy" and "The Works of War."**"The Works of Mercy"** - Feed the hungry; Give drink to the thirsty; Clothe the naked; Visit the imprisoned; Care for the sick; Bury the dead." **"The Works of War: "** - Destroy crops and land; Seize food supplies; Destroy homes; Scatter families; Contaminate water; Imprison dissenters; Inflict wounds, burns; Kill the living."

20. Military Industrial Complex

1. January 17, 1961, Presidential, on this day in 1961, Dwight D. Eisenhower ends his presidential term by warning the nation about the increasing power of the military-industrial complex.

2. Eisenhower expressed concerns about the growing influence of what he termed the military-industrial complex.

3. More than 50 years after President Eisenhower's warning, Americans find themselves in perpetual war. Perpetual war represents perpetual profits for the ever expanding business and government interests.

4. Before and during the Second World War, American industries had successfully converted to defense production as the crisis demanded, but out of the war, what Eisenhower called a permanent armaments industry of vast proportions emerged.

5. This conjunction of an immense military establishment and a large arms industry is new in the American experience Eisenhower warned, [while] we recognize the imperative need for this development, we must not fail to comprehend its grave implications, we must guard against the acquisition of unwarranted influence.

6. The potential for the disastrous rise of misplaced power exists and will persist. Eisenhower cautioned that the federal government's collaboration with an alliance of military and industrial leaders, though necessary, was vulnerable to abuse of power. Ike then counseled American citizens to be vigilant in monitoring the military-industrial complex.

7. Ike also recommended restraint in consumer habits, particularly with regard to the environment. As we peer into society's future, we–you and I, and our government–must avoid the impulse to live only for today, plundering, for our own ease and convenience, the precious resources of tomorrow. We cannot mortgage the material assets of our grandchildren without asking the loss also of their political and spiritual heritage.

8. The military–industrial complex (MIC) is an informal alliance between a nation's military and the defense industry which supplies it, seen together as a vested interest which influences public policy.

9. A driving factor behind this relationship between the government and defense-minded corporations is that both sides benefit—one side from obtaining war weapons, and the other from being paid to supply them.

10. In the last eight years, trillions of dollars have flowed to military and homeland security companies. When the administration starts a war like in Libya, it is a windfall for companies who are given generous contracts to produce everything from replacement missiles to ready-to-eat meals.

11. There are thousands of lobbyists in Washington to guarantee the ever-expanding budgets for war and homeland security.

12. It is not just revolving doors that tie federal agencies to these lobbyists and companies. The war-based economy allows for military and homeland departments to be virtually untouchable. Environmental and social programmes are eliminated or curtailed by billions as war-related budgets continue to expand to meet "new threats".

13. A massive counterterrorism system has been created employing tens of thousands of personnel with billions of dollars to search for domestic terrorists.

21. Weapons of Mass Destruction

1. A weapon of mass destruction is a nuclear, radiological, chemical, biological or other weapon that can kill and bring significant harm to a large number of humans or cause great damage to human-made structures (e.g., buildings), natural structures (e.g., mountains), or the biosphere.
2. The scope and usage of the term has evolved and been disputed, often signifying more politically than technically. Originally coined in reference to aerial bombing with chemical explosives, since World War II it has come to refer to large-scale weaponry of other technologies, such as chemical, biological, radiological, or nuclear.
3. Weapon of mass destruction (WMD), weapon with the capacity to inflict death and destruction on such a massive scale and so indiscriminately that its very presence in the hands of a hostile power can be considered a grievous threat. Modern weapons of mass destruction are either nuclear, biological, or chemical weapons—frequently referred to collectively as NBC weapons.
4. The proliferation of nuclear weapons and other weapons of mass destruction (WMD), and their delivery systems, could have incalculable consequences for national, regional and global security. During the next decade, proliferation will remain most acute in some of the world's most volatile regions.
5. With the dropping of the atomic bomb on Hiroshima, Japan, the fearsome power of conventional bombs paled before the spectacle of an entire city centre destroyed and some 66,000 people instantly killed by the blast and heat of a single nuclear weapon.
6. (By the end of the year, radiation injury brought the death toll to 140,000.) During the Cold War the United States, the Soviet Union, and other major powers built up enormous stockpiles containing tens of thousands of nuclear bombs, missile warheads, and artillery shells—so many that the military and diplomatic standoff of that era was sometimes described as a "balance of terror."
7. At the same time both superpowers also amassed stockpiles of chemical and biological weapons, the two other principal types of modern WMD. Chemical weapons consist of liquids and gases that choke their victims, poison their blood, blister their skin, or disrupt their nervous system.
8. The relative ease with which both biological and chemical agents can be prepared, packaged, delivered, and set off have raised fears that they might become the weapon of choice of terrorists.
9. Indeed, since the end of the Cold War the main concern regarding all WMD has been proliferation, that is, the potential for lesser powers, "rogue states," or international terrorist groups to acquire the means to produce and deliver WMD.

22. Addiction to Fossil Fuels

1. A fossil fuel is a fuel formed by natural processes, such as anaerobic decomposition of buried dead organisms, containing energy originating in ancient photosynthesis. The age of the organisms and their resulting fossil fuels is typically millions of years, and sometimes exceeds 650 million years.
2. Fossil fuels, including coal, oil and natural gas, are currently the world's primary energy source. Formed from organic material over the course of millions of years, fossil fuels have fueled U.S. and global economic development over the past century. Yet fossil fuels are finite resources and they can also irreparably harm the environment.
3. According to the Environmental Protection Agency, the burning of fossil fuels was responsible for 79 percent of U.S. greenhouse gas emissions in 2010. These gases insulate the planet, and could lead to potentially catastrophic changes in the earth's climate.
4. Fossil fuels have several drawbacks:
   a. Fossil fuels pollute - The particles released from burning fossil fuels also have negative effects for our planet as a whole. Compounds like carbon dioxide and methane enter our atmosphere and trap heat from the sun, which has lead to a continuous rise in average global temperatures since the early 1900s. Rising temperatures can lead to everything from natural habitat destruction to sea level rise.
   b. fuels are a nonrenewable resource
   c. Fossil fuels are unsafe, and accidents happen
   d. The Hidden Costs of Fossil Fuels

      1. Pollution and land degradation
      2. Heal Costs
      3. Extraction Costs
      4. Transporting Costs
      5. Global warming emissions.
      6. Mining
      7. Drilling
      8. Land Use
      9. Water Usage and Pollution
5. Oil and gas wastewater can also impact aquatic wildlife. Oil and grease leaked into water systems can adhere to fish and waterfowl and destroy algae and plankton, disrupting the primary food sources of fragile aquatic ecosystems. And heavy metals in the wastewater can be toxic to fish, even in low concentrations, and may be passed through the food chain, adversely affecting humans and larger animals.

23. Pharma World

1. A lot of money can be made from healthy people who believe they are sick. Pharmaceutical companies sponsor diseases and promote them to prescribers and consumers.
2. There's a lot of money to be made from telling healthy people they're sick. Some forms of medicalising ordinary life may now be better described as disease mongering: widening the boundaries of treatable illness in order to expand markets for those who sell and deliver treatments.
3. Some Pharmaceutical companies are actively involved in sponsoring the definition of diseases and promoting them to both prescribers and consumers.
4. The social construction of illness is being replaced by the corporate construction of disease.
5. Whereas some aspects of medicalisation are the subject of ongoing debate, the mechanics of corporate backed disease mongering, and its impact on public consciousness, medical practice, human health, and national budgets, have attracted limited critical scrutiny.
6. Within many disease categories informal alliances have emerged, comprising drug company staff, doctors, and consumer groups. Ostensibly engaged in raising public awareness about underdiagnosed and undertreated problems, these alliances tend to promote a view of their particular condition as widespread, serious, and treatable.
7. Although some sponsored professionals or consumers may act independently and all concerned may have honourable motives, in many cases the formula is the same: groups and/or campaigns are orchestrated, funded, and facilitated by corporate interests, often via their public relations and marketing infrastructure.
8. Expensive new medicines – a cure for hepatitis in the US, a breast cancer drug in the UK – are once again raising a fraught question: how much is it reasonable to ask people to pay for drugs that will keep them alive?
9. Critics blame rising prices on a profiteering industry that has arrogated to itself the power to place a price on life. The companies reply that developing drugs is now more expensive than it has ever been.

24. Control of the Press and News Manipulation

1. The media is manipulated in all manners, for example through professional public relations (PR), and covert and overt government propaganda which disseminates propaganda as news. What are often deemed as credible news sources can often knowingly or unknowingly be pushing political agendas and propaganda.

2. The impacts of public relations cannot be underestimated. In the commercial world, marketing and advertising are typically needed to make people aware of products. There are many issues in that area alone (which is looked at in this site's section on corporate media.)

3. When it comes to propaganda for purposes of war, for example, professional public relations firms can often be involved to help sell a war. In cases where a war is questionable, the PR firms are indirectly contributing to the eventual and therefore unavoidable casualties. Media management may also be used to promote certain political policies and ideologies. Where this is problematic for the citizenry is when media reports on various issues do not attribute their sources properly.

4. Some techniques used by governments and parties/people with hidden agendas include:

   a. Paying journalists to promote certain issues without the journalist acknowledging this, or without the media mentioning the sources;
   b. Governments or individuals contracting PR firms to sell a war or other important issues
   c. Disinformation or partial information reported as news or fact without attributing sources that might be questionable
   d. PR firms feeding stories to the press without revealing the nature of the information with the intention of creating a public opinion (for example, to support a war, as the previous link highlights where even human rights groups fell for some of the disinformation, thus creating an even more effective propaganda campaign).

5. The Gulf War in Iraq, 1991, highlighted a lot of PR work in action. The 2003 war on Iraq saw similar amounts of public relations and media manipulation at work. A detailed account was given by Ahmed Chalabi who seemed to boast how he helped influence major politicians and countries into drumming the beats of war against Iraq.

6. Smear tactics are often used to discredit, stain or destroy the reputation of someone. It is unfortunately common-place and is an age-old technique. It can either involve outright lies, or a distortion of the truth.

7. Since March 2005 has seen some revelations in the mainstream about fake news whereby organizations and journalists working for public relations firms or a government department have produced news reports. The problem arises where these reports are either presented as factual news by journalists, or have been rebroadcast by news stations without revealing that the segment is from an organization or the government, thus giving it the appearance of genuine news.

8. This is the age of the fake. We live in an era where the gap between how the world is and how powerful interests try to portray it has grown dramatically wider. Virtually nothing in public debate these days is free of the virus of fakery….

9. Today distortions [such as the famous Stalinist airbrushing of Trotsky from photographs of the Russian revolutionary period] are much more easily contrived. The advent of the digital camera has made it easier, cheaper and quicker to take and distribute photographs — and to manipulate them.

10. In March 2005, the New York Times revealed that there has been a large amount of fake and prepackaged news created by US government departments, such as the Pentagon, the State Department and others, and disseminated through the mainstream media.

11. The New York Times noted a number of important issues including,
    A. The US Bush administration has aggressively used public relations to prepackage news. Issues with this have included that:
       a. A number of these government-made news segments are made to look like local news (either by the government
       department or by the receiving broadcaster);
       b. Sometimes these reports have fake reporters such as when a reporter covering airport safety was actually a
       public relations professional working under a false name for the Transportation Security Administration;
       c. Other times, there is no mention that a video segment is produced by the government;
       d. Where there is some attribution, news stations simply rebroadcast them but sometimes without attributing the
       source.

    B. These segments have reached millions;
    C. This benefits both the government and the broadcaster;
    D. This could amount to propaganda within the United States as well as internationally.

25. Technology Addiction

1. Technology addiction — sometimes called Internet addiction is a fairly new phenomenon. It's often described as a serious problem involving the inability to control use of various kinds of technology, in particular the Internet, smartphones, tablets and social networking sites like Facebook, Twitter and Instagram.
2. Now that it's effortless to text and access the Web and social media from almost anywhere, more of us are dependent on communicating via the tiny computers we carry with us.
3. So it's no surprise that health experts are seeing a rise in addictive tendencies that involve technology. (Technology includes, of course, video games, cybersex/online pornography and online gambling, and these addictions are explored in more depth in other sections on Addiction.com.)
4. Even if addiction to different types of technology isn't yet a recognized disorder on its own, the problem has been on the radar of health professionals since the 1990s.
5. Technology addiction is recognized as a widespread health problem in other countries, including Australia, China, Japan, India, Italy, Japan, Korea and Taiwan, which have established dedicated clinics to address this growing issue.
6. It's not simply the amount of time spent with the digital device that defines an addict, though, but how excessive use adversely affects someone's mental and physical health, daily life, relationships and academic or job performance. Symptoms can include:

    a. Compulsive checking of text messages
    b. Frequent changing of Facebook status and uploading of "selfies"
    c. A feeling of euphoria while on the Web
    d. Social withdrawal
    e. Loss of interest in activities that don't involve a computer, phone or gadget
    f. Feelings of restlessness when unable to go online
    g. IAD has also been linked to stress, sleep disorders and depression. Check out the section on Symptoms for a full list of potential warning signs.

7. If you're concerned that you or a loved one is addicted to technology, it may be time to reach out to a health care professional or psychotherapist who can evaluate symptoms, make a diagnosis or rule out an addiction to technology and recommend a treatment plan. The good news is that there are a variety of available resources to help, whether you've just noticed the problem or have seen it worsen over time.
8. Your phone buzzes. A message, an Instagram post, a tweet — some bit of digital effluvia has come in, and it's right there, promising a brief but necessary hit of connection. All you have to do is look.
9. The issue of "tech addiction" has been a staple of tabloidy panics for as long as anyone can remember. Yet this ancient worry has now taken on a new and more righteous flavor.
10. What is interesting is who has been pushing the issue. Several former Facebook executives, the very people who set up the Like-based systems of digital addiction and manipulation that now rule much of online life, have begun to speak out in alarm about our slavishness to digital devices.
11. Even Wall Street has weighed in, with two large investors asking Apple in January to study the health effects of its products and to make it easier for parents to limit their children's use of iPhones and iPads.

26. Internet Hackers - Modern Day Pirates?

1. Hacking means the act of breaching into a computer or network. Hacking can occur two ways, it can occur in person if the hacker has physical access to the computer or network or through the Internet which tends to be the most common way.
2. Some of the illegal acts performed during hacking are stealing important data like credit card information, corrupt a computer system, and create and disperse spam.
3. Hacking has become quite easier due to the growing wireless network popularity, which allows hackers to gain unauthorized access to a wireless network by simply being a couple a hundred feet from an unsecured wireless access point.
4. Hacking is not only a concern for the average computer user, but can be a threat to national security to countries. There are so many systems that are run for security purposes with the use of Internet connection that a hacker could be able to get into a major government system. This has bought an increase risk in cyberterrorism.
5. There are many things that could be affected by cyberterrorism that include: banks, airlines, stock markets, and big systems like the nation's power grid.
6. The majority of hackers conduct broad-based, indiscriminate probes of any and all computers connected to the internet.
7. Targeted attacks against large businesses or government entities are far less common, but garner a lot of attention. This is why it is important for any computer user to take security measures that lessens the ability of hackers to steal the resources of a system.
8. Hijacked computers can be just as valuable as stolen data due to their raw computing power and internet connections. Any hijacked computer is a worthy addition to the hackers' arsenal of zombie computers and botnets. Hackers will use hijacked computers to send out spam and emails containing viruses and other malware, disseminate illicit materials or take part in hacking attacks in other computer networks.
9. In summary, hackers may use hijacked systems to perform the following illegal actions.

   • To send unwanted spam.
   • To engage in click fraud (A type of Internet crime that occurs in pay-per-click online advertising when a person, automated script or computer program imitates a legitimate web user clicking on an ad, for the purpose of generating a charge per click).
   • To send malicious emails to your friends, family and clients. In this way hijacked systems function as a spreader of viruses, malware and spyware.
   • To install a key logger and capture every username and password typed; they can then use your computer to log into your financial accounts; conduct transactions and perpetrate electronic theft.
   • To mount a coordinated attack on select targets, such as banks or governmental institutions.
   • To sniff out other traffic on your network. Any networked computer can be used to "sniff" out and copy traffic on your network, such as the network traffic from credit card or other data processing servers.
   • To use your computer to send out data through the internet. In extreme cases, they can use it as a hub to exchange illicit, illegal or stolen materials, as a relay station to hide the true origin of certain content or as a message board for shady activities

- the six most common ways your data can be stolen are Phishing, Malware Malicious mobile apps, Smishing, Physical security threats and Insecure networks

27. Cyber Warfare

1. Cyberwarfare is any virtual conflict initiated as a politically motivated attack on an enemy's computer and information systems. Waged via the Internet, these attacks disable financial and organizational systems by stealing or altering classified data to undermine networks, websites and services.
2. Cyber warfare involves the actions by a nation-state or international organization to attack and attempt to damage another nation's computers or information networks through, for example, computer viruses or denial-of-service attacks.
3. Military and financial computer systems are at risk for the disruption of normal operations and equipment, such as communications, fuel, power and transportation infrastructures.
4. Espionage and/or security breaches: These illegal exploitation methods are used to disable networks, software, computers or the Internet to steal or acquire classified information from rival institutions or individuals for military, political or financial gain.
5. A common perception of a hacker is that of a teenage geek who fools breaks into computer systems for fun. While this perception was perhaps once true, modern cyberwarfare involves well trained, well funded professionals backed by nation states. Examples, such as the Stuxnet virus, are given by some experts to demonstrate that much more is happening behind the scenes, and that the front lines in future wars will be digital.
6. The big issue with cyber warfare is it's often very hard to work out who launched the attack. Of course, we are able to assume and use some intelligence to uncover which country, state or group may have been responsible, but it's easy to mask an identity online, and it's equally easy to hide the true source of hacks, malware infections and other attack methods.
7. Military organisations and intelligence agencies have even been known to enlist the help of freelance criminals and other groups to launch an attack on their behalf, making it even trickier to pin down the perpetrator and punish them appropriately.
8. We know that Russia and China are developing cyber weapons to use in any future cyber conflict, and the US, France and Israel are just as active as nation states leading the way in this endeavour.
9. No weapon is more coveted than the zero-day exploit that targets a vulnerability nobody, other than the attackers, are aware of yet. Stuxnet used multiple 0 days, with a dark market value in the millions, to ensure success. These are the secret weapons of the cyber arms race, more likely to be denied than proudly declared as defiant threats to would-be aggressors.
10. False flags - the only cyber weapon that is perhaps even more dangerous and disruptive than the zero day is the false flag. We know that, for example, the attack by the so-called 'Cyber Caliphate' claiming to be affiliated to ISIS on a US military database was a false flag operation by the Russian state-sponsored hacking group APT 28. Why does this matter? Because the US retaliated with kinetic attacks on cyber communication channels and drone strikes against human targets in Syria.

28. Modern Technologies, good for convenience but not good for the environment

1. The dehumanization of human beings by the modern, automated world is escalating. The biggest problem with technology, which can eventually lead to the downfall of humanity, is people. It seems that our technology has surpassed our ethical capacity.

2. Since technology can give an individual a massive amount of power, and the ability to inflict catastrophic amounts of damage, the consequences for people's actions are greater. In Shelley's Frankenstein, Hawthorne's "The Birthmark," and Kubrick's 2001: A Space Odyssey and Dr. Strangelove, we meet with scientists, astronauts, and military personnel who are negatively affected by the technologies they have created. In each of these stories a different type of technology is revealed: bio technology, chemical technology, computer technology, and weapons technology. Today our technology seems to have outstripped our means to control it in so many areas that one could just as easily imagine a genetic, medical, environmental, or technological apocalypse.

3. In essence, according to the IMF, technological innovation is what causes economic inequality among the human race. Yes, you read that right: technology – and not just the machinery, but people with tech skills – are to blame for the fact that some people are dirt poor and others disgustingly rich.

4. The authors admit that globalisation has also been a factor in the way the poor are now so much further behind the rich, but technology is the true villain.

5. "Increased financial globalisation – and foreign direct investment in particular – has also played a role in increasing inequality, but contrary to popular belief, increased trade globalisation is associated with a decline in inequality," say the IMF writers.

6. "Technological advances have contributed the most to the recent rise in inequality." This is held to be because higher tech "increases the premium on skills and substitutes for relatively low-skill inputs".

7. In other words, overpaid IT people with their systems, networks etc are stealing bread from the mouths of poor but honest file clerks, printers, semaphore operators, call-centre people, recording execs and so on.

8. IT, powered machinery, cheap tools, new drugs – it's all evil and divisive, promoting war, rebellion and strife. Big global business trading in old-fashioned stuff like commodities – you know, mining, agribusiness – these people are your friends.

9. Most of the mainstream financial press have chosen to ignore this dazzling suggestion from the world globalisation bureau that globalisation is great and if something has gone wrong it must be someone else's fault.

10. Points to Ponder:

– Who taught man to destroy himself a million times over.
– Why is it that the humble fly and the mosquito have not been eradicated and people still die of Malaria. It is because research is not funded in this area but trillions of dollars go towards research in arms and newer ways of killing our fellowmen.
– Why is there no cure for the common cold or herpes or aids or cancer though we have technology that can guide a satellite millions of miles out into outer space.
– Who created the filth and garbage that reminds the world of the dark side of science
– Who is polluting the earth, its air, its rivers, its human beings with millions of chemicals
– Why and Who invented DDT, insecticides, pesticides, fungicides, plastics and other unrequited stuff that we don't really need.
– Why and who invented plastic explosives and what was the need for this.
– Why are thousands upon thousands of people dying of cancer

– Why are thousands upon thousands of people dying of heart related disease.
– Why were our ancestors simple and happy while modern generations are confused and searching with all their technology.
– When there were a few cars it was ok, now imagine 900,000,000 (900M) vehicles, ships, planes and engines burning out the precious oxygen and giving out smoke and pollution.
– We have drugs that preserve life but who gave man the science to destroy himself with drugs.

11. There are three main critiques of big tech. The first is that it is destroying the young. The second critique of the tech industry is that it is causing this addiction on purpose, to make money. The third critique is that Apple, Amazon, Google and Facebook are near monopolies that use their market power to invade the private lives of their users and impose unfair conditions on content creators and smaller competitors.

29. Super Bugs

1. Superbugs are viral infections caused by bacteria that are resistant to common antibiotics. Understanding the gravity behind having one of these infections can help you appreciate the need to prevent exposure and infection.
2. The term superbug was originally coined “by the media to describe bacteria that cannot be killed using multiple antibiotics.” However, “doctors often use phrases like ‘multidrug-resistant bacteria’ rather than ‘superbug.’ That’s because a superbug isn’t necessarily resistant to all antibiotics.”
3. Superbugs aren’t specific types of bacteria; all bacteria species can turn into superbugs. “Misusing antibiotics (such as taking them when you don’t need them or not finishing all of your medicine) is the single leading factor contributing to this problem, the CDC says. The concern is that eventually doctors will run out of antibiotics to treat them.”
4. Or worse, they won’t react to antibiotics at all. “When used properly, antibiotics can help destroy disease-causing bacteria. But if you take an antibiotic when you have a viral infection like the flu, the drug won’t affect the viruses making you sick.
5. Instead, it’ll destroy a wide variety of bacteria in your body, including some of the ‘good’ bacteria that help you digest food, fight infection, and stay healthy. Bacteria that are tough enough to survive the drug will have a chance to grow and quickly multiply. These drug-resistant strains may even spread to other people.
6. Over time, if more and more people take antibiotics when not necessary, drug-resistant bacteria can continue to thrive and spread. They may even share their drug-resistant traits with other bacteria. Drugs may become less effective or not work at all against certain disease-causing bacteria.”

30. Global Currency Manipulation

1. What's the point of free-trade deals if governments can wipe out the benefits with monetary maneuvers?

2. The international monetary system, devised in 1944, was based on fixed exchange rates linked to a gold-convertible dollar. No such system exists today. And no real leader can aspire to champion both the logic and the morality of free trade without confronting the practice that undermines both: currency manipulation.

3. When governments manipulate exchange rates to affect currency markets, they undermine the honest efforts of countries that wish to compete fairly in the global marketplace. Supply and demand are distorted by artificial prices conveyed through contrived exchange rates. Businesses fail as legitimately earned profits become currency losses.
4. It is no wonder that appeals to free trade prompt cynicism among those who realize the game is rigged against them.
5. China has long been intervening directly in the foreign-exchange market to manipulate the value of its currency. The People's Bank of China announces a daily midpoint for the acceptable exchange rate between the yuan and the dollar, and then does not allow its currency to move more than 2% from the target price.
6. When the value of the yuan starts to edge higher than the desired exchange rate, China's government buys dollars to push it back down. When the yuan starts to drift lower than the desired rate, it sells off dollar reserves to buy back its own currency.
7. More than 20 countries have increased their aggregate foreign exchange reserves and other official foreign assets by an annual average of nearly $1 trillion in recent years.
8. This buildup—mainly through intervention in the foreign exchange markets—keeps the currencies of the interveners substantially undervalued, thus boosting their international competitiveness and trade surpluses. The corresponding trade deficits are spread around the world, but the largest share of the loss centers on the United States.
9. Nine of the most significant currency manipulators: China, Denmark, Hong Kong, Korea, Malaysia, Singapore, Switzerland, Taiwan and Japan.

31. Arm Sales to Poorer Nations

1. World military spending outdoes everything else. World military spending has now reached one trillion dollars, close to Cold War levels.

2. Although the Cold War came to an end over a quarter century ago, international arms sales only declined temporarily at the end of the last century.

3. Instead, the United States under President Trump is extending its arms superiority over the rest of the world.

4. Meanwhile, some fast-growing developing countries are now arming themselves much faster than their growth rate. Such expensive arms imports mean less for development and the people, especially the poor and destitute who constitute several hundred million in India alone.

5. Arms-exporting governments are reneging on their promises by failing to take into account the impact that the arms trade has on poverty, Oxfam says in a report published this week.

6. Arm Sales are diverting resources from areas such as health and education. The report, Guns or Growth, says six developing countries — Oman, Syria, Burma, Pakistan, Eritrea and Burundi — spend more on arms than they do on health and education combined.

7. It says governments that sell arms can assess the impact these sales will have on poverty in their client nations, and that they should agree on an international treaty to control the trade and safeguard sustainable development and human rights.

8. In 2002 weapons delivered to Asia, the Middle East, Latin America and Africa constituted more than two-thirds of the value of all arms deliveries worldwide

9. The five biggest exporters during 2012–2016 were the United States, Russia, China, France and Germany.

10. In 2002, 90% of all arms deliveries to Asia, the Middle East, Latin America and Africa came from the five permanent members of the United Nations Security Council.

11. Corrupt practices are common. The industry comes second in the “bribe payers index’’ of Transparency International.

12. India, the world’s largest arms importer, has more of the world’s abject poor (280 million) than any other country.

13. As mentioned above, the War on Terror has seen the U.S. selling weapons or training to almost 90% of the countries it has identified as harboring terrorists. Yet, for decades, a lot of the arms that the West has sold has gone into the hands of military dictatorships or corrupt governments. This can have the additional intention or effect of hampering any form of democracy in those countries.

14. Last year the U.S. controlled half of the developing world’s arms market…. This dominance of the global arms market is not something in which the American public or policy makers should take pride in. The U.S. routinely sells weapons to undemocratic regimes and gross human rights abusers.

32. Exploitation of poor

1. The exploitation of poor and under-served people is standard fare in capitalistic societies. It is very much a reality. If business and industry want to be steadfastly profitable, exploitation of the poor and undeserved might be necessary.
2. Exploited people usually cooperate. Poor and under-served people are quite observable, and they have no end. They envision life's stations to be limited, and most operate under the directives of others. Some even desire to be exploited. These are their adjusted life style choices.
3. A new day surely beckons for poor and undeserved persons. But for the arrival to be complete, they must consider what is necessary in order for them to protect their interests. It is reasonable to believe poor and undeserved people are capable of overcoming exploitation.
4. Therefore, here are seven things poor and undeserved people must overcome in time:

   a. Outrageous prices. Poor and under-served people pay more for goods and services, e.g., financial, legal. High prices face them constantly, and with few alternatives.

   b. Economic subjugation. Capitalism focuses on economic winners and losers: "When I win, you lose; when you lose, I win." Capitalists do not readily share their loot. Emulate them.

   c. Education. Poor and under-served populations are at the mercy of communities educationally in that education is often viewed as a privilege for the advantaged.

   d. Mean-spiritedness. This promotes a fear that if parity is reached by too many people, an under class will not readily be available for exploitation. Exploitation needs people.

   e. Voodooism. Some people feel voodooism (improbable, unrealistic suppositions) encompasses the core of their existence. They act the way voodooists say they must act.

   f. Incarceration. The U.S. prison system, with its spin-off industries, is in a growth-mode. It awaits daily arrivals, especially the young, who are eager to enter its gates.

   g. Life. Life is hard for exploited people. American actress Katharine Hepburn (1907-2003) wrote: "Life is to be lived. If you have to support yourself, you had bloody well better find some way that is going to be interesting. And you don't do that by sitting around."

   h. Economically viable societies need poor and under-served people for exploitation. Believe this.

5. Poverty has existed for a very long time, and to varying extents it remains worldwide still now in this 21st century. But to 2018 the 21st century has seen China especially and also India and some Latin America most reducing poverty.
6. Poverty is very harmful to those affected including their health and lifespan, and is also very harmful to societies and to the world generally and it is not necessary.
7. Absolute poverty involves people and their children having extreme difficulty in merely surviving. Such poverty at its worst can involve hunger amounting to starvation, often combined with inadequate shelter or housing and clothing.
8. Absolute poverty has been common in more primitive societies, and is still common in many Third World countries in Africa, Asia and South America especially where it can afflict the majority of the population.
9. But many of today's richer societies like the USA and UK have a poor who are a minority and suffer relative poverty – which generally involves the inability to obtain social necessities available to the majority and is often intensified by social exclusion.
10. In a society where 90% rely on their own computer and car, then those who cannot afford these things may function badly and are poor and may well be ostracised or

socially excluded (unlike someone richer who chooses to not have such things and may merely be considered eccentric).

33. Divide and Rule Policies

1. Divide and rule (or divide and conquer, from Latin dīvide et imperā) in politics and sociology is gaining and maintaining power by breaking up larger concentrations of power into pieces that individually have less power than the one implementing the strategy.
2. The concept refers to a strategy that breaks up existing power structures, and especially prevents smaller power groups from linking up, causing rivalries and fomenting discord among the people. It is still used today in many different forms and guises.
3. The strategy of “Divide and Rule” was employed by most imperial powers in the Indian subcontinent and other colonies. The British and French backed various Indian states in conflicts between each other, both as a means of undermining each other’s influence and consolidating their authority.
4. The use of this technique is meant to empower the sovereign to control subjects, populations, or factions of different interests, who collectively might be able to oppose his rule.
5. The maxim divide et impera has been attributed to Philip II of Macedon, and together with the maxim divide ut regnes was utilised by the Roman ruler Caesar and the French emperor Napoleon.
6. Elements of this technique involve:
   a. creating or encouraging divisions among the subjects to prevent alliances that could challenge the sovereign
   b. aiding and promoting those who are willing to cooperate with the sovereign or regime
   c. fostering distrust and enmity between local rulers
   d. encouraging meaningless expenditures that reduce the capability for political and military spending
7. Historically, this strategy was used in many different ways by empires seeking to expand their territories.
8. The concept is also mentioned as a strategy for market action in economics to get the most out of the players in a competitive market.

34. One Percent

1. The World's Richest one per cent are on track to own two thirds of global wealth.
2. It's hard to consider a club with 48 million members as exclusive, but this one is. That's how many people make up the richest 1% of humanity, who together collectively control half of the world's total wealth, according to Credit Suisse. The other 7.3 billion or so make do with the other half.
3. Anyone with net assets—stocks, bonds, property, land, gold bars—worth $744,400 or more is a member of the global 1%, according to the bank's latest calculations. This group now owns 51% of the world's wealth, up from 45% in 2009.
4. The biggest shift in the top 1% in recent years has been in the growing ranks of wealthy Chinese in the club; 5% of the 48 million are now in China, up from 1% in 2010.
5. Here's another way to think of the global elite—if the 1% were 100 people, they would be…
   38 Americans, 10 Japanese, seven Brits, five Chinese, five French, five Germans, four Australians, four Canadians, four Italians, two Koreans, two Swiss, one Austrian, one Belgian, one Brazilian, one Dane, one Indian, one Dutch, one New Zealander, one Norwegian, one Singaporean, one Spaniard, one Swede, one Taiwanese, and six people with a mish-mash of different backgrounds.
6. Or, put another way…

   42 people from North America, 32 from Europe, 25 from Asia-Pacific, one from Latin America… and none from Africa.

35. Business Irresponsibility

1. Consumers are Demanding Corporate Responsibility Whether you are trying to innovate your existing products, better market them, and/or develop new products, be warned that consumers want to know if it's better for the world.
2. People Want to Work at Companies with World-Positive Missions - A company's greatest asset is its people. Corporate responsibility can help you do just that as companies with published impact initiatives have an easier time recruiting talent.
3. Five years ago, it was considered good if a company simply did not harm the environment. However, times have changed, and now employees demand that their company do more than simply not be bad. They need to do good, too. According to Forbes:
   a. 32% of employees would seriously consider leaving their job if their company gave no / little money to charity;
   b. 65% would seriously consider leaving their job if their company harmed the environment;
   c. 83% would seriously consider leaving their job if their employer used child labor in sweatshop factories.
4. Employees Perform Better When They Engage in Socially Responsible Activities and Reporting
5. One of the biggest challenges in the corporate world is a lack of quality leaders and a disengaged employee base.
6. Social good programs, like skills-based volunteering programs, are proven to effectively build leaders more economically than university programs, training, and conferences.
7. The idea of world-positive leadership development creates measurable benefits to people, planet, and profits. In a Society for Human Resources Management study, companies with strong sustainability programs had.
8. By engaging with social causes in a variety of ways, your company can learn about new geographies, cultures, markets, and product applications. In addition, it can enable partnerships that protect market share and increase distribution.
9. Capitalism is evolving, and society is, too, even investors are pulling away from companies that don't do good. This was recently evidenced when investment firms and stockbrokers pulled money away from BP due to its operations in Alaska.

36. Evils of Social Media

A REAL LIFE EXPERIENCE

1. I'm 17 and I deleted all my Social Media, here's what happened and why you should delete them too. Social media. The time wasting, addictive drugs that let us subliminally express our deepest narcissistic thoughts. At least, that's how I saw them. Maybe your situation is different.

2. Like any powerful tool, social media can be used for good, as well as bad—and in my particular case, it was bad.

3. Let me tell you this, social media is a whole different monster for a 17-year-old. Everyone my age is spending hours every day snapchatting, instagraming, facebooking—and whatever else.

4. If you're not involved—you're an outsider. You're looked at as weird and stupid. A loser. You'll struggle to get invited to events and people won't want to be friends with you. Sad, but unfortunately that's just the way things are.

5. Remember that one kid who was always chosen last to play games? That's essentially how kids who don't use social media are looked at.

6. I'm no longer regularly putting up Instagram posts, rigorously working out how many likes per minute I'm getting… Nor am I deleting a photo if it didn't get at least 150 likes.

7. In hindsight, the fact that I ever put so much effort and time into it all makes me sooo mad and embarrassed.

8. Do you know how many books I could have read with all that wasted time instead?! Let's do the maths. I got a phone when I was 13. I'm 17.5 now. I can easily say I've spent around 3 hours on social media every day since then, therefore: 17.5–13= 4.5 x 365 = 1642 x 3 = 4927 hours wasted.

9. I don't even want to get into what I could've accomplished in those 4927 hours. A ridiculous amount. Nevertheless, getting worked up over things like this is pointless. There is a Chinese proverb that goes — "The best time to plant a tree was 20 years ago. The second best time is now."
   I think it's relevant. It's never too late to start over.

10. So, just over 3 months ago, I did it—and I haven't looked back since. Here are seven things I've noticed so far.
    a. I regularly feel like I did when I was a child.
    b. I have an abundance of free time on my hands.
    c. I've stopped feeling inferior to others.
    d. I'm happy, extremely motivated and in the best shape I have ever been in.
    e. Sounds cliché, but you figure out who your "real friends" are.
    f. I've started appreciating the smaller things.
    g. I'm more in touch with the real world.

11. Social Media and Fake News - Fake News: Lies spread faster on social media than truth does. People are quicker to repeat something that's incorrect than something that's true.

12. "It took the truth about six times as long as falsehood to reach 1,500 people." It should come as no surprise that the internet has spawned a resurgence of fake news.

37. Mobile Phones, radiation, signals, waste and recycling nightmares

A. CELL PHONES – A WORLDWIDE HEALTH HAZARD

1. As you probably know, over five billion people worldwide, about 80 percent of the world's population, now has a cell phone.

2. This fact alone makes this an extremely important issue as it affects the vast majority of people on Earth – not to mention the detrimental impact it may have on insects, such as bees, and other animals. Many Third World countries have actually circumvented the infrastructure of landlines entirely, and have gone straight to using cell phones.

3. It's important to realize that while this type of radiation exposure may not pose an immediate short-term threat to your health, as it is not an ionizing type of radiation (like x-rays) that can break chemical bonds and directly damage DNA, cell phones emit a radio frequency field in the microwave band that interacts with your own bio signaling system, which can over time cause a variety of health problems and raise your risk of cancer.

4. Cancers associated with this radiation include brain tumors (gliomas), acoustic neuromas, meningioma, salivary gland tumors, eye cancers, testicular cancers and leukemia.

5. Negatives of Cell Phones
   a. Cell phone radiation should have been classified as a "Probable Human Carcinogen" based on the existing science
   b. Allergic reactions
   c. Sleep issues
   d. Carpal tunnel syndrome
   e. Behavioral problems in children
   f. Traffic accidents
   g. False sense of security

6. Cell Phones, an environmental nightmare - E-waste is the common term for electronic products at the end of their "useful life." Computers, televisions, VCRs, stereos, copiers, and fax machines are electronic products that can be reused, refurbished, or recycled. Let's focus on our cell phones.

7. In 2012, 1.6 billion new cell phones were manufactured, and the average lifespan of a new cell phone in the U.S. is 9 – 18 months. Each cell phone contains precious metals, including gallium, selenium, gold, mercury, chromium, niobium, tungsten and molybdenum, which produce a cocktail of toxic chemicals when disposed. Aside from negative environmental impacts of extraction of these metals, they are often not recycled.

8. So where does everything end up? The dump. As your year-old cell phone sits in a pile amongst other cell phones, these metals seep back into the groundwater, causing contamination for wildlife—and us.

9. Rather than designing durable, longer-lasting electronic devices that are conveniently refurbished or recycled, electronic manufacturers have promoted and appealed to an environmentally destructive part of the human psyche.

10. Our insatiable desire for the "best", the "newest," and the "fastest" with built-in obsolescence keeps us perpetually buy-buy-buying more, fueling industry profits at the planet's expense.

11. Where do old phones and computers go to die? More and more, aging motherboards and hard disk drives and touch-screens are broken up in illegal waste dumps in Hong Kong, according to a blistering report from the Basel Action Network.

12. China’s crackdown on corruption has slowed the illegal export of e-waste, much of it from the United States, to southern China, the traditional home of highly polluting electronics recycling sites. That has left more of the toxic material marooned in Hong Kong.

13. This is industrial-scale dumping: BAN’s executive director Jim Puckett says that some 50 to 100 containers of e-waste arrive in Hong Kong every day, with 90 percent of it coming from the U.S. That’s the equivalent of 50 to 100 trailer trucks of e-waste – every day.

38. Garbage Trash Dumps

1. Trash is becoming a larger and larger problem for us and for the environment. As we continue to waste more and more, we use more natural resources and increase pollution in our world.

2. In most of the world, including North America, we do one of two things with our ordinary garbage: burn it or bury it. Neither one is good for us or for the environment.

3. Burning garbage in incinerators releases dangerous gases and dust (particulate matter) which contribute to global warming and pollute lakes, forests, oceans and cities half a world away from where they originated. Most incinerators in industrialized countries now remove large quantities of particles and pollutants, thus ensuring cleaner air. But the bulk of what they remove ends up in a landfill.

4. Burying garbage also causes both air and water pollution, and simply transporting it to the sites consumes an increasing amount of valuable fossil fuels, which produces more pollution and other problems.

5. Buried in a landfill, the typical plastic trash bag takes 1,000 years to degrade, giving off toxins as it does.

6. Wet garbage, including yard waste which is 50 to 70 % water, adds to the toxic stew of chemicals — household cleaners, antiperspirants, nail polish, paint and so on — that mixes in a landfill.

7. In old, unlined landfills, this leachate, diluted and made more mobile by rainwater, percolated down to the bottom of the fill. There, it would sink into the soil, spreading downwards and outwards in a characteristic brush-stroke shape known as a plume, contaminating soil and water as it moved.

8. Closing a landfill or capping it with cement does not stop its plume from advancing. Modern, sanitary landfills are usually lined to prevent such pollution and the leachate is drawn off and treated. However, it is naive to assume that a liner will never fail

9. Air pollution may seem an unlikely consequence of landfills, but in fact it is a major problem. The primary culprit is anything organic such as yard and food waste.Waste at landfills is usually compressed to save space. Each day's deposit is covered with a layer of dirt to discourage insects and rodents and to help shed rain and thus minimize leachate. So far, so good. But the result is an almost oxygen-free environment. When organic materials decompose in such anaerobic conditions they produce methane, a greenhouse gas.

10. Since composting produces carbon dioxide, another greenhouse gas, it's reasonable to suspect that the compost/landfill choice is a classic six-of-one, half-dozen-of-the-other situation. The first produces carbon dioxide, the second produces methane. What's the difference between them? Is it really worth the time and effort to keep organics out of landfills?. Methane is twenty times more potent than carbon dioxide.

11. What is the scope of the waste problem? The United States, China, Brazil, Japan and Germany are the leading trash generators. The U.S. produced about 228 million tons of waste in 2006, a figure that climbed to 254 tons by 2013. China (with a population around four times larger than that of the U.S.) is close behind, with 190 million tons of waste per year.

12. The more urbanized and industrialized a country becomes, the more trash it produces, Ijjasz-Vasquez said. The United Nations Environment Program predicts the amount of waste will probably double in lower-income African and Asian cities as a result of population growth, urbanization and rising consumption.

13. Why are many Americans oblivious to being serial waste generators? "Because we're not seeing it, we think it's not a problem" Unlike most utilities, such as gas, water and electricity, that are charged depending on how much is used, it works differently for waste. Because most cities and towns charge a flat fee for trash service or include it within the property tax, most Americans pay little attention to the amount of waste they are discarding.

14. “By taking our waste away from us so efficiently, it makes us more inclined to dispose more

15. Shocking Facts About Your Garbage

a. More Than 100 Tons of Waste for Every American
b. Bottled Water Is the “Grandfather of Wasteful Industries.”
c. Food Waste Is a Problem Too
d. Disposables Are a Drain
e. Trash Is Expensive
f. Carpet Waste Alone Is Astounding: Americans throw away 5.7 million tons of carpet every year.
g. Paper Waste Is a Shame

39. Consumerism

1. Consumerism is a pattern of behavior that helps to destroy our environment, personal financial health, the common good of individuals and allows the destruction of all types of institutions.

2. 86% of the world’s resources are consumed by the world’s wealthiest 20%.

3. Two typical German shepherds kept as pets in Europe or the U.S. consume more in a year than the average person living in Bangladesh, according to research by

sustainability experts Brenda and Robert Vale of Victoria University in Wellington, New Zealand.

4. So are the world's environmental ills really a result of the burgeoning number of humans on the planet—predicted to reach at least nine billion people by 2050? Or is it more due to the fact that although the human population has doubled in the past 50 years, we have increased our use of resources fourfold?

5. Consumerism isn't even delivering on its own promise—a better life. "Not only is consumer culture causing unprecedented environmental havoc, it is in many cases not delivering the well-being for human beings it is supposed to.

6. Materialistic values may stem from early insecurities and are linked to lower life satisfaction, psychologists find. Accruing more wealth may provide only a partial fix.

7. Compared with Americans in 1957, today we own twice as many cars per person, eat out twice as often and enjoy endless other commodities that weren't around then–big-screen TVs, microwave ovens, SUVs and handheld wireless devices, to name a few. But are we any happier?

8. Certainly, happiness is difficult to pin down, let alone measure. But a recent literature review suggests we're no more contented than we were then–in fact, maybe less so.

9. "Compared with their grandparents, today's young adults have grown up with much more affluence, slightly less happiness and much greater risk of depression and assorted social pathology,"

10. "Research suggests that when people grow up in unfortunate social situations–where they're not treated very nicely by their parents or when they experience poverty or even the threat of death, "they become more materialistic as a way to adapt."

11. William Rees, an urban planner at the University of British Columbia, estimated that it requires four to six hectares of land to maintain the consumption level of the average person from a high-consumption country. The problem is that in 1990, worldwide there were only 1.7 hectares of ecologically productive land for each person. He concluded that the deficit is made up in core countries by drawing down the natural resources of their own countries and expropriating the resources, through trade, of peripheral countries. In other words, someone has to pay for our consumption levels.

12. Our consumption of goods obviously is a function of our culture. Only by producing and selling things and services does capitalism in its present form work, and the more that is produced and the more that is purchased the more we have progress and prosperity. The single most important measure of economic growth is, after all, the gross national product (GNP), the sum total of goods and services produced by a given society in a given year. It is a measure of the success of a consumer society, obviously, to consume.

13. However, the production, processing, and consumption, of commodities requires the extraction and use of natural resources (wood, ore, fossil fuels, and water); it requires the creation of factories and factory complexes whose operation creates toxic byproducts, while the use of commodities themselves (e.g. automobiles) creates pollutants and waste.

14. Yet of the three factors environmentalists often point to as responsible for environmental pollution — population, technology, and consumption — consumption seems to get the least attention.

15. One reason, no doubt, is that it may be the most difficult to change; our consumption patterns are so much a part of our lives that to change them would require a massive cultural overhaul, not to mention severe economic dislocation. A drop in demand for

products, as economists note, brings on economic recession or even depression, along with massive unemployment.

40. Nuclear Warfare

1. Nuclear weapons are an absolute evil; that their possession does not increase anyone's security; that their continued existence is a threat to the life of every person on the planet; and that these genocidal and potentially omnicidal weapons have no place in a civilized society.
2. On December 9, 1948, the United Nations General Assembly adopted a convention prohibiting genocide. It seems appropriate to discuss nuclear warfare against the background of this important standard of international law.

3. The retention of nuclear weapons, with the intent to use them under some circumstances, must be seen as the intent to commit genocide. Is it not morally degrading to see our leaders announce their intention to commit the “crime of crimes” in our names?

4. “…No public health hazard ever faced by humankind equals the threat of nuclear war. Never before has man possessed the destructive resources to make this planet uninhabitable…. Modern medicine has nothing to offer, not even a token benefit, in the event of nuclear war…”

5. “We are but transient passengers on this planet Earth. It does not belong to us. We are not free to doom generations yet unborn. We are not at liberty to erase humanity’s past or dim its future. Social systems do not endure for eternity. Only life can lay claim to uninterrupted continuity. This continuity is sacred.”

6. War has always been madness, always immoral, always the cause of unspeakable suffering, economic waste and widespread destruction, and always a source of poverty, hate, barbarism and endless cycles of revenge and counter-revenge. It has always been a crime for soldiers to kill people, just as it is a crime for murderers in civil society to kill people. No flag has ever been wide enough to cover up atrocities.

7. But today, the development of all-destroying modern weapons has put war completely beyond the bounds of sanity and elementary humanity. Today, war is not only insane, but also a violation of international law. Both the United Nations Charter and the Nuremberg Principles make it a crime to launch an aggressive war. According to the Nuremberg Principles, every soldier is responsible for the crimes that he or she commits, even while acting under the orders of a superior officer.

8. Nuclear weapons are not only insane, immoral and potentially omnicidal, but also criminal under international law. In response to questions put to it by WHO and the UN General Assembly, the International Court of Justice ruled in 1996 that “the threat and use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and particularly the principles and rules of humanitarian law.”

9. Message from Hiroshima –

   Nuclear weapons are the ultimate evil that threatens us all, says Matsui Kazumi, Mayor of Hiroshima. We must listen to the message of Japan’s atom bomb survivors and join their efforts to abolish nuclear weapons completely by 2020.We must abolish the absolute evil and inhumanity that is nuclear weapons.In our town, we had the warmth of family life, the deep human bonds of community, festivals heralding each season, traditional culture and buildings passed down through history, as well as riversides where children played.

   At 8:15 am, 6th August 1945, all of that was destroyed by a single atomic bomb. Below the mushroom cloud, a charred mother and child embraced, countless corpses floated in rivers, and buildings burned to the ground.

   Tens of thousands were burned in those flames. By year’s end, 140,000 irreplaceable lives had been taken, that number including Koreans, Chinese, Southeast Asians, and American prisoners of war.

   Those who managed to survive, their lives grotesquely distorted, were left to suffer serious physical and emotional aftereffects compounded by discrimination and prejudice.

   Children stole or fought routinely to survive. A young boy rendered an A-bomb orphan still lives alone; a wife was divorced when her exposure was discovered. The suffering continues.

What have we learnt in these 70 years?

Meanwhile, our world still bristles with more than 15,000 nuclear weapons, and policymakers in the nuclear-armed states remain trapped in provincial thinking, repeating by word and deed their nuclear intimidation. We now know about the many incidents and accidents that have taken us to the brink of nuclear war or nuclear explosions. Today, we worry as well about nuclear terrorism.

41. Fast Life

1. A patient arrived late, tossed his cellphone on the sofa and pleaded: “Can you help me control my phone? It’s ruining my life.”

2. What is supposed to help us is hurting us. What is supposed to free us ends up enslaving us. That’s the paradox of addiction. Whatever the lure, it seems so good, so positive, so helpful and so harmless. And then we’re hooked.

3. So is society. Caught in a chaotic, frenzied spiral of a new addiction, people are chasing money, power, success and a wilder, faster pace of life. Just like any addiction, people are out of control in their behaviors, feelings and thinking, yet they believe they are normal.

4. This is progress in the modern world. You always move forward and there are no limits to how far you can go or how fast you can get there. Don't pause, don't reflect. You win or lose. You'll fall behind and fail if you stop moving. Fast at any cost is the mantra of a stressed and distressed society today.

5. Over-scheduling and double-booking have been signs of progress and belonging for two decades. Practices that used to cause embarrassment became proudly rationalized as multi-tasking, a new skill to master.

6. You juggle 10 plates while you brag about your 90-hour week and pop your Ambien to get to sleep.

7. This is success in the modern world. Progress equals fast, which equals success, a recipe for addiction.

8. Society is now dominated by beliefs, attitudes and ways of thinking that elevate the values of impulse, instant gratification and loss of control to first line actions and reactions. "I want it now!" or "Do it now!" are valued mantras for today's with-it person, young or old.

9. Add to instant action the belief that there are no limits to human power, no limits to action, no limits to success. Fueled by the grandiosity and omnipotence of these beliefs, people get high on the emotions of endless possibility with no need to ever stop or slow down.

10. [What are the costs of speed addiction? We live under a weight of demands, real and imagined, that is debilitating. We see an alarming increase in stress-related disorders of all kinds for all ages, beginning with elementary school-age children who are struggling with obesity, depression, anxiety, attention disorders and all kinds of learning disabilities, a list of problems for all ages.

11. In a vicious circle, the exhausting fast pace of life promotes overstimulation and overscheduling, which become chronic stressors that lead to behavioral, mood and attention disorders. We cannot see that we are causing our physical, emotional and behavioral health problems as we try harder to go faster, and then turn to medication to treat the unforeseen consequences. We believe we should be able to go this fast and there is something wrong with us if we can't keep up.

12. We also see changes in our attention and thinking. Technological advances were supposed to free up creative thinking, but the mass of incoming information has actually eroded our attention and our creativity. People have less time to reflect on anything as they become dominated by a need to act, a need to be online, robotically always checking. Multi-tasking stimulates internal chaos and fragmented attention.

13. Maybe the biggest cost we've encountered already is the harm to human relationships. Instead of enhancing close bonds, technology has facilitated avoidance of direct person-to-person contact, which takes too much time. We maintain the illusion that we're connected more closely than ever by the number of Facebook "likes" we accumulate. But it's all fast, now, this instant. Everything is impulse. Our sense of connection exists in the action, not an accumulated, deepening experience.

14. Baby Boomers know what they've lost. The younger generation is growing up with an addictive inner pressure and chronic stress as normal. When they can't go any faster and they can't slow down, it will be a hard road to pick up the developmental pieces they've missed in our wild rush for progress.

15. The hectic pace of today's 24-hour lifestyle may be wreaking even more havoc on our health than we realise. Modern living is creating an epidemic of binge drinking, irritability, loss of sex drive and indigestion, it is claimed.

42. Packaging Pollution

PACKAGING POLLUTION

1. If you look inside almost any trash can, I bet that you can identify most of the products in there by their colorful labels and containers even if only small portions are visible. This waste from containers and their packaging is seldom given much attention,

2. The vast majority of landfill pollution that does not biodegrade is the rubbish and refuse from packaging and containers – “packaging pollution”.

3. Packaging – much of it single-use food wrapping – has created a rubbish problem that now pollutes every corner of the world. Manufacturers got us into this mess, but it’s up to us to dig ourselves out – and here’s how

4. I was told by a restaurant owner on a Thai island that local fishermen used to wrap their lunch in banana leaves, which they would then casually toss overboard when done. That was OK, because the leaves decayed and the fish ate the scraps. But in the past decade, he said, while plastic wrap had rapidly replaced banana leaves, old habits had

died hard – and that was why the beach was fringed with a crust of plastic. Beyond the merely unsightly, this plastic congregates in continent-scale garbage gyres in our oceans, being eaten by plankton, then fish; then quite possibly it'll reach your plate …

5. This is a worldwide problem – we can't point the finger at Thai fishermen. The west started this. The developing world justifiably yearns for its living standards and, with it, its unsustainable convenience culture.

6. The UK alone produces more than 170 million tonnes of waste every year, much of it food packaging. While it has revolutionised the way we store and consume food, there is now so much of it that landfills can't cope. Some of it is poisonous, and some of it never degrades. It can take 450 years for some types of plastic bottle to break down; one type, PET, while recyclable, doesn't biodegrade at all. And yet only a third of plastic packaging is recycled.

7. "we never actually throw anything "away" – it's really just put somewhere else.

8. But recycling is just a drop in the ocean – most of the environmental cost of our throwaway wrapping is upstream – in its manufacture. We were closer to an answer 30 years ago: what on earth happened to milkmen and bottle deposits? Now we live in an absurd age where a packet of crisps can have seven layers of wrapping.

9. It's easy to despair at the scale of the task, but it isn't beyond humanity to solve it – look at how the world took action on CFCs: there are signs that the hole in the ozone layer is now closing. Food packaging ought to be a doddle.

10. Manufacturers got us into this mess, and our governments must take responsibility. But will they? There are some signs the ship is creaking toward a better course: the words Reduce Reuse Recycle have been on conscious consumers' lips for decades; recycling is now commonplace, and there are newer initiatives like the plastic bag charge. We'd also do well to follow France's lead in banning plastic cutlery, cups and plates.

11. Certainly, the major brands have made efforts to transform their packaging to incorporate recyclable materials, but reality shows that **less than 70% of the packaging is recyclable so far.** There are legal and security constraints required to protect the consumer, but is it necessary to put a cardboard wrapper on yogurt containers that are already attached together, or put toothpaste tubes in boxes, which also arrive at the merchant over packed to avoid breakage during transit. This necessary evil forces the recovery of a large amount of boxes that in the best case are recovered by retailers of slightly used boxes. So in the name of consumer protection and product marketing, packaging represents 175 kg of waste per person per year, or 385 pounds, it's huge.

43. Plastics Pollution

1. The amount of plastic manufactured in the first ten years of this century eclipses the total produced in the entire last century.
2. There are 500 times more pieces of microplastics in the sea than there are stars in our galaxy and by 2050 it is estimated there will be more plastic than fish
3. Plastic pollution is the accumulation of plastic products in the environment that adversely affects wildlife, wildlife habitat, or humans. Plastics that act as pollutants are categorized into micro-, meso-, or macro debris, based on size.
4. Plastics are inexpensive and durable, and as a result levels of plastic production by humans are high. However, the chemical structure of most plastics renders them resistant to many natural processes of degradation and as a result they are slow to degrade. Together, these two factors have led to a high prominence of plastic pollution in the environment.
5. Plastic pollution can afflict land, waterways and oceans. Living organisms, particularly marine animals, can be harmed either by mechanical effects, such as entanglement in plastic objects or problems related to ingestion of plastic waste, or through exposure to chemicals within plastics that interfere with their physiology.
6. Humans are also affected by plastic pollution, such as through disruption of various hormonal mechanisms.

7. In the UK alone, more than 5 million tonnes of plastic are consumed each year, of which only an estimated 24% is recycled. The remaining 3.8 million tonnes of waste is disposed of in landfills.
8. The large amount of plastic waste inevitably enters the environment, with studies suggesting that the bodies of 90% of sea birds contain plastic debris. In some areas there have been significant efforts to reduce the prominence of plastic pollution, through reducing plastic consumption and promoting plastic recycling.
9. Since the 1950s, an estimated 6.3 billion tonnes of plastic has been produced, of which an estimated 9% has been recycled and another 12% of plastic waste has been incinerated.
10. From cell phones and computers to bicycle helmets and hospital IV bags, plastic has molded society in many ways that make life both easier and safer. But the synthetic material also has left harmful imprints on the environment and perhaps human health, according to a new compilation of articles authored by scientists from around the world.
11. Since its mass production began in the 1940s, plastic's wide range of unique properties has propelled it to an essential status in society. Next year, more than 300 million tons will be produced worldwide.

44. Processed Foods

1. Processed foods are those that have been altered intentionally prior to consumption. Foods that are cooked, canned, frozen, packaged or changed in nutritional composition with fortification, preservation or preparation in various ways come under the processed-food category.
2. When we cook, bake or prepare food we are processing the food. This is the reason for the origin of the word "food processor" which helps in the preparation of healthy meals.
3. Processed foods are bad, they are a major contributor to obesity and illness around the world. How do we know? Every time a population adopts a Western diet high in processed foods, they get sick. It happens within a few years. Their genes don't change, their food does.
4. Here are 9 ways that processed foods are bad for your health.

    a. High in sugar and high-fructose corn syrup
    b. Engineered for overconsumption
    c. Contain artificial ingredients
    d. People can become addicted to junk food
    e. Often high in refined carbohydrates
    f. Low in nutrients
    g. Low in fiber
    h. Requires less time and energy to digest

i. Often high in trans fats

45. Cancer

1. Cancer caused by modern man as it was virtually non-existent in ancient world.
2. Carcinogens, Carcinogens everywhere from microwaved food to all types of additives in processed foods like rancid cooking oil, colorants, flavorants, preservatives and insecticides, pesticides, herbicides, and fertilizers in fruits and vegetables.
3. A study of Egyptian mummies and ancient skeletons has found little evidence that they suffered from cancer. The authors of the study suggest that this means cancer is a modern disease.
4. Cancer is a modern man-made disease caused by the excesses of modern life, a new study suggests. The findings suggest that it is modern lifestyles and pollution levels caused by industry that are the main cause of the disease and that it is not a naturally occurring condition.
5. The study showed the disease rate has risen dramatically since the Industrial Revolution, in particular childhood cancer – proving that the rise is not simply due to people living longer. In industrialized societies, cancer is second only to cardiovascular disease as a major cause of death.
6. But aren't there elements of modern life that cause cancers? Yes, indeed, but most of them are down to poor lifestyle choices that people can do something about, not, as implied, because they are drowning in a sea of carcinogens from which there is no escape.
7. Smoking is the most significant of these, causing around a quarter of all cancers globally, these deaths could be avoided by a complete ban on smoking.

8. Other major lifestyle factors that pose cancer risks include heavy drinking, which can lead to liver and gullet cancers, sunbathing, which can lead to skin cancer, and obesity and lack of exercise, which can promote cancers of the gut. Pesticides and some industrial chemicals can cause cancer.
9. Cooking Oil **-** Bacteria and Free Radicals - if used oil is not properly strained and stored after it cools, bacteria feeds on food particles left in the oil. Unrefrigerated oil becomes anaerobic and leads to the growth of Clostridium botulinum, which causes botulism, a potentially fatal food poisoning. Refrigerating or freezing oil retards bacterial growth. Rancid -- meaning old and stale -- oil contains free radicals, molecules that can damage cells and lead to increased cancer risk, as well as affect the quality of your food. The good news is that your nose can easily identify rancid oil.

46. Stresses of Modern Life

1. Stress is an issue facing many individuals that we work with. Time and time again, we see people feeling overwhelmed because of the pressures that they face as part of modern life. So what are some common causes of stress in modern life, and what's the antidote?
2. Evolutionary psychologists will tell us that part of the problem is that there's a mismatch between the current environment (with its cities, bureaucracies, inequality, and social media) and the environment of evolutionary adaptation (tribal life on the savanna).
3. Below are 5 ways reasons the modern world might produce more stress, anxiety and depression than that of our distant ancestors.
    a. We interact with a greater diversity of people.
    b. We compare ourselves to higher standards.
    c. We specialize more.
    d. Markets are more efficient (a.k.a. "It's the economy, stupid!")
    e. Innovation happens faster.

4. Stress in Under-Developed Countries - Poverty has been reported to be a major cause of depression and stress. In turn these are reported to be major causes of shortened life expectancy in these countries.

5. Some Reasons Why Modern Life Causes Stress in Industrialized Countries.
    a. Constantly being connected.
    b. Trying to do too much.

   c. Not prioritizing
   d. Poor and/or infrequent stress-release mechanisms
   e. Pollution
6. Air pollution, noise pollution, visual pollution…everywhere we turn there's a constant source of stimulation and not necessarily in a positive way. From being constantly connected, to air pollution affecting our wellbeing, and noise pollution affecting our ability to hear ourselves think…it's not surprising that we readily become stressed.

47. Family Life on a Garbage Dump

1. 'Hell on earth': the great urban scandal of family life lived on a rubbish dump. Countless communities around the world scavenge on open dumps – with terrible health consequences.
2. Night and day, thousands of waste pickers – people who gather, sort, reuse and sell the materials others throw away.
3. Families fashioned homes from rubbish, on top of rubbish. They itate rubbish, fight over it – and even died over it. There were numerous other hazards. Putrid smoke seeped from the pile and residents had to step over broken glass and medical waste – one woman even said she stumbled on aborted foetuses among the rubbish.
4. Researchers who studied dumps found dangerous levels of cancer-causing dioxins in the soil and heavy metals in the metabolisms of children working there.
5. People reported the afflictions common to dump life worldwide: diarrhoea, headaches, chest and stomach pain, typhoid and irritation of the skin, nose and eyes.
6. Every day, they search the area for treasure -- a tiny scrap of metal, a bit of plastic, maybe a bone. They use large hooks to sort through the garbage, which sometimes reaches two or three stories high. They work in teams, and more than often they are barefoot.
7. "They don't look at the things they're doing as being unsanitary or unhealthy or unsafe," They collect plastic, metal and wires and sell it by the pound. The families make around $2 per day.

8. Their homes are constructed with recycled materials, with sometimes several families living in one shanty at a time. With no electricity, no running water -- and an overabundance of trash -- they are experts at repurposing.
9. Serious accidents, illnesses and even deaths are common. And outside the dump they faced stigma and discrimination within society.
10. Around the world, millions of people make a living by waste picking. Some work on the city streets, pushing their carts along the pavement, often at night when there are fewer cars on the roads. Others are drawn to open dumps, where there is an abundant, concentrated supply of sellable material.
11. The first thing that drives people to work with waste, wherever it is, is destitution – it's poverty, another is bad governance.

48. Human Trafficking

1. Human trafficking involves smuggling of human individuals across Trans national boundaries. The act of human trafficking involves, recruiting, transporting, harboring, transferring or receiving of persons by means of fraud, exploitation, force, coercion, threat, deception, or offering of some kind of unlawful benefits.
2. Human trafficking is a form of modern-day slavery where people profit from the control and exploitation of others.
3. Some examples:
   - There's the forced labor of boys growing cocoa in Cote d'Ivoire.
   - Women and Children Trafficking
   - Human Organs Trafficking
   - There's the forced labor of men on Thai fishing boats.
   - There's Japan's Technical Intern Training Program, created to enable foreign workers to develop their skills but is now sometimes a path to forced, nontechnical labor.
   - There's the predicament of foreign women who go to Saudi Arabia to work in households and who, once isolated in their employers' homes and dependent on them for permits to leave the country, are sometimes mentally, physically and sexually abused.
   - Sex trafficking, Prostitution
   - Trafficked boys and labor-trafficking victims.
   - Child Labour

49. Narcotic Drugs

1. The word "drug" is generally applied to any substance used as a medicine or in making medicine. For example. Aspirin, which alleviates pain and helps lower body temperature, and quinine, used in the prevention and treatment of malaria, are drugs;
2. Certain drugs, however, are taken not as medicines, but to satisfy a craving that has become an ingrained habit. These habit-forming drugs have brought misery to millions in every quarter of the globe.
3. Habit-forming drugs fall into two main groups: stimulants, or excitants, and sedatives, also known as depressants.
4. The stimulant drugs excite the nervous system and keep the user alert, at least for a time; they include cocaine, marijuana and Benzedrine.
5. The sedatives do not stimulate but lull. Taken in moderate quantities and upon the advice and prescription of a physician, they are legitimate remedies. They relieve anxiety and pain, cause mental and physical relaxation and often produce badly needed sleep. Taken in too large doses, however, these drugs may have very unfortunate physical and psychological effects. Opium and its derivatives are depressants; so are the synthetic substances demerol and methadone, used as substitutes for morphine. The depressants are also called narcotics (torpor-producing drugs), a term applied to certain stimulants as well.
6. It has long been known that many Indians of Peru, Chile and Bolivia chew the leaves of the plant called Erythroxylon coca and that these leaves produce extraordinary effects.

The chewers can do an incredible amount of work without showing signs of fatigue or hunger; they also seem mentally stimulated.

7. Alcohol - when alcohol reaches the brain, it affects the cerebral cortex first, followed by the limbic system (hippocampus and septal area), cerebellum, hypothalamus, pituitary gland, and lastly, the medulla, or brain stem. After drinking [alcohol], the brain works inefficiently, taking longer to receive messages from the eye; processing information becomes more difficult and instructions to the muscles are delayed. Alcohol can slow down reaction time by 10 to 30 per cent. It also reduces ability to perform two or more tasks at the same time.
8. Cocaine - the numbing properties of cocaine led a group of young physicians in Vienna to experiment with it as an anesthetic. As cocaine came into more general use as an anesthetic, the medical world became aware that it is a habit-forming drug. Synthetic chemists, therefore, set to work to develop a substance that would produce the numbing effects of cocaine but would not be habit-forming. The result of their researches was a synthetic agent called procaine, a nonhabit-forming drug also known by its trade name of Novocain.
9. Marijuana - t stimulant known as marijuana, or marihuana, in North and South America, is derived from the hemp plant, Cannabis sativa. The habit-forming drug is derived from a resinous substance in the flowers and leaves of the plant. One of the earliest stimulants derived from , the hemp plant was hashish. Marijuana is really a kind of hashish, in less concentrated form.
10. Depressant, or sedative, drugs - Opium and its derivatives-particularly morphine and heroin - are the most dangerous of the habit-forming narcotic drugs. Opium is a product of the opium poppy plant (Papaver somniferum).

50. Disposable Fashion – Cotton Production

1. Our insatiable appetite for cheap jeans is turning inland lakes and seas into desert wastelands: Devastating assault on the fashion industry reveals how the trend for disposable fashion is threatening the lives of millions and turning inland freshwater lakes into deserts because of cotton farming.
2. Chemical Warfare - Globally, 35 million hectares of cotton are under cultivation. To control the numerous pests feeding on the cotton plant farmers have long relied on heavy application of insecticides, which leads to the pollution of surface and groundwater. In developing countries cotton growers use a full half of the pesticides used in agriculture.
3. Recent advancements in technology, including the ability to modify the cotton plant's genetic material, have made cotton toxic to some of its pest. This reduced but did not eliminate the need for insecticides. Farm workers, particularly where the labor is less mechanized, continue to be exposed to harmful chemicals.
4. Competing weeds are another threat to cotton production; generally tilling practices and herbicides are used to knock back weeds. A large number of farmers have adopted genetically modified cotton seeds that include a gene protecting it from the herbicide glyphosate (the active ingredient in Monsanto's Roundup).
5. Synthetic Fertilizers - Conventionally grown cotton requires the heavy use of synthetic fertilizers. Such concentrated application means much of it ends up in waterways, creating one of the worst nutrient pollution problems globally, upending aquatic communities and leading to dead zones starved of oxygen and devoid of aquatic life. In addition, synthetic fertilizers contribute an important quantity of greenhouse gases during their production and use.

6. Heavy Irrigation - In many regions rainfall is insufficient to grow cotton but the deficit can be made up by irrigating the fields with water from nearby rivers or from wells. Wherever it comes from, the water withdrawals can be so massive that they diminish river flows significantly and deplete groundwater. Two thirds of India's cotton production is irrigated with groundwater.
7. Perhaps the most dramatic overuse of irrigation water is visible in Uzbekistan and Turkmenistan, where the Aral Sea declined in surface area by 85%. Livelihoods, wildlife habitats, and fish populations have been decimated. To make matters worse the now dry salt and pesticide residues are blown away from the former fields and lake bed, increasing the frequency of miscarriages and malformations among the 4 million people who live downwind.
8. Another negative consequence of heavy irrigation is soil salination. When fields are repeatedly flooded with irrigation water, salt becomes concentrated near the surface. Plants can no longer grow on these soils and agriculture has to be abandoned.
9. The Aral Sea in Central Asia - our insatiable appetite for cheap jeans that has turned an inland sea into a desert: Devastating assault on the fashion industry reveals how trend for disposable fashion is threatening the lives of millions and turning inland freshwater lakes into deserts because of cotton farming. Today, the scrubland that was once the Aral Sea in Central Asia is dotted with camels searching out sparse tufts of grass against a flat, sandy horizon. Only the bizarre sight of boats marooned hundreds of miles inland gives any clue to the area's history. In just four decades, what was once one of the largest inland bodies of water on the globe has shrunk by more than two thirds – an area the size of Ireland – leaving behind a poisonous dust bowl.
10. An example, with Britons buying twice as many clothes as a decade ago – last year we spent £50 billion – there is mounting concern about cheap, disposable fashion sometimes branded 'look and chuck'. It reveals that, around the globe, millions of gallons of clean water have either been diverted to growing cotton, or have been hopelessly polluted by the toxic chemicals used for dyes and manufacture. The facts are stark: to grow enough cotton to make a single pair of jeans can take 3,400 gallons or 15,500 litres of water.
11. Meanwhile, micro fibers from fleeces and sportswear are now a significant cause of plastic pollution in our rivers and oceans: 700,000 fibers are released in a single domestic wash.

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