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INNOVATION FOR SUSTAINABILITY

A CALL FOR AN ABOLITIONIST MINDSET TO LIBERATE OUR IMAGINATION FOR ACTION

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> Every inhabitant of this planet must contemplate the day when this planet may no longer be habitable.

Thus spoke President John F. Kennedy nearly 60 years ago in his 1961 address to the United Nations (Kennedy, 1961). He was not talking about the consequences of climate change then, which was not a concern at the time, but of nuclear war, and his words carried the immense weight of the dire message—whether or not the audience had ever experienced a nuclear attack, whether or not it was fully understood, everyone believed the science behind the President's speech about the dangers posed by nuclear conflict. There were no deniers. Everyone got it. The threat posed by the hydrogen bomb was collectively accepted as fact and everyone understood the importance of preparing for this threat.

Almost three decades later in 1988, James Hansen, director of NASA's Goddard Institute, delivered a similar message in a historic testimony to Congress (Shabecoff, 1988), declaring science to be 99% unequivocal that the world was warming and that humans, by burning fossil fuels and through other activities, had altered the global climate in a manner that was going to change life dramatically on earth. He predicted droughts, floods, rising temperatures, the thermal expansion of the oceans, and the melting of glaciers which would cause sea levels to rise by as much as one to four feet by 2050. Hansen thus appealed for urgent collective action to reduce carbon emissions, yet, unlike Kennedy's plea, there was skepticism and very little collective response (Rich, 2018).

Scientists now agree that Hansen's forecasts and mathematical models were spot-on (Gillis, 2018). Just as he predicted 30 years ago, the Earth's temperature rose by 1.8 degrees Fahrenheit on average and the planet has experienced an astonishing run of record-breaking temperatures, hurricanes, storms, forest fires, droughts, and ocean acidification caused by carbon dioxide (CO_2) emissions. Indeed, the United Nations' Intergovernmental Panel on Climate Change (IPCC) Report for Policymakers concluded only in October of this year that the average global temperature could rise by 2.7 degrees Fahrenheit by 2030—almost certainly by 2040—if there are no major cuts in CO_2 emissions. In fact, the report stated that even if such cuts were to begin immediately, they would only delay and not prevent this increase.

Many more explicit and urgent calls about the dangers of climate change have been made over the 30 years since Hansen's testimony. As recently as 2014, for instance, Elizabeth Kolbert drew upon the work of scores of scientists to predict that human activity and climate change would cause the extinction of 20%–50% of all living species by the end of this century in what she calls the "sixth extinction" (Kolbert, 2014). Indeed, the precipitous decline in earth's biodiversity and the extinction of animal and plant species have been convincingly traced back to human activity, for while climate change and pollution are significant drivers of this ongoing destruction, Kolbert also discusses human consumption patterns, habitat loss and degradation, over-exploitation of resources, and the introduction of invasive species as factors that have exacerbated this massive extinction. Even the World Wildlife Fund (WWF), echoing Kolbert in its *Living Planet Report*, accounts for an overall decline of 60% and 83% in vertebrate and freshwater species, respectively, between 1970 and 2014 (WWF, 2018). Marco Lambertini of the WWF states in the foreword of the report that,

> on one hand, we have known for many, many years that we are driving the planet to the very brink. This is not a doom and gloom story; it is reality. The astonishing decline in wildlife populations shown by the latest Living Planet Index—a 60% fall in just over 40 years—is a grim reminder and perhaps the ultimate indicator of the pressure we exert on the planet.

As Kolbert warns, then, the Earth is in the midst of a modern and anthropogenic sixth extinction that will likely be humanity's most lasting legacy, challenging the reader to rethink the fundamental question of what it means to be human.

Perhaps the most courageous, compelling, and urgent call to action, however, is Pope Francis's 2015 encyclical *Laudato Si'* (Francis, 2015; see also IPCC, 2018), a detailed document that

links human consumerism and irresponsible development with environmental degradation and the ultimate destruction of our "home." Francis explicitly states that preserving and taking care of our natural world is no longer "optional," that it is an integral and essential part of the Church's teaching on social justice. Most importantly, *Laudato Si'* unambiguously accepts the scientific consensus about anthropogenic climate change and urgently calls all peoples of the world to take "swift and unified global action."

> A very solid scientific consensus indicates that we are presently witnessing a disturbing warming of the climatic system … [and] a number of scientific studies indicate that most global warming in recent decades is due to the great concentration of greenhouse gases (carbon dioxide, methane, nitrogen oxides and others) released mainly as a result of human activity. As these gases build up in the atmosphere, they hamper the escape of heat produced by sunlight at the earth's surface. The problem is aggravated by a model of development based on the intensive use of fossil fuels, which is at the heart of the worldwide energy system. (Francis, 2015: #23)

> If present trends continue, this century may well witness extraordinary climate change and an unprecedented destruction of ecosystems, with serious consequences for all of us. (Francis, 2015: #24)

CLIMATE CHANGE DENIAL

> We are more [certain] that greenhouse gas is causing climate change than we are that smoking causes cancer.
>
> —Kate Marvel, NASA atmospheric scientist (Marvel, 2018)

> How sad to think that nature speaks, and mankind doesn't listen.
>
> —Victor Hugo (1840)[1]

In his 2016 book *The Great Derangement: Climate Change and the Unthinkable*, Amitav Ghosh notes that the scale of the crisis makes it all but "unthinkable" how anyone could deny the fact of anthropogenic climate change. Recent polls suggest, however, that more than 30% of Americans do not believe in the science behind it (Brenan & Saad, 2018). In fact, unlike the collective response to Kennedy in 1961, not only does a significant percent of the population not believe the scientific consensus that there is a connection between fossil fuel emissions and climate change, some do not believe that the climate has changed at

[1]See Hugo, 1968: 145.

all. It is a type of denial and colossal blind spot that is all but difficult to comprehend, yet it needs to be recognized as our new reality. Indeed, in their October 18, 2018 report entitled "Even Americans highly concerned about climate change dramatically underestimate the scientific consensus," Gustafson and Goldberg from the Yale Program on Climate Change Communication Center found that while 97% of climate scientists are convinced that anthropogenic global warming is occurring,[2] a large percentage of Americans still question the degree of agreement among them regarding the connection between fossil fuel emissions and climate change. In other words, most Americans think that there is scientific doubt on the causes of climate change. Gustafson and Goldberg thus argue that misinformation campaigns, in spreading doubt about climate change, have specifically targeted the scientific consensus, falsely stating that "there is still much debate among scientists" about whether the climate is changing at all or if this is being caused by humans. Such rampant demagoguery highlights the urgent need and opportunity for all of us to communicate effectively the fact that the science behind climate change has been settled. Clear messages about the indisputable scientific consensus can likely strengthen and solidify, at the very least, already existing pro-climate beliefs and attitudes.

It is also worth noting a populist trend directed against the so-called "intellectual liberal elites" which include scientists and academics. In her book *The Age of American Unreason* (2009), Susan Jacoby details the convergence of social forces over the last 40 years which ended up creating the perfect storm for an "anti-rationalism and anti-science movement." These forces include the upsurge of religious fundamentalism, the failure of education to create informed citizenry, junk or pseudo-science, the new culture of "distraction," the collapse of journalism, and the substitution of video/Internet-driven media over a print culture. Building on Hofstadter's *Anti-Intellectualism in American Life*, Jacoby asserts that citizens have embraced a culture of "junk thought" which makes no effort to separate fact from opinion and therefore views science *as* opinion. This level of scientific illiteracy has, in turn, provided fertile ground for political appeals that equate intellectualism and science with "elite" liberalism. Scientists have thus become part of the so-called "intellectual elites" who are, by proxy, enemies of the common sense that is supposedly a virtue of ordinary people. Climate science, then, immersed as it is in this social/cultural war, has been portrayed as a manifestation of "elite liberals" and has thereby become wrapped in this

[2]On the scientific consensus about anthropogenic global warming, see Cook et. al., 2013; Cook et. al., 2016; Ripple et al., 2017.

nonsense, making scientific evidence subject to cultural opinion and political debate (see also Brenan & Saad, 2018).

Against the background of this anti-science movement, Francis in *Laudato Si'* separates the Roman Catholic Church from other religious groups that have sided with climate change denial. Having studied chemistry in secondary school, the Holy Father follows in a long line of scientists who represent, as it were, the Roman Catholic Church's long contribution to scientific thought, including the likes of Nicolaus Copernicus, Gregor Mendel, Albertus Magnus, and Francis Bacon, among others (Lindberg & Numbers, 1986; Woods, 2005). In his book *God's Soldiers* (2004), Jonathan Wright even describes what he calls "the Jesuit science," characterizing the Jesuits as "the single most important contributors to experimental physics in the seventeenth century" (Wright, 2004). Indeed, *Laudato Si'* talks explicitly about the science behind climate change, with Francis ultimately arguing for the logic of sustainability based on the very foundation of all religions: the imperative to respect and care for God's creation, our home.

POLLUTION AND ENVIRONMENTAL DEGRADATION

> Exposure to atmospheric pollutants produces a broad spectrum of health hazards, especially for the poor, and causes millions of premature deaths. People take sick, for example, from breathing high levels of smoke from fuels used in cooking or heating. There is also pollution that affects everyone, caused by transport, industrial fumes, substances which contribute to the acidification of soil and water, fertilizers, insecticides, fungicides, herbicides and agrotoxins in general. (Francis, 2015: #20)

> The earth, our home, is beginning to look more and more like an immense pile of filth. (Francis, 2015: #21)

> Climate change is a global problem with grave implications: environmental, social, economic, political and for the distribution of goods. It represents one of the principal challenges facing humanity in our day. (Francis, 2015: #25)

If it is safe to assume that most human beings would like to enjoy the benefits of a clean and healthy environment, why not reduce pollution for the sake of breathing clean air and drinking clean water? Why is it so much easier to imagine a nuclear apocalypse compared to the deleterious effects of pollution, ocean acidification, global warming, and climate change? Why deny that fossil fuel externalities and human activity are changing the climate or, at the very least, degrading the environment?

Who ultimately benefits from climate change denial and environmental inaction? The obvious answer lies with the fossil fuel industry, which would need to surrender about $20 trillion in untapped wealth for the planet to avoid a temperature increase of two degrees. Robert Jay Lifton argues in *The Climate Swerve* (2017) that the last time assets like this existed and were stranded was in 1865, when the "assets" took the form of human beings—slaves made up to half of the economy of the Southern United States and 16% of the economy of the entire country, equivalent to about $10 trillion (see also Mouhot, 2011; Hayes, 2014). It was fortunate, then, that the abolitionist movement prevailed at that time despite seemingly insurmountable economic interests. Indeed, the conceptions of freedom that the abolitionist movement brought to bear—considered radical, extremist, and impractical at the time—are now taken largely for granted as obvious, inevitable, and just the right thing to do. Yet as it was with the recognition of the savagery of slavery, confronting climate change, a crisis that threatens the collapse of human civilization as we know it, demands a drastic rethinking of how we live and of the importance of "swerving" onto a sustainable path.

CULTURAL CRISIS AND THE NEED FOR INSPIRED LEADERSHIP

It seemed that we had finally achieved, with the Paris Agreement of December 2015 just a few years ago, a tipping point in universal awareness concerning the dangers of global warming that would finally result in action. There was so much hope; a new path which Lifton called a "swerve" had been drawn. Yet he notes that with the swerve came the "whiplash," and it was quick, sudden, and brutal—a crusade, one that denied anthropogenic climate change and redefined the scientific consensus as an "ideology," took hold as an anti-science movement which led to the U.S. exit from the Paris Agreement in 2017. The "whiplash" shocked the environmental movement and had a profoundly depressing effect which resulted in hopelessness (Ballew, Marlon, Maibach, Gustafson, Goldberg, & Leiserowitz, 2018), frustration, and paralyzing despair. A psychiatrist by training, Lifton described the new "climate inaction" among those of us who believe in the science of climate change as a "psychic numbing," a manifestation of "the mind's resistance to the unmanageable extremity of the catastrophe, to the infinite reaches of death and pain."

Environmentalists, lacking prior experience upon which to model this new crisis, are now left paralyzed. The world community is experiencing less of an outright denial and more of a protective inertia. Trapped between polar alternatives of catastrophe and business as usual, many have chosen the latter, failing as a society to innovate and envision alternative futures.

> It is remarkable how weak international political responses have been. The failure of global summits on the environment make it plain that our politics are subject to technology and finance. There are too many special interests, and economic interests easily end up trumping the common good and manipulating information so that their own plans will not be affected. (Francis, 2015: #54)

> We lack leadership capable of striking out on new paths and meeting the needs of the present. … (Francis, 2015: #53)

I do not think it is necessary to convince this Journal's readers of the crisis of climate change and environmental degradation that will lead to an unnatural "sixth extinction" of living species. This Journal's vision, after all, is grounded precisely on the premise that working toward a sustainable future is important for controlling the further deterioration of our planet; so yes, I know that I am "preaching to the choir." The stakes are so high, though, and the political environment so toxic, that we must "shake off" our inertia, get up, dust our knees, and stand to fight the good fight. The current climate crisis poses a challenge that is larger in scope and more encompassing than any other crisis humanity has faced, and we are at the forefront of this reality. Anything short of a revolution, an attitude and system change, will prove to be an inadequate response.

THIS ISSUE: INNOVATION FOR SUSTAINABILITY

Delving into the topic of "innovation for sustainability," this issue continues the Journal's mission of exploring how a more sustainable world can be sought and brought into being. The five articles found herein, which were presented at the 24th International Association of Jesuit Business Schools (IAJBS) Global Forum and 2018 Colleagues in Jesuit Business Education (CJBE) Annual Meeting on July 2018 at Seattle University in Seattle, Washington, showcase various approaches for innovating toward sustainability as they touch upon, investigate, and propose models that expand our knowledge for embracing the challenge of global transformation. "Innovation for sustainability"—this was the Forum's theme as well, addressed through research and plenary presentations among an extraordinary group of representatives from Jesuit business schools all over the world.

Stoner makes a bold and extraordinary proposition as he explores how business schools, both Jesuit and otherwise, can contribute to transforming our global producing-distributing-consuming systems into ones that will support the wellbeing and continued existence of our

own and other species. Grounded in the Ignatian model, Arnesen calls for the development of "ethical transformational leaders" to advance sustainability. Garwood, Neiva de Figueiredo, Miles, and Barrientos propose a model for teaching data analytics in a service learning context that enhances the efficiency of aid allocation. Bertaux and Skeirik present an innovative and original model for teaching sustainability through art. Trail and McCullough empirically examine the psychological constraints that affect intentions to act in a sustainable manner by investigating the attitudes and actions of sports participants.

Stoner suggests that what we teach and research in business schools may well be the vehicle for challenging and ultimately changing the current paradigm that controls the way the world produces, distributes, and consumes. Building on the submission of the leadership of the International Association of Jesuit Business Schools (IAJBS) and Colleagues in Jesuit Business Education (CJBE) for the 2016 MacArthur Foundation "100&change" competition, he contends that a new initiative driven by business schools can create the wake-up call that has been lacking despite repeated research reports about, and everyday evidence of, the steady deterioration of our ecological and human situation. In this light, Stoner argues that while current business education is contributing to global unsustainability by actively supporting business-as-usual mindsets and practices, business schools have exciting opportunities for innovation in teaching and research, discovering and applying new processes of organizational transformation, and developing new collaborative alliances between business schools, business enterprises, and other stakeholders. He then notes that Jesuit institutions are uniquely positioned to deliver on this opportunity, that Jesuit business schools are equipped with particular attributes that differentiate them from others, and that such attributes will enable them to communicate the realities of climate change and global unsustainability in ways that can no longer be ignored, thereby leading to global action on those realities that is inspired and guided by their own innovative and transformative efforts. Stoner describes six areas of differentiation: 1) the Jesuit mission—the *raison d'être* of Jesuit education is consistent with the kind of commitment and leadership for global sustainability called for in *Laudato Si'*; 2) heritage—Jesuits have led transformational societal changes throughout history; 3) scale and scope—there are 261 Jesuit business programs spread out across 28 countries which could prove to be an even greater force for global well-being if they act together in this domain; 4) breadth—there are around 17 million alumnae and alumni from Jesuit schools; 5) network—the IAJBS and CJBE provide a platform for executing and supporting such an initiative; and 6) alignment—the leadership of Jesuit business schools would be very much in line with Francis's call for global-level action in *Laudato Si'*.

Arnesen answers Francis's call for "leadership capable of striking out on new paths and meeting the needs of the present" and argues that "Jesuit business schools have an obligation to develop ethical transformational leaders who seek a just and humane world … to advance sustainability." In "Leadership, Vision, and Reflection: Applying Ignatian Concepts to Develop Transformational Leaders with a Select Application to Sustainability," he discusses why Jesuit schools have a unique opportunity and ability to apply Ignatian concepts in the development of responsible leaders. The article examines foundational Jesuit concepts and applies them to attributes of leadership, with Arnesen's model linking to leadership the insight of reflection, the gift of empowering others, the strength from building trust, and the rewards of silent servant leadership in helping others rise. The article thus presents an excellent model that can be easily applied in a leadership/management course.

In "Using the Business Classroom to Help Fe y Alegría-Bolivia Schools with Analytics and Pattern Visualization," Garwood, Neiva de Figueiredo, Miles, and Barrientos propose a model where students used data analytics to help a Jesuit-sponsored institution in Bolivia identify and target which participants in a survey are most in need of educational support. Using three years' worth of data, the results provided therein suggest that integrating data analytics in a mission-related partnership makes identifying the need for aid and delivering much-needed support in providing it more efficient. The article therefore shows how data analytics tools were successfully used to enhance service learning partnerships in particular and suggests that such tools can be used in many different domains. It also successfully integrates the theoretical principles of data analytics in support of Jesuit mission objectives.

Bertaux and Skeirik present a novel and interesting proposition, arguing that sustainability can be taught through art and that sustainability awareness can be enhanced through the medium of art. They posit in "Creating Pedagogy to Integrate Sustainability and the Arts" that the arts, given their unique and time-proven ability to inspire and move the human heart in authentic and unique ways, motivate individuals to act in a sustainable manner. In their view, a sustainability pedagogy utilizing the arts increases the depth and effectiveness of learning by reaching students empathetically as opposed to only intellectually. They examine four courses and two intensive off-campus programs from a variety of disciplines, including economics, music, history, sustainability, and digital media—all of which integrate arts and sustainability—and their results indeed suggest as much, that adding an integrated arts and sustainability course component does enhance the effectiveness and depth of student learning. The article concludes with a summary of guidelines that can effectively operationalize this integrated pedagogy.

In "Differential Effects of Internal and External Constraints on Sustainability Intentions: A Hierarchical Regression Analysis of Running Event Participants by Market Segment," Trail and McCullough examine the role and hierarchy of internal and external constraints on marathon runners and how these affect the intentions of these athletes to act in a sustainable manner. In other words, the article empirically investigates if, and how, internal beliefs (and constraints) and external messaging affect the intention to act sustainably. The results support the principles of constraint theory and suggest that internal constraints such as lack of knowledge and lack of worth positively predict intentions to act sustainably (e.g., to dispose of waste correctly), thereby providing evidence that internal constraints need to be addressed first before external constraints can become effective. In concluding that external messaging (marketing) only complements and does not substitute for internal constraints (knowledge and understanding), this study highlights the importance of the individual's understanding and knowledge of sustainability. It confirms Bertaux and Skeirik's argument to some extent by providing empirical evidence that an internal transformation is necessary for achieving sustainable behavior. Trail and McCullough thus confirm the need for education in their conclusion that knowledge, understanding, and comprehension are internal pre-requisites for an individual to act in favor of sustainability.

CONCLUDING THOUGHTS

We live on a planet with finite boundaries and yet we continue behaving as if its resources are without end. Steady and exponential consumption of resources without regard for limits is a model that is not sustainable, cannot continue, and has started to break down. There are no shortcuts to climate justice—climate change is the call to our civilization and its message has been delivered in the language of fire, drought, hurricane, storm, dramatic species extinction, disease, massive migration, and habitat degradation. We need to listen to nature's call and respond with action.

The movement to abolish slavery reminds us that there is precedent for a response as big as the one we contemplate today. Burning fossil fuels is, of course, not the equivalent to owning slaves; there is no question that the moral imperative to liberate millions of human beings represents one of the greatest human rights achievements in history. Yet what makes this comparison relevant are the economic interests that stand to be defeated. As with the abolitionist, universal suffrage, and equal rights movements, the fight against unsustainable development and

the use of fossil fuels needs to be seen in light of the assertion that life in all its forms has intrinsic value. All these movements used economic arguments in building their case for justice, yet their victory did not come by putting monetary value on the granting of equal rights or the liberation of an enslaved population. They won by asserting that those rights and freedoms were too valuable to be measured in monetary terms and were inherent in all living things.

There is no doubt that economic arguments for moving beyond fossil fuels exist and that these are worth communicating through our research and teaching. Yet we will not win the climate battle by trying to convince corporations and governments that it is more cost-effective to invest in emission reduction now rather than in disaster response at a future time when we may no longer be alive. Human beings, unfortunately, are oriented toward the short-term, and some may not even be capable of sacrificing present convenience to forestall the penalty imposed on future generations. If we could really take a long-term view of the consequences of our actions, such as considering the fate of civilizations long after our own deaths, we would be actively grappling with the transience of what we are, know, and love. Maybe we have trained ourselves to evolve so that we concentrate only on the present, consider the medium term, and forget about the future; if so, the argument about how costly the effects of climate change will be in 30 years or by the end of the century might not be the best one. We will win only if we unapologetically assert that justifying the imperative of reduced fossil fuel consumption using a cost/benefit approach is morally bankrupt since doing so implies that there is a quantifiable price for allowing species to go extinct, cities to disappear, leaving millions to die of hunger on parched land, and denying our children and future generations their right to live on a planet with the wonders and gifts of creation. No, the effects of anthropogenic climate change *do not* have any quantifiable value.

I began this editorial by citing President Kennedy. Reading through his speeches, I discovered intellectual thought delivered through a masterful invocation of reason and its power for good. Calling for negotiation with the Soviet Union before students at American University in Washington, D.C., he described peace negotiations and nuclear disarmament as "the necessary rational end of rational men," asserting that "[human] reason and spirit have often solved the seemingly unsolvable—and we believe [we] can do it again." He also clarified that this was not just wishful thinking: "I am not referring to the absolute, infinite concept of [universal] peace and goodwill of which some fantasies and fanatics dream" but to achievable, necessary, and pragmatic reality (Kennedy, 1963).

Senator Robert F. Kennedy delivered a speech in similar fashion in Indianapolis soon after Martin Luther King Jr.'s assassination. Speaking to a predominantly African-American crowd that was experiencing the trauma, anger, and despair of such a tragic event, he had to improvise and address the reality of what had just happened. He pointed out that moments of crisis are times for us to look inward and ask, "What kind of nation are we?", and cited, in a choked voice, the playwright Aeschylus:

> *Even in our sleep, pain which cannot forget*
> *Falls drop by drop upon the heart,*
> *Until, in our own despair,*
> *Against our will,*
> *Comes wisdom through the awful grace of God.* (Kennedy, 1968)

Writing this editorial has been an intense and, at times, depressing task, and so I have for this reason sought inspiration and hope in others who lived through tumultuously difficult periods. Even so, perusing the speeches of Presidents Kennedy or F. D. Roosevelt, for that matter, is almost like reading from another world, one brimming with inspired rhetoric elevated in a language and tone no longer seen, unfortunately, in political discourse today. Sixty years ago, cultural literacy and intellectual capacity in a President or politician were collectively perceived as necessary traits and essential attributes for exemplifying the highest ideals of civility. The general citizenry thus respected and admired its leaders, intellectuals, and scientists not so long ago, at a time when messages like the need for sustainability might have been fully embraced. So much has changed, however, thereby begging the question: what must we do to overcome this obstacle? What do we need so we can return to a collective respect for rational and scientific evidence? Does it even matter?

We have (at least) four problems. First, and perhaps the greatest, is the cultural challenge. We need to find a collective voice that rejects the irrational and demands answers and guidance through facts, science, and faith. Second, we need to communicate that climate change and global unsustainability, far from being related only to weather change, also encompass changes in our flora and fauna as well as the deterioration of human health brought on by environmental degradation. We need to stop what we have been doing for too long now: taking nature for granted.

The third problem is economic: we can no longer ignore the impact of currently unsustainable production models and wasteful lifestyles. We need to recognize, for instance, that the fossil fuel industry's economic interests and incentives are at odds not only with our short- and long-

term goals but maybe even with our very existence as well. Yes, there are costs that we will have to bear, and these must all be accounted for and addressed.

The last problem is inertia. We need to articulate the moral imperative of living sustainably to wake up the good in all of us simply because it is the right thing to do. We need to empower all citizens with the ability to know that this can be done. We need to reflect on what it means to be human.

I recommend that we read once again the very first article of this Journal. Written by my dear friend Bill Weis, "Hypocrisy at the Lectern: Do our Personal Lifestyle Choices Reflect our Spoken Commitment to Global Sustainability?" will certainly be a wake-up call for those of us who call ourselves environmentalists. Read it. Discernment and reflection are indeed necessary for us to move forward.

MOVING FORWARD: A CALL FOR ACTION

Other than using our voices every day to communicate that human beings have altered the environment and created climate change, there are some objective and measurable actions we can take on an individual basis, in our teaching and research, and this Journal and Issue give us examples of how to do so. Among the many opportunities for each of us to make substantive contributions, for instance, Hawken (2017) presents and provides brief but detailed summaries of a truly exciting set of possibilities for involvement and action in what he calls the 100 most substantive solutions to global warming action. And, as Weis (2013) notes, of course, we need to make changes in the way we live; in this light, some specific ways to help include reducing meat and dairy consumption, producing less waste, consuming locally sourced products, using video-conferencing instead of traveling, and demanding low-carbon externalities in every product, among others.

Skeptics will argue, however, that developing countries like China and India will continue polluting and contributing over one third of the world's greenhouse gas emissions even if we individually adopt sustainable attitudes and/or the United States follows the Paris Agreement. Indeed, according to the 2017 Science for Policy Report of the European Commission's Joint Research Centre (Janssens-Maenhout et al., 2017), China and India emit 26.6% and 7% of all greenhouse gases, respectively, compared to the United States' 13%. As such, why sacrifice the economic growth that can be achieved with cheap energy if China and India will continue polluting anyway? Although we can argue a moral

imperative to act in a sustainable manner, such nation-based analysis is flawed. We should examine instead the value of tracing emissions to producers; that is, we need to analyze emissions in terms of the fossil fuels produced by public and state-owned firms rather than by nations. Heede (2014), for instance, quantified the fossil fuel production records of 90 firms[3] from 1854 to 2010 and found that 63% of all worldwide emissions can be attributed to them. The results of Heede's extraordinary investigation suggest that even though a nation-based analysis is useful, particularly for allowing the formation of multinational agreements within the jurisdiction of international law, we need to evaluate shifting responsibility to those firms that produce fossil fuels by tracing their emissions. Heede's study invites us to consider assigning to those firms who have extracted, refined, and marketed two-thirds of carbon fuels the responsibility for causing—and remedying—climate change.

Heede's findings also suggest collective action. To begin with, we need to advocate for all Jesuit universities to join the Fossil Fuel Divestment movement and sell (divest) whatever financial holdings in fossil fuel companies they may have. Led by citizens and, in the case of universities, student "activists," the Fossil Fuel Divestment movement maintains that the business model of the fossil fuel industry is unsustainable and will ultimately lead to an uninhabitable planet. Its immediate goal is to make it clear that oil companies play a role in society similar to that played by tobacco firms—as a hazard to life; the ultimate aim, of course, is to free ourselves fully from our addiction to fossil fuels. The divestment movement in educational institutions is also grounded in exposing a moral hypocrisy, for universities on the one hand are entrusted to prepare students for the future and yet are profiting at the same time from an industry that is destroying that future.

Such an argument based on moral hypocrisy is particularly significant in the case of Jesuit institutions whose mission is guided by a Roman Catholic Jesuit tradition. Surprisingly, however, the only Jesuit university to have fully agreed to divest from all fossil fuel companies is Seattle University (Sanchez, 2018). Georgetown University, in the only other divestment action performed by a Jesuit educational institution, sold its holdings in companies involved in coal mining and tar sands

[3]Heede (2014) evaluates 50 public- or investor-owned and 40 partially or fully state-owned companies. Some of the firms partially owned by the state had undergone a process of privatization and are publicly traded entities that still might be under some state ownership. Heede does not consider a weighted investor/state-owned analysis.

oil extraction but fell short and did not go as far as Seattle University in divesting from *all* companies associated with fossil fuels.[4]

> As a Jesuit and Catholic university, we have a special obligation to address the unfolding climate change crisis. In his encyclical *Laudato Si'*, or "Care for Our Common Home," Pope Francis calls us to view this as a social and ecological issue of grave urgency that is connected to all around us and that has especially devastating consequences for society's most vulnerable.[5] (Stephen V. Sundborg, S.J., President, Seattle University, Sept. 11, 2018 [see Sanchez, 2018])

Organize. We must join the students who have been promoting the fossil fuel divestment movement. Go to https://campaigns.gofossilfree.org/ and "walk the walk." Let us use our collective voice.

This is the greatest challenge our generation—nay, our species—has ever faced. Yet those of us in universities in particular have a chance to help everyone recognize that we can be women and men for others as we work together to meet it. We know that protecting nature is also about protecting our home and, ultimately, about saving lives. Educators thus have a special opportunity to act as enlightened leaders and champions for future generations. Indeed, while the call to action is loud and clear particularly for those of us entrusted to work in Jesuit institutions, every one of us in any university for that matter needs to be reminded of our roles as teachers and researchers—creators of knowledge—in educating, inspiring, changing the culture, and, like the abolitionists before us, freeing the imagination to what is possible so that we may inspire action. Irrational optimism might just win where rational arguments have failed; hope and faith, after all, are our most human qualities. Each of us is called, then, to recognize and act upon the power for good that we each possess. We need to recognize, ultimately, that we all have the opportunity to be part of a truly historic transformation. This is it. This is our chance.

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[4]A list of educational institutions that have divested from fossil fuel companies is available at https://gofossilfree.org/divestment/commitments/.

[5]Speech available at http://fore.yale.edu/news/item/seattle-university-board-votes-to-divest-from-fossil-fuels/.

REFERENCES

Ballew, M., Marlon, J., Maibach, E., Gustafson, A., Goldberg, M., & Leiserowitz, A. 2018. ***Americans are more worried about global warming, and show signs of losing hope.*** Yale Program on Climate Change Communication, October 9.

Brenan, M., & Saad, L. 2018. Global warming concern steady despite some partisan shifts. ***Gallup.*** Available at https://news.gallup.com/poll/231530/global-warming-concern-steady-despite-partisan-shifts.aspx?version=print.

Cook, J., Nuccitelli, D., Green, S., Richardson, M., Winkler, B., Painting, R., Way, R., Jacobs, P., & Skuce, A. 2013. Quantifying the consensus on anthropogenic global warming in the scientific literature. ***Environmental Research Letters,*** 8(2). Available at http://iopscience.iop.org/article/10.1088/1748-9326/8/2/024024/pdf.

Cook, J., Oreskes, N., Doran, P. T., Anderegg, W. R., Verheggen, B., Maibach, E. W., Carlton, J. S., Lewandowsky, S., Skuce, A. G., Green, S. A., & Nuccitelli, D. 2016. Consensus on consensus: A synthesis of consensus estimates on human-caused global warming. ***Environmental Research Letters,*** (11)4: 048002.

Francis. 2015. ***Laudato si': On care for our common home.*** Vatican City: Libreria Editrice Vaticana.

Ghosh, A. 2016. ***The great derangement: Climate change and the unthinkable.*** Chicago/London: University of Chicago Press.

Gillis, J. 2018. He was right about the climate. ***New York Times,*** June 24: SR11ff.

Gustafson, A., & Goldberg, M. 2018. Even Americans highly concerned about climate change dramatically underestimate the scientific consensus. ***Climate Note.*** Yale Program on Climate Change Communication.

Hawken, P. (Ed.). 2017. ***Drawdown: The most comprehensive plan ever proposed to reverse global warming.*** New York: Penguin.

Hayes, C. 2014. The new abolitionism. ***The Nation,*** April 22.

Heede, R. 2014. Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854–2010. ***Climatic Change,*** 122(1–2): 229–241.

Hugo, V. 1968. ***Oeuvres complètes de Victor Hugo,*** vol. 35. Paris: Éditions Recontre.

IPCC [Intergovernmental Panel on Climate Change]. 2018. Rapid response needed to limit global warming: Summary for policymakers of IPCC special report on global warming of 1.5°C approved by governments. ***Science Daily,*** October 8. Available at www.sciencedaily.com/releases/2018/10/181008075147.htm.

Jacoby, S. 2009. ***The age of American unreason.*** New York: Vintage Books.

Janssens-Maenhout, G., Crippa, M., Guizzardi, D., Muntean, M., Schaaf, E., Olivier, J. G., Peters, J. A., & Schure, K. M. 2017. ***Fossil CO2 & GHG emissions of all world countries.*** Luxembourg: Publications Office of the European Union.

Kennedy, J. F. 1961. ***Address before the General Assembly of the United Nations.*** Available at https://www.jfklibrary.org/archives/other-resources/john-f-kennedy-speeches/united-nations-19610925.

Kennedy, J. F. 1963. ***Commencement address at American University, Washington, D.C.*** Available at https://www.jfklibrary.org/archives/other-resources/john-f-kennedy-speeches/american-university-19630610.

Kennedy, R. F. 1968. ***Statement on assassination of Martin Luther King, Jr.*** Available at https://www.jfklibrary.org/learn/about-jfk/the-kennedy-family/robert-f-kennedy/robert-f-kennedy-speeches/statement-on-assassination-of-martin-luther-king-jr-indianapolis-indiana-april-4-1968.

Kolbert, E. 2014. ***The sixth extinction: An unnatural history.*** London: Bloomsbury Publishing.

Lifton, R. J. 2017. ***The climate swerve: Reflections on mind, hope, and survival.*** New York: The New Press.

Lindberg, D. C., & Numbers, R. L. (Eds.). 1986. ***God and nature: Historical essays on the encounter between Christianity and science.*** Berkeley, LA: University of California Press.

Marvel, K. 2018. Climate change: Will technology save us? ***Intelligencer LIVE.*** September 25. New York: New York Magazine/The Nature Conservancy.

Mouhot, J. F. 2011. Past connections and present similarities in slave ownership and fossil fuel usage. ***Climatic Change,*** 105(1–2): 329–355.

Rich, N. 2018. Losing Earth: The decade we almost stopped climate change. ***The New York Times Magazine,*** Aug. 5.

Ripple, W. J., Wolf, C., Newsome, T. M., Galetti, M., Alamgir, M., Crist, E., Mahmoud, M. I., Laurance, W. F., & 15,364 scientist signatories from 184 countries. 2017. World scientists' warning to humanity: A second notice. ***BioScience,*** 67(12): 1026–1028.

Sanchez, B. 2018. Seattle University plans fossil fuel divestment: Will other Jesuit schools follow its lead? ***America: The Jesuit Review,*** November 28.

Shabecoff, P. 1988. Global warming has begun, expert tells Senate. ***The New York Times,*** June 24.

Weis, W. 2013. Hypocrisy at the lectern: Do our personal lifestyle choices reflect our spoken commitment to global sustainability? ***Journal of Management for Global Sustainability,*** 1(1): 29–45.

Woods, T. E. 2005. ***How the Catholic Church built Western civilization.*** Washington, DC: Regnery Publishing.

Wright, J. 2004. ***God's soldiers: Adventure, politics, intrigue, and power: A history of the Jesuits.*** London: Harper Collins.

WWF [World Wildlife Fund]. 2018. ***Living planet report 2018: Aiming higher.*** M. Grooten & R. E. A. Almond (Eds.). Gland, Switzerland: WWF.