

Postgraduate/Distance Learning Assignment coversheet & feedback form

THIS SHEET MUST BE THE FIRST PAGE OF THE ASSIGNMENT YOU ARE SUBMITTING (DO NOT
SEND AS A SEPARATE FILE)

For completion by the student:		
Student Name: John Ockels		
Module code: HPCA7023 Module title: Ecology and Spirituality	Student ID number: 2318050	Educational support needs: Yes/No No
Module tutor: Hunter		
Assignment due date: Jan 4, 2024		
If your module has multiple submissions please indicate which piece of work this is. 1st 2nd 3rd 4th 5th 6th		
I confirm that this is my original work and that I have adhered to the University policy on plagiarism. Signed (type your name in).....John Ockels..... The box won't let me click it, but that's me! Email submission: if you are submitting this form via email, please tick this box ☐ (as a substitute for your signature) to confirm that you agree to the above declaration.		

Assignment Mark**Final Mark**

WILL BE GIVEN ON TURNITIN

NB. All marks are provisional until confirmed by the Final Examination Board.

PLEASE NOTE: ALL COMMENTS WILL BE POSTED ON TURNITIN

For completion by Marker 1 :

Comments:

Marker's signature:

Date:

For completion by Marker 2/Moderator:

Comments:

Marker's Signature:

Date:

AGREED INTERNAL MARK (where necessary):

Comment on process of arriving at agreed mark:

External Examiner's comments (if relevant)

External Examiner's Signature:	Date:
--------------------------------	-------

Introduction

This paper discusses the question of whether there can be a useful spiritual response to the climate crisis, the problem forcing the world to focus on the global impact of unrestrained capitalism. Driving our economics is the Cartesian metaphysic of seeing humans as separate from and independent of Nature and other humans, which supports the unrestrained exploitation of both. Western religion has done a poor job of pushing beyond this understanding of humans as being separate from the rest of creation. In fact, for many practitioners the aim of religion has deteriorated to being that of escaping at death, intact, to another realm, thus avoiding the 'Earthly' task of spreading love altogether. Although 'spirituality' is a term having no agreed definition, it nevertheless points to the possibility of a more accurate metaphysic supporting an integrated view of the individual here and now in her context. A model for this growth is the Buddhist vision of the Bodhisattva, one who has grown to the point of ceasing her endless rebirths into *saṃsāra* and who could enter Buddhahood with her next reincarnation. But rather than do so the Bodhisattva voluntarily hangs back to help other sentient beings. Such spiritual transformation towards altruism is in reach of us all. Such a transformed individual can act to love and thereby heal, rather than exploit, the imagined breach between humanity and the processes which define us.

Addicted to 'Progress'

Humans are addicted to 'progress', defined by economists as the innate actions of human beings themselves, who are seen as 'utility-seeking profit-maximizers whose natural propensity is to 'truck, barter, and trade.'"¹ Capitalism is the organized economic process "that makes the accumulation of wealth in the form of capital the supreme end of society."² Capitalist organizations, following a "grow or die" model of societal evaluation, transform raw materials into products that consumers "want" to acquire (with the help of over \$800bn annual expenditures in advertising). To maximize its returns to shareholders, which it has a legal fiduciary responsibility to do, a company seeks to

minimize the cost of acquiring raw materials and to avoid the costs of disposing waste generated in its activities and that generated from using its products. Under capitalism the surplus from such operations go to the suppliers of the capital rather than to laborers who effect the actual process. Neither the impact of destruction of our surroundings in the acquisition of raw resources nor the impact on planetary life support systems of waste disposal is of any concern to capitalist organizations.

Over the years, Americans have been intentionally taught that 'progress' is a core article of secular faith. Between 1954 and 1962, during the early days of television in the United States, the charismatic actor Ronald Reagan, twenty years later to become President of the United States, was host of a very popular weekly television show, General Electric Theatre. Every week for eight years, he would sincerely personify the following message 'At General Electric, progress is our most important product.'

After World War II and through today, progress remains perhaps the deepest American value, where 'progress' means consumer buying, even if one must go deeply into debt to do so. Things became the visible proof of one's progress as a human.

Today, United States consumer spending accounts for two-thirds of U.S. overall Gross Domestic Product³. Anything threatening to interfere with consumer spending in the United States is widely considered to be a direct attack on the country itself.

No one wants to be constrained in our self-indulgence by a consideration of any responsibilities or obligations we may have to each other, other sentient beings, or even our children and grandchildren (or even to our future selves, if we are one of the 27% of Americans who reportedly believe in reincarnation⁴).

The core mechanism of the consumer process is the transformation of resources into desired products, using massive amounts of energy in that process. Consumer *self-indulgence*, encouraged by almost \$400bn in advertising spending in 2023, drives consumers to buy practically any product on offer. *Self-interest*, on the other hand, points out that the massive amount of heat-trapping CO₂ released by our energy use and the massive amount waste generated by discarded consumer and commercial products are well on the way to making life for our species impossible.

Although American consumers are the heart of the economy and have access to a plethora of goods and services unknown to their parents, consumerism nevertheless comes at a high price. At the end of 2022 Americans owed a total of \$16.9tn in all forms of debt, 73% of which was in the form of mortgages. They also owed \$1.03tn in credit card debt; \$1.57tn in debts incurred to pay for college and university (the only category of debt not dischargeable in bankruptcy); and \$1.58tn in automobile loans. As of the third quarter of 2022, the average American adult held \$5,910 in credit card debt.⁵ American addiction to an ever-increasing flow of consumer goods and services has resulted in at least 61% of Americans living paycheck-to-paycheck.⁶

The Hydrocarbon Industry Is Here to Stay

The transformation of raw materials into consumer goods requires massive amounts of energy. Now, and for the foreseeable future, the source of this energy is primarily going to remain that of burning hydrocarbons, regardless of the danger of longer-term climate disaster from this use.

Consider the scope of this industry. The worldwide oil and gas exploration and production industry generated total revenues of approximately \$4.3tn in 2023.⁷ The five largest companies in this sector – PB; Shell; Chevron; ExxonMobil; and TotalEnergies – are on-track to pay out dividends to investors of over \$100bn (£79bn) from operations in 2023. In 2022 these same five companies set a record for distributions to shareholders of over \$104bn.⁸

Oil is the largest source of energy worldwide, providing 31.6% of energy used worldwide in 2022 [52,970 Terawatt-hours].⁹ The 2023 oil demand to generate this energy was 101.19 million barrels per day, anticipated to increase to 102.8 BPD in 2024.¹⁰ In calendar year 2022, 81.8% (137,237 TWh) of total energy consumed worldwide (167,788 TWh) was generated by some form of hydrocarbon (gas, coal, or oil). Hydro (6.7%); Nuclear (4.0%) Wind (3.3%) and Solar (2.1%) were the other primary sources of energy used in the world that year.¹¹

In his book *The Revenge of Gaia*, James Lovelock is strongly in support of continuing to develop nuclear *fusion* as an eventual solution to using CO₂-generating

fossil fuels.¹² The Culham Centre for Fusion Energy of the UK Atomic Energy Authority continues to work on the concept.¹³ Billions in developmental funding and governmental support is being provided: “Fusion companies have now raised \$2.3 billion in investment, believing they can begin producing unlimited amounts of zero emissions energy by the 2030s.”¹⁴ It’s unlikely that nuclear *fission*, currently the source of 4% of world energy and still facing enormous issues of waste storage for thousands of years, and producing periodic disasters such as Chernobyl and Fukushima Daiichi, will continue to grow substantially. However, perhaps nuclear *fusion* will, in decades to come, be a source of clean, cheap power. If so, that will simply enable the more efficient pillaging of earth’s resources and their transmutation into waste, following a period in which such reshaped resources live as consumer products. Not all technological ‘advances’ are for the betterment of humanity and the other sentient and non-sentient beings with which we share the planet.

The Waste-Generation Industry is Also Here to Stay

Animals and plants other than humans “use” resources in their daily living, especially for feeding and to some degree in erecting shelter. On the other hand, humans “destroy” natural resources in our daily living. Humans take natural resources, from minerals to clean air and clean water, and use them with the result that they often may never be used again. Human products are not recycled naturally into the ongoing cycle of interrelatedness, where, for example, the out-gassing from plants is used to keep animals alive and their out-gassing is valued by plants. Human products are too often simply “waste” that is buried in holes (considered a “best practice”), dumped on the ground or into the rivers leading to the oceans, or cynically labeled as “recyclable goods” and sent to other, less economically and politically developed countries to be dumped.

Not all waste is discharged into the atmosphere as CO₂. For example, hydraulic fracturing (“fracking”), is a very common practice in producing oil and gas wells where the practice hasn’t been prohibited by governments. The Natural Resources Defense Council states that fracking depletes freshwater resources as the fracking of a single

well uses 1.5 million to 9.7 million gallons of water, and often more.¹⁵ The water removed from a fracked well is extremely polluted and, where well-regulated, is itself disposed by injecting it back into deep wells, specifically used to dispose of the polluted water or, more frequently, used to also put additional subsurface pressure on nearby oil and gas wells to increase subsurface pressure and force more oil and gas to the surface. But the earth doesn't always appreciate being injected with millions of gallons of highly polluted "slick" water, so many earthquakes, usually small but sometimes as large as magnitude 3.9, result as subsurface formations slide on each other.¹⁶ After years of denying that injection of used fracking water was connected to local earthquakes, the Texas state agencies have let it be known that they would be open to disposing this polluted water into some streams in remote areas, in violation of strict laws regulating water pollution.¹⁷ The problem with waste generated from human activity is that it has to go somewhere.

Another common non-climate change problem has to do with using dewatered human waste as an inexpensive commercial fertilizer in growing food crops. The idea is to reuse the nitrogen, phosphorus, and potassium found in human waste after the sludge from a wastewater treatment plant has been dewatered and treated to reduce pathogenic bacteria such as *e coli*. Current United States federal regulations require that nine heavy metals be removed before "biosolids" can be used as fertilizer. However, the human body efficiently concentrates many more pathogens than these nine. In 2018 the U.S. Environmental Protection Agency Office of Inspector General published a study entitled *EPA Unable to Assess the Impact of Hundreds of Unregulated Pollutants in Land-Applied Biosolids on Human Health and the Environment*. The EPA identified 352 additional pollutants in biosolids but cannot yet consider these pollutants for further regulation due to either a lack of data or risk assessment tools. Pollutants found in biosolids can include pharmaceuticals, steroids and flame retardants."¹⁸ Using biosolids in agriculture (and in home gardens) runs the significant risk of applying possibly hundreds of unidentified pollutants, including PFAS "forever chemicals," to crops, all in a completely legal manner ... so long as the nine heavy metals are not present. Again, the problem with waste generated from human

activity is that there's just not much to do with it. But that doesn't mean that the waste is safe to apply to food crops.

World Governments Attempt to Respond

At the 1992 The United Nations Conference on Environment and Development – the Earth Summit – American President George H.W. Bush and Cuban President Fidel Castro were among those giving brief speeches in the working session of leaders. The focus of the two Presidents couldn't be more different:

Bush: "We believe that the road to Rio must point toward both environmental protection and economic growth. Environment and development. And by now it's clear: To sustain development we must protect the environment and to protect the environment we must sustain development."¹⁹

Castro: "An important biological species – humankind – is at risk of disappearing due to the rapid and progressive elimination of its natural habitat. We are becoming aware of this problem when it is almost too late to prevent it. It must be said that consumer societies are chiefly responsible for this appalling environmental destruction. ... Unequal trade, protectionism and the foreign debt assault the ecological balance and promote the destruction of the environment. If we want to save humanity from this self-destruction, wealth and available technologies must be distributed better throughout the planet. Less luxury and less waste in a few countries would mean less poverty and hunger in much of the world."²⁰

The choice drawn by the two presidents remain ours now. As John Bellamy Foster puts it:

We are faced with a stark choice: either reject "the gods of profit" as holding out the solution to our ecological problems, and look instead to a more harmonious coevolution of nature and human society, as an essential element in building a more just and egalitarian social order—or face the natural consequences, an ecological and social crisis that will rapidly spin out of control, with irreversible

and devastating consequences for human beings and for those numerous other species with which we are linked. ²¹

Conference of the Parties, Version 28

The twenty-eighth Conference of the Parties (COP28), concluded in December 2023, showed that the conflict between ‘fossil fuel business as usual’ and a more rational response to the need to control greenhouse gas emissions continues unabated. COP28 shows that not much progress has been made since Rio. After twenty-eight annual COP meetings, the nations are still not able to agree on mandatory cuts in fossil fuel use. On this Stefan Anderson for Health Policy Watch writes:

Mike Berners-Lee, a carbon footprinting specialist at Lancaster University, cautioned that the fossil fuel sector achieved its goals at the summit. “Cop28 is the fossil fuel industry’s dream outcome,” he observed. “Because it looks like progress, but it isn’t.” ²²

Meanwhile, the Intergovernmental Panel on Climate Change, the combined World Meteorological Organization and UN Environmental Programme entity functioning to produce accurate and consensus-based scientific information on climate change, reports that:

Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020. Global greenhouse gas emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals (high confidence). ²³

Arriving during COP28, the Global Carbon Project announced that “Global carbon emissions from fossil fuels have risen again in 2023 – reaching record levels, according to new research from the Global Carbon Project science team. ... It now looks inevitable we will overshoot the 1.5°C target of the Paris Agreement, and leaders meeting at

COP28 will have to agree rapid cuts in fossil fuel emissions even to keep the 2°C target alive.”²⁴

Where Does All This Leave Us?

Our collective situation is this: There are simply too many people (over 8 billion at this point) ... using too many unrenewable resources ... generating too much unusable waste for us to live naturally within the ecological boundaries of the planet. Specifically, (1) Attempts to force high-emitting countries to stop are routinely rejected by powerful actors on the grounds that national economies would be negatively affected; (2) The world-wide hydrocarbon extraction and distribution industry continues to expand; (3) Consumers insist on having the benefits of immediate access to an ever-widening range of consumer goods; (4) Humans want access to energy now and believe paying any environmental costs for immediate, abundant energy can be delayed indefinitely; and, (5) Political power favors the status quo. Emission cuts are not going to happen fast enough to slow the world down from experiencing even more dire consequences from continued dumping of CO₂ into the atmosphere.

Can Religion Help Change Our Hearts?

Jeff Diamant writes for Pew Research Center in September 2023 in *The pope is concerned about climate change. How do U.S. Catholics feel about it?* that broadly speaking, Catholics are no more likely than Americans overall to view climate change as a serious problem. An identical share in each group say global climate change is either an extremely or very serious problem”. Data in his article shows that 57% of all U.S. adults, including 57% of Catholics, 46% of Protestants, 72% of non-Christian religions, and 70% of religiously unaffiliated individuals say that global climate change is either an extremely or very serious problem.”²⁵

Pope Francis has produced two policy papers on the environment: the *Encyclical Letter LAUDATO SI': Care for Our Common Home* in 2015 and the *Apostolic Exhortation LAUDATE DEUM: To All People of Good Will on the Climate Crisis* in 2023.

Neither has had earthshaking impact on the discussion, certainly not at the local Catholic Church level nor throughout American Catholicism.

In his earlier paper, *LAUDATO SI*, repeatedly makes the point that “everything is connected” or “interconnected” (Section 16; 72; 91; 117; 137; 138; 142; 240)²⁶

The interconnectedness of all aspects of creation – sentient and non-sentient being alike – is a central theological point for Pope Francis as well as being scientifically true. The interconnectedness of reality can become the basis for one’s overall ethic. It is at odds with the common understanding that pits humans against “Nature” (considered to be a separate entity) and subject to human exploitation without moral ends, seeing individuals as essentially separate from all else.

However, his statement in Section 19 that ‘*No one is saved alone*’ is eye-catching. Unless Pope Francis is taking ‘saved’ in a unique way, this statement would be a surprising, welcome, but earthshattering shift in Church theology. It would flabbergast Catholic and Protestant Clergy alike, who have been preaching the notion that salvation is a personal matter since the inception of the Church.

Of interest also in *LAUDATE DEUM* is Francis’ observation at Section 53, issued just weeks before the beginning of the conference in Dubai:

53. The United Arab Emirates will host the next Conference of the Parties (COP28). It is a country of the Persian Gulf known as a great exporter of fossil fuels, although it has made significant investments in renewable energy sources. Meanwhile, gas and oil companies are planning new projects there, with the aim of further increasing their production. To say that there is nothing to hope for would be suicidal, for it would mean exposing all humanity, especially the poorest, to the worst impacts of climate change.²⁷ add

It's not only the fact that gas and oil companies are planning new projects in the Persian Gulf, but that oil and gas companies are doing so *worldwide*.²⁸ The last line of Section 53 is particularly sad, for it’s not simply that the developed world is acting in a suicidal manner. The crime being perpetrated is much more sinister. First, to hold onto our lifestyles as long as possible, we the affluent consent to the murder of the poorest

and the least able to survive climate change. But as to us, our suicide comes a little later.

Although Pope Frances only mentions the effect of climate change on human migration, this is surely to be one of the most ethically challenging process. The west is already experiencing a mix of refugees from war, climate change, and poverty. These movements of humans across national borders are already befuddling governments, who have no immediate solution to what is becoming a more freely flowing labor force. The migration issue will not become simpler. Michał Burzyński and his colleagues in their article “Climate Change, Inequality, and Human Migration” write that “Median projections suggest that climate change will induce a voluntary and a forced permanent relocation of 62 million working-age individuals over the course of the 21st century ... mostly from low- to high-latitude areas.” ²⁹

Spirituality

Pew Research in it's December 2023 report *Spirituality Among Americans* describe that “7 in 10 U.S. adults describe themselves as spiritual in some way, including 22% who are spiritual but not religious.” At a detailed level definitions of spirituality include: believing people have a soul or spirit in addition to their physical body (83% of U.S. adults); saying there is something spiritual beyond the natural world, even if we cannot see it (81%); saying there are some things that science cannot possibly explain (74%); saying they have had a sudden feeling of connection with something from beyond this world (45%); saying they have had a strong feeling that someone who has passed away was communicating with them from beyond this world (38%); and, saying they have personally encountered a spirit or unseen spiritual force (30%). Overall, 70% of U.S. adults can be considered “spiritual” in some way, because they think of themselves as spiritual people or say spirituality is very important in their lives.³⁰ Note that a definition of spirituality as the *feeling that all things, living and not, are interconnected in this world* was not tested in the survey.

But surely to be ‘spiritual’ is not confined to ignoring the present. Jack Hunter, in *Ecology and Spirituality*, states “Spirituality is a concept that is widely used, but in many

different ways. Like the category of 'religion' it has been the subject of long, and on-going, debates. ... Part of the problem arises from attempting to define something in objective terms that is, for the most part, a subjectively held perspective." Although often defined in "other worldly" language, as the Pew Research report shows, spirituality "... may be grounded in the empirical world – in matter and the everyday things that surround us...." It may then best be seen as "... our subjective orientation to the world" ³¹

Spirituality Can Include Wonder Revealed Through Science

In pondering Descartes conclusions about our separateness from and, therefore, our authorization to exploit, Nature, one might conclude that he simply had very bad eyesight. One seeking verification of the wonder of creation and human involvement therein has only to consider the workings of her own body. That's the environment in which humans are most immediately and most deeply integrated with the rest of life. For example, there are 28 trillion cells (in a 60- kilogram adult female) to 36 trillion cells (in a 90-kilogram adult male) in the human body. These are separated into 400 known cell types across 60 different tissues performing separate, integrated functions.³² Approximately 84% of these are red blood cells, having an average lifespan of four months, being replaced at a rate of over two million each second. Nor are we alone. The number of bacteria cohabitating in the human body is estimated to be roughly equal to the total number of human cells.³³ In cells with a nucleus (all except red blood cells), human DNA obtained from our parents is formed into over three billion pairs of nucleotides in the familiar double-helix ladder structure. Bits and pieces of these chains form around 25,000 genes that defines who we are, although none of these genes track to 'race', which is now understood to be a social construction. Obtaining an analysis of one's genetic information costs less than \$200 and is available from multiple reputable laboratories. In looking within, one is reminded of the 139th Psalm: *Such knowledge is too wonderful for me; it is so high that I cannot attain it.*

Spirituality of the Bodhisattva

One important lesson from Buddhism is that all things come to an end. John Gray, Emeritus Professor of European Thought at the London School of Economics, in his book *Straw Dogs* offers this reflection:

Homo sapiens is only one of very many species, and not obviously worth preserving. Later or sooner, it will become extinct. When it is gone the Earth will recover. Long after the last traces of the human animal have disappeared, many of the species it is bent on destroying will still be around, along with others that have yet to spring up. The Earth will forget mankind. The play of life will go on.³⁴

Given the strong possibility that our mishandling of waste, including the production of enormous amounts of CO₂ and the incentives that hydrocarbon producers and their governments have to continuing business as usual, Gray's prediction may come quicker than anyone wants.

Certainly, as the effects of climate change become more apparent, producing more property damage, displacing domestic residents, and driving more international climate refugees to the northern hemisphere, people's nerves will fray. Religions that may have provided an orientation for the whims of life in the past, will continue to collapse under despair. Many will likely feel powerless and angry; authoritarian governments will likely continue to increase as people seek unattainable security. This will be a time of chaos; one can almost hear the question of the bug just before it hits the windscreen of "*Why didn't someone tell us this was about to happen?*" In this setting the most helpful stance will be that of the Bodhisattva, in Mahayana Buddhism, the one who has been transformed to the point that she is ready to cease endless rebirths, but who instead decides to "stay behind" to help all sentient beings deal with their suffering. One would be well advised to consider this ethic as a part of the spiritual orientation she is building.

But perhaps the future will be not as dire as the bug/windscreen model suggests. Lucy Bregman, in her excellent book *The Ecology of Spirituality: Meanings, Virtues, and Practices in a Post-Religious Age* agrees, noting that the definitions of 'spirituality' have shifted, especially over the last forty years. This shows the vibrancy of this

concept. In her hopeful concluding chapter, she writes, anticipating a change in humanity:

In these visions of a Change, sudden and ultimate, spirituality serves as a central core. Spirituality today is what anticipates the Change and will triumph as it replaces the leftover obsolete failed phenomena like religion. Spirituality will ... be a force for good that will make solutions to today's intractable problems seem obvious. Spirituality's triumph will make world peace achievable, solve the environmental crisis, and bring about a just distribution of power and material goods for all the world's people. ... [I]t will not bring these wonderful results about by force or political manipulation, because these methods would preclude the very real human actualization and freedom that spirituality itself releases. Spirituality will work, or at least begin its work, by worldwide individual re-creation. We will be the persons we were all meant to be, only even better. And our time, from this perspective, stands on the brink of such a momentous transformation and opportunity; the signs of this Change are all around, for those with eyes to see. Spirituality is then a light that shines both within all of us now and from a future we can imagine, showing us the path ahead.³⁵

Conclusion

Burning hydrocarbons, both to make things and for transportation, remains the primary source of energy on the planet, being the source of nearly 82% of energy used worldwide in 2022. Although renewables are making some advances, there is nothing on the horizon that will replace the economically and politically entrenched hydrocarbon industry. Twenty-eight years of attempts by world governments to rein in the industry have not yet succeeded. Consumers, following the illusion of the possibility of 'progress', are the ultimate drivers of the massive use of energy and the production of wastes that have no future use. The arrival of increasingly harsh environmental impacts of our species' lifestyle, including massive human migration, will drive many to despair. While religion promises a safe afterlife, interest is waning. Increasingly people identify themselves as being 'spiritual' without a common definition being referenced, but people

still require an orientation to life, which is often what they are pointing to with the word. One thing for sure, however, is that our fellow humans will be in need of emotional support as the social and personal impacts of climate change continues to grow. Hence developing the strength of a Bodhisattva can only be a good path, no matter what we are to collectively face.

Endnotes

1. Foster, John Bellamy, *Ecology Against Capitalism*, Monthly Review Press, (2002), Kindle Edition, (p. 67).
2. *ibid*, (p.11)
3. Macrotrends, *U.S. GDP Growth Rate 1962 – 2024* (2024) <
<https://www.macrotrends.net/countries/USA/united-states/gdp-growth-rate?q=2023+consumer+spending+as+percent+of+gdp>> [accessed 1/4/24].
4. Alper, Becka et al, *Spirituality Among Americans*(2023),
<<https://www.pewresearch.org/religion/2023/12/07/spirituality-among-americans/>>
[accessed 1/2/24].
5. Birken, Emily and Harrison, Ashley, *Average debt in America: 2023 statistics* (2023),
<<https://www.usatoday.com/money/blueprint/debt/average-american-debt-statistics/>>
[accessed 1/2/24].
6. Becker, Joshua. 61% Of Americans Live Paycheck-To-Paycheck: Here's The Simple Solution We're Overlooking (2023),
<<https://www.forbes.com/sites/joshuabecker/2023/08/18/61-of-americans-live-paycheck-to-paycheck-heres-the-simple-solution-were-overlooking/?sh=35013a10c768>> [accessed 1/2/24].
7. Ambrose, Jillian, *Big five oil companies to reward shareholders with record payouts* (2024), < <https://www.theguardian.com/business/2024/jan/01/oil-companies-shareholders-payouts-bp-shell-chevron-exxonmobil-totalenergies>> [accessed 1/4/24].
8. *ibid*
9. Baillard, Francois, *Francois Baillard's Post* (2023),
<https://www.linkedin.com/posts/francois-baillard_sustainability-economicgrowth-co2emissions-activity-7115259422767009793-Dee5> [accessed 1/3/24].

10. Reuters, *World oil demand next year to rise faster than expected, IEA says* (2023), <<https://www.reuters.com/business/energy/iea-raises-2024-oil-demand-growth-forecast-despite-economic-gloom-2023-12-14/>> [accessed 1/3/24].
11. Baillard
12. Lovelock, James, *The Revenge of Gaia*, Basic Books, (2006), (p. 87 ff).
13. Freeman, George, UK takes major STEP towards near limitless low-carbon energy (2023), <<https://www.gov.uk/government/news/uk-takes-major-step-towards-near-limitless-low-carbon-energy#:~:text=The%20UK%20is%20the%20world,a%20fusion%20innovation%20cluster%20in>> [accessed 1/2/24].
14. Wilson, Tom and Bott, Ian, Nuclear Fusion: Why the Race to Harness the Power of the Sun Just Sped Up (2021), <<https://insideclimatenews.org/news/08122021/nuclear-fusion-why-the-race-to-harness-the-power-of-the-sun-just-spaced-up/>> [accessed 1/3/24].
15. Denchak, Melissa, Fracking 101. (2019), < <https://www.nrdc.org/stories/fracking-101>> [accessed 12/23/23].
16. Earthquake Track, Today's Biggest Earthquakes (2024), <earthquaketrack.com> [accessed 1//24].
17. Pskowski, Martha, Texas' environmental agency enables companies to increase oilfield wastewater disposal in rivers (2023), <<https://www.texastribune.org/2023/08/17/texas-oilfield-wastewater-rivers-tceq-fracking/#:~:text=Texas'%20environmental%20agency%20enables%20companies,wate>> [accessed 1/2/24].
18. Tina Lovingood et al. At a Glance. EPA Unable to Assess the Impact of Hundreds of Unregulated Pollutants in Land-Applied Biosolids on Human Health and the Environment (2018), < <https://www.epaoig.gov/reports/audit/epa-unable-assess-impact-hundreds-unregulated-pollutants-land-applied-biosolids-human#:~:text=The%20EPA%20identified%20352%20pollutants,pharmaceuticals%2C%20steroids%20and%20flame%20retardants>> [accessed 12/22/23].

19. C-Span, Heads of State at Rio Earth Summit (1992), <<https://www.c-span.org/video/?26571-1/heads-state-rio-earth-summit>> [accessed 1/2/24].
20. Vidal, John, Rio+20: Earth summit dawns with stormier clouds than in 1992 (2012), <<https://www.theguardian.com/environment/2012/jun/19/rio-20-earth-summit-1992-2012>> [accessed 1/2/24]
21. Foster, (p. 33).
22. Anderson, Stephen. *COP28: Landmark Fossil Fuel Deal Falls Short of Phase-Out* (Dec 13, 2023), <<https://healthpolicy-watch.news/cop28-summit-ends-with-historic-yet-divisive-fossil-fuel-agreement/#:~:text=A%20call%20for%20a%20complete,nations%20attending%20the%20climate%20summit>> [accessed 1/2/24]
23. Anderson, Stephen. *COP28: Landmark Fossil Fuel Deal Falls Short of Phase-Out* (Dec 13, 2023), <<https://healthpolicy-watch.news/cop28-summit-ends-with-historic-yet-divisive-fossil-fuel-agreement/#:~:text=A%20call%20for%20a%20complete,nations%20attending%20the%20climate%20summit>> [accessed 1/2/24].
24. The Global Carbon Project, <<https://www.globalcarbonproject.org>> [accessed 1/2/24].
25. Jeff Diamant. *The pope is concerned about climate change. How do U.S. Catholics feel about it?* (2023), <<https://www.pewresearch.org/short-reads/2023/09/28/the-pope-is-concerned-about-climate-change-how-do-us-catholics-feel-about-it/>> [accessed 1/1/24]
26. Pope Francis. *Encyclical Letter LAUDATO SI': Care for Our Common Home* (2015), <https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html>
27. Pope Francis. *Apostolic Exhortation LAUDATE DEUM: To All People of Good Will on the Climate Crisis* (2023),

<https://www.vatican.va/content/francesco/en/apost_exhortations/documents/20231004-laudate-deum.html> [accessed 12/23/23]

28. Anderson.

29. Burzyński, Michał, Christoph Deuster, Frédéric Docquier, and Jaime de Melo, 'Climate Change, Inequality, and Human Migration', *Journal of the European Economic Association*, 20.3 (2022), 1145–97

30. Alper, Becka et al, *Spirituality Among Americans* (2023), <<https://www.pewresearch.org/religion/2023/12/07/spirituality-among-americans/>> [accessed 1/2/24].

31. Hunter, Jack. *Ecology and Spirituality: A Brief Introduction*. Sophia Center Press. (2023), (Chapter 2).

32. Murugesu, Jason Arunn. *We now know how many cells there are in the human body*. *New Scientist* (2023), <<https://www.newscientist.com/article/2392685-we-now-know-how-many-cells-there-are-in-the-human-body/>> [accessed 1/3/24].

33. Sender, Ron, *Revised Estimates for the Number of Human and Bacteria Cells in the Body* (2016), <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4991899/>> [accessed 1/2/24]

34. Gray, John, *Straw Dog*, Farrar, Straus and Giroux, (2007), Kindle Edition

35. Bregman, Lucy, *The Ecology of Spirituality: Meanings, Virtues, and Practices in a Post-Religious Age*, Baylor University Press, (2014), Kindle Edition.