

SEEKING COMMON GROUND BETWEEN THEOLOGY AND SUSTAINABILITY SCIENCE FOR JUST TRANSITIONS

by Jason S. Sexton  and Stephanie Pincetl

Abstract. The new field of sustainability science that has arisen over the past three decades, largely oriented toward cities, under closer examination may prove to be wholly inadequate to deal with the issues it was initially designed to address. Built largely upon modernist value assumptions, its entire range of outlooks has failed to account for the character virtues needed to realize sustainable approaches for the future, which are better found working within different religious traditions' theologies and ethical outlooks. In light of this, the present article takes up a replicable agenda for analyzing how these particular character virtues—with special focus on parsimony and future-mindedness—work with regard to visions of sustainability that promise to bring about a more just transition in cities.

Keywords: Buddhism; character virtues; Christianity; just transitions; religion; sustainability; theology; theology and science; urbanism

INTRODUCTION

Over the past three decades, a new kind of science has arisen called “sustainability science.” As a broad category spanning several academic disciplines and containing multiple growing subcategories, much of the work of the field of sustainability science is oriented toward cities. It partly arose from the Brundtland Commission's 1987 UN Report, *Our Common Future*, that recognized how economic and urban growth have taken a toll on the environment and human well-being. Scientific analyses grounded in the new broad field of sustainability science that arose since the Brundtland report show the rapidly increasing impacts on Earth systems¹ that are occurring from economic activities and accelerating urbanization. Corresponding moral, ethical, spiritual, and theological concerns have also

Jason S. Sexton is a Theologian, Lecturer in the Sociology Department, and Visiting Research Scholar in the Institute of the Environment and Sustainability at the University of California, Los Angeles, CA; e-mail: jasonsexton@ucla.edu. Stephanie Pincetl is an Urban Geographer, Professor, and Director of the California Center for Sustainable Communities in the Institute of the Environment and Sustainability at the University of California, Los Angeles, CA, USA; e-mail: spincetl@ioes.ucla.edu.

[*Zygon*, vol. 0, no. 0]

www.wileyonlinelibrary.com/journal/zygon

© 2022 The Authors. *Zygon*® published by Wiley Periodicals LLC on behalf of Joint Publication Board of *Zygon*. ISSN 0591-2385
This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

grown significantly, questioning current paths on the grounds of their unsustainability. These concerns have begun to grapple with what Norman Wirzba calls “the unrelenting pursuit of more,” and the large failure to exercise gratitude, acknowledge limits, and understand the cosmos as sacred and mysterious, and thereby undermining “the long-term viability of the system as a whole” (Wirzba 2021, 29).

Upon further analysis, the new field of sustainability science may in fact be wholly inadequate to deal with the issues it was initially designed to address on several fronts: Earth systems science, economic science, and equity strategies. While Earth systems scientific research has collected ample evidence, producing endless models and papers on Earth systems impacts and declines from modern human activities, their work has not led to global action, leaving many climate scientists frustrated and some ready to quit altogether (Zhong 2022). Economic science has been unable to reconcile the sustainable growth goal with current configurations of capitalism, and the failure of both has done little to advance the goal of justice. Thus, we ask whether this work adequately explains what it set out to explain, model, or propose. Does sustainability science, as it has been conducted, even have the capacity to explain everything necessary to address the nature of the current crisis? Modern scientific inquiry has often been bereft of acknowledging particular sets of value assumptions in its work, often impaired by uncritical approaches to its own origins and historical developments. Modern assumptions about the need for new control technologies, for example, to address certain problems have also perpetuated a lack of clarity regarding research limitations and have exposed real questions about the goals of the disciplines. They continue to be guided by a strong divide between society and nature, elevated ideas about the rationality of human nature, and a kind of Promethean sense of being able to steer the future with just the right tools, techniques, and science.

Sustainability science as a field has struggled to acknowledge these manifold complexities surrounding precisely what has led to the unrelenting velocity of our current unsustainable course, and to recognize the set of historically embedded implicit values that have been operating to lead to the present predicament. This includes the very scientific enterprise as a social endeavor, which is loaded with internal contradictions, deep positionality, and often unchecked cultural assumptions (Harding 2015). In terms of gaps of knowledge, then, what remains missing? And what kind of prescriptive options might be needed that science—by its very nature as measurement-driven and descriptive—is unable to deliver in ways that other fields and other modes of inquiry much more readily can? Normal science, or the contemporary state of the evolution of Enlightenment science, has largely neglected its own genesis and history, its own norms, codes, and standards that order the world in a particularly historically embedded manner, excluding other forms of knowledge as illegitimate,

or inferior. This has included (although starting to change) its dismissive posture toward Indigenous knowledge, which is based on observation, empathy, and kinship with place, leading to a deep, sensitive awareness of processes and relationships (Escobar 2018; Liboiron 2021; McKittrick 2021; Whyte 2021; Lyons and Jones 2022; Tuck).

Contestations about the “truth” regarding the future of the Earth as we know it, and how to “know it,” have greatly challenged our very civility. They have created and cultivated distance between many fields that have reason to be concerned with sustainability, and have further bred what Catherine Keller calls, “*Our* internal contradictions—between radicals and moderates, between cultural identities and economic classes, between secularism and religion—[that] fester beneath the surface of a limply presumed consensus [about humans’ relationship to the Earth]” (Keller 2018, 26). But even this consensus is rife with difference. Take the ecomodernists versus the Intergovernmental Panel on Climate Change (IPCC) for example. The ecomodernist manifesto (<http://www.ecomodernism.org>) argues for humans’ power and ability to create a “good Anthropocene” by using their growing social, economic, and technological powers. In contrast, the IPCC strongly warns of our growing greenhouse gas emissions and impacts on humans, fauna and flora, climate, oceans, and more, and accordingly advocates for a reduction of the use of fossil energy and, implicitly, a reduction of economic growth. Ecomodernists believe that humans have become less reliant upon the many ecosystems that once provided their only sustenance, even as those same ecosystems have often been left deeply damaged. Both groups are informed by sustainability science.

The recent smashing up of multiple realities—the COVID-19 pandemic (a result of human practices of harvesting wild animals to sell them in overcrowded urban markets, indicative of unsustainable cities and practices) and its horrifically unequal impact on the poor and people of color, along with the terrible continued targeting and killing of Black people as a result of systemic racism—calls for ongoing and deeper examinations beyond current conventions, and includes a focus on the intersections of faith and science. We also need to examine how three decades of sustainability initiatives and plans, predicated on normal science, economic growth, and concern for the disadvantaged have mitigated impacts of modernist-assumption-driven human activities, if they have at all. The fate and well-being of people, including their ability to live full lives free from discrimination, falls into the question of sustainability and its trajectory. To this end, the positions of faith and science need to be better understood and more broadly conceived beyond simply biophysical measurement of communities and their instrumentalization. There is a need to investigate if and how faith and science inform one another around questions of sustainability and equity, and what might be possible if they did so in order to address the contemporary crisis.

Exploring how those interactions work and can be measured in *civic space* is critical to understanding how to secure a better way beyond the current impasse and considering how the traditions of science and faith may inform civic action related to sustainability. The intersections between urban sustainability science and contemporary theological and philosophical thinking about the current course of planetary urbanization, specifically in the United States, are critical for the kinds of moral issues that have arisen. Further research will be needed to test our research aims, wherein we wish to create more explicit theoretical and conceptual bridges between sustainability science (with its historic commitment to equity) and theology, and to discover what bridges already exist and therefore need exploration into their value assumptions and views for change, along with revisions and further development.

RESEARCH FOCUS IN LOCAL PERSPECTIVE

The complexity of the problem today requires targeted and triaged approaches. It requires social scientific research and data, especially since it proceeds under a shadow of a violation of trust, and in light of the removal and replacement of communities deeply committed to the land. Theologian Willie James Jennings refers to this as a “geographical wound” caused by foreigners coming in to assert and insist that they can “see” God’s creation better than the earlier dwellers could (Jennings 2018; see also Sexton 2022, 136–38). The current situation, then, requires a more deeply grounded and embodied understanding of the Anthropocene² within the context of not only this violation, and what Jennings calls “a hermeneutics of possession” that has generated notions of racial identity and private property, but also the ongoing questions of deep time, materiality, and the afterlives of both geological and bodily extraction that are just beginning to be reckoned with (Yusoff 2018). Contra the Normal science research paradigm, these acknowledgements would recenter where research starts: within a particular place, situated and informed by relationships of trust. There is no “outside” view that is objective and neutral, since we are all situated, contingent, historical beings, best enabled to see when such factors are recognized, cultivating the kind of work that is respectful, nurturing, and builds wholesome relationships (Harding 2015; Liboiron 2021). From this frank acknowledgement, we enable others to know our assumptions and understand our work for what it is, without pretending to be able to discern universal principles.

While not unaware of what Ruth Wilson Gilmore refers to as “one of democracy’s contemporary delusions—the notion that more local is somehow more participatory” (Gilmore 2022, 486), we recognize the need for grounding our research, since it is where we know. Our work then aims to focus on the importance of *civic space* as the sphere of public

interaction where civility is formed and performed, where values are expressed and enacted, such as recent demonstrations in support of Black lives, or in support of climate science. It is the space where clergy and civic leaders come together in public unity and in support of values such as empathy, patience, courage, and belief in God. There is plenty of evidence of cross-pollination between scientists and religious communities,³ but what is the rationale behind this and how does it work? With the problems facing cities today—inequality, pollution, poverty, homelessness, hostility, alienation, exploitation, despair, and the basic urban impact of COVID-19—how does religious faith factor into sustainability science research, especially around just transitions (Cha et al. 2021) and consequently into the virtue and values that inform ethical behavior? And how do factors as described by science reciprocally influence religious faith?

Our research also considers the important *civic leaders* who come from different spheres of public life: from the obvious cadre of elected and appointed officials and religious leaders to those who form nonprofit organizations that engage in the public sphere by advocating for change, to university researchers, to the concerned public who are active in debates and discussions about how cities are governed, and who wins and who loses. In some ways, we are curious to discover whether there is a new kind of public theology starting to emerge, and what this might look like relative to questions around faith and science as they work out in civic space, and what consequences may contribute to the future as a result of particular actions. Our curiosity is theoretical, yet includes empirical analysis of action and the urban realities resulting from decisions made by religious people acting in civic space (Montgomery 2020).

And while notoriously difficult to define, we understand *religion* as reflecting complex and dynamic belief systems that are, on one hand, theological, philosophical, informed by data and theory, and therefore able to be analyzed critically in their internal structural developments and variations. On the other hand, religion is also practical, and thus able to be assessed empirically through concrete material activities taken relative to matters of sustainability such as behavior change or else by participation in groups and organizations working for change in the public sphere. This requires an interdisciplinary inquiry, considering various normative belief structures adhered to by self-identifying believers of traditional Western and Eastern religions (which maintain claims that are always contestable in their revisable constructs), as well as to other religious traditions, including those with an aesthetic openness and other forms of meaning making. This includes those drawing from apophatic traditions, along with newly formed chosen communities, as well as the ancient Indigenous traditions, open as much to the transcendent as to revelation and discovery, which amounts to a core feature of what it means to be human (Fuentes 2019, 146).

A JUST TRANSITION FOR WHOM? CHARTING CONTRIBUTIONS
FROM RELIGION AND BEYOND

Urban sustainability geographers have been at the forefront of developing theories of “just transition,” which is a fair and inclusive transition toward sustainability that leaves no one behind, especially considering communities that will bear the most impact from decarbonization and other resource use mitigation to reduce impacts. Such an approach encompasses environmental quality and well-being, human dignity, health and equity, and examinations into current economic systems and effects of inequality in cities: poverty, racism, lack of housing, poor health, lack of access to open space, police violence, and more (Agyeman 2013; May and Perry 2017; Heynen et al. 2018; Pincetl et al. 2020). These geographers are interested in cities’ spatial organization, as well as issues of governance and leadership. The “right to the city” movement, for example, inspired by French theorist Henri Lefebvre, encompasses much of this work, though now also inflected with research from biophysical scientists working in cities. This includes research on problems like the distribution of air pollution, exposure to high heat, water and soil contamination, and related human health outcomes.

But is it ever possible to know what the difference is between a society (or city) in transition and one that is not? How would one know that they are adequately in transition? In our estimation, and in spite of the many initiatives based on normal science, we are not actually in a just transition. Cities are constrained by states’ laws, with the only real exception being that cities have jurisdiction over land use. This deals with policy, including political and cultural matters working in a given society, and also includes religion and theology (Colucci-Gray et al. 2013, 174; Chitanda, Conradie, Kilonzo 2022) as well as having an inclusive approach to those on the margins, if this is a democratic matter. This raises several further issues and layered factors related to urban form, income strata with regard to energy excess and insufficiency, and how the current system fails entirely to address these critical issues. As botanist Robin Wall Kimmerer (Potawatomi) reminds us about the current situation in the market economy:

The market system artificially creates scarcity by blocking the flow between the source and the consumer. Grain may rot in the warehouse while hungry people starve because they cannot pay for it. The result is famine for some and diseases of excess for others. The very earth that sustains us is being destroyed to fuel injustice. (Kimmerer 2013, 376)

The current system is therefore inadequate to realize the just transition, which as a concept needs theological work in order to be better understood

and realized in ways that reject the status quo and resist further forms of injustice.

Sustainability in the Brundtland vision is conceived as a three-legged stool: environment, economic, and social equity—all informed by an economic growth paradigm. Yet, as Hodson and Marvin (2017) point out, sustainability approaches have been fragmenting over time, especially within the research community. On the ground in Los Angeles, the County recently completed its first sustainability plan in 2019, and many municipalities are following suit. The plan fully embraces the need for environmental protection and environmental justice concerns, the need for equitable and sustainable economic development, as well as greater social equity. These research and practice communities are motivated by moral and ethical commitments to equity and justice, as well as Earth systems health. But due to a significant lack of research, what is not known is how informed or motivated they are by religious values and commitments, nor how such plans may in turn influence religious values and commitments.

In our region, religious communities have not been absent from civic action on environmental issues. Catholic Workers, Black churches, Indigenous peoples, and other communities of faith have mobilized to end oil and gas extraction (Los Angeles remains a major urban region for oil and gas), and to combat homelessness and ecological degradation that especially impact people of color and the poor. Amid the secularization of the public square, often these religious communities' views have been reduced to personal or social ambition and aspiration, and are often left out of consideration when it comes to wider civic matters.⁴ And for reasons that include both conceptual and language barriers, along with various assumptions promulgated and reenforced by media sources, the reduction or dismissal of religious communities' views often creates cognitive dissonance toward efforts to understand precisely how particular religious views shape different outlooks and actions on sustainability. This is often exacerbated as civic leaders, who although often part of religious communities, are making important decisions while simultaneously being less explicit about their personal participation within their religious faith communities, and how these communities shape their views. We seek to bridge these knowledge gaps, exploring reasons for the silences while also exploring where faith may be importantly tacitly (if not explicitly) at work in meaningful ways.

Religious views—or views directly informed by religious practices or texts and values from both prominently figured and lesser-known belief systems—frequently influence perspectives on sustainability and matters related to the environment. Often these views and perspectives do not closely connect the questions of science (and scientific knowledge) to religious ways of knowing, nor do they investigate how religious perspectives and spirituality may intersect with scientific understandings of the world.

Exceptions exist, seen in recent work by the noted geographer and climate scientist Mike Hulme (2014; 2017, 14–17). Scientific understandings are based on the development of hypotheses, experiments, and data analysis of results. However, these too are fundamentally informed by predispositions, presuppositions, and beliefs about how the world works, guided by implicit values (as with economic science), even while not necessarily assuming the existence of a divine being. Yet when beliefs and scientific understandings do connect, they often give rise to a range of opinions spanning the spectrum from climate change denial to climate change activism, affecting communities in noteworthy ways: motivating action, fear, resignation, lifestyle changes, political effort, and so on. Of particular interest is how specific character virtues like parsimony and future-mindedness inform our inquiry, either carrying potential value for the debate and understanding of the current situation, or else perhaps having been neglected in current discussions, and rationale for this.

Several research projects have been recently conducted or are currently underway focusing on barriers that exist between people of faith and science, exploring mutual distrust between scientific and religious communities and their members.⁵ Our project proceeds in light of these and other efforts like that of Indigenous scholars like Max Liboiron, but also with the need to develop more foundational theoretical work for understanding how religion informs views on sustainability, or otherwise does not, and especially how these views work concretely with decisions made and efforts enacted in a particular place. We address and include the public sphere, the sphere of *civitas*, as an important site for this unfolding. As such, we add a new dimension to an older discussion between evolutionary science and religious faith, to include issues of human impacts on Earth systems (such as climate) and human health and well-being, moving beyond the abstract discourse (e.g., Plantinga 2011) and into empirical data, including an expanding frame beyond the religious and scientific traditions of the West to consider those of the East, Indigenous traditions, and otherwise.

Our research focuses more on how religious faith works on location, through various understandings of sustainability in an urban context. Today's vivid intersections of race and disease, poverty and unsustainable cities, and the outpouring of grief and solidarity amid forms of violence that do not allow these engaged people to flourish at their full potential, offer a timely opportunity to probe deeply into how and if there are interactions between the leaders of local religious communities and sustainability science. If environmental justice is a significant foundational component of thinking about just transitions, communities having arisen in civic space with (and without) various religious components need to be understood, and with increased significance during COVID-19.

The convergent nature of our inquiry as an interdisciplinary social scientific project gathers insight through empirical research rather than

entirely through more speculative and theoretical forms of knowledge like theology, philosophy, or even moral theology/philosophy and ethics, and analyzes both theological views and sustainability science in order to tease out how these views (and value assumptions) work in civic space. Sustainability science, slightly elided with climate science, remains measurement driven and descriptive. And while aware that geographers and historians have been working to add additional dimensions such as history, economics, and urban theory, we believe that an adequate assessment will be able to diagnose the drivers of the current situation to yield better insight into needed alternatives, along with ethical guidance. An example of this was on display during the Fall 2020 UCLA Grand Challenge initiative aimed to connect leading experts across fields in focused collaborative efforts toward a sustainable Los Angeles.⁶ Throughout multiple meetings with many different colleagues, a repeated theme emerged leading several participants to verbalize the notable absence of—as well as significant need for—an ethicist. But the matter becomes more pressing when ethics cannot merely be seen as an adjunct component of the inquiry, as science and other disciplines have been long prone to proceed: “bring the ethicists to help us once we have done the *real* work.” Perhaps, instead, the critical issues ought to be understood as ethical from top to bottom.

Judith Butler defines the ethical as neither mere conduct nor disposition, but rather “characterizes a way of understanding the relational framework in which sense, action, and speech become possible. The ethical describes a structure of address in which we are called upon to act or to respond in a specific way” (2015, 12). Kathryn Yusoff develops Butler’s notion of ethics as structure-of-address to be about more than a tale of good or bad actions in the Anthropocene (cf. the ecomodernists) and rather “about the relational redescription of the racial mattering and spatial practices within and through geological relations” (2018, 62). Such a redescription demands a reckoning with both history and ontology, and various assumptions about what is real. This is precisely where religion and religious communities and their beliefs and actions cannot be discounted, both in scientific analysis as well as in considering how religion actually works in the real world. From a Christian perspective, James McClendon developed his entire theological project on this basis, and moved to “jettison the entire unworkable proposal that ethics is a series of deductions from doctrine.” He opted instead to “begin by finding the shape of the common life in the body of Christ, asking how the church must live to be truly the church” (I, 43). From a Buddhist perspective on the ethical path, Gotama’s ethic of nonharm involves integrity, transparency, honesty—As I am, so are they, so am I—based on one’s capacity to empathize and to feel the suffering of others as one’s own (Batchelor 2015, 100). This commitment to link moral action with the ontology of a particular religious community, manifesting active beliefs, is where research must focus.

MAPPING MEANINGFUL RESEARCH: ON THE CHARACTER VIRTUES NEEDED FOR JUST TRANSITIONS

The investigation of any city, and especially a major world city, will by nature be a multiyear endeavor, allowing time and space to probe questions about how religious and theological views inform views on sustainability science and just transitions. It involves developing an understanding of the participants active in a region's civic space and their issues, including explorations into epistemologies and specific theological emphases, like those from doctrines of creation and operative cosmologies, respective theological or religious anthropologies, and how "place" also factors into and informs these particular questions. This could be done through the identification of civic leaders, from elected officials to those deeply involved in working for social, environmental, and economic sustainability in the region by interviews, textual analysis of publications, and by examining activities they may be engaged in. It carries the need to trace the interactions among these communities through interviews, developing a network analysis of connections, proximity, and influence in this urban and environmental research. Such basic empirical social-science research would establish a foundational knowledge base from which to explore religious community leaders' views of urban sustainability.

Thick Mapping with Data Science on Theological Beliefs

An essential part of this research could also come from the presence of a data scientist to develop a symbiotic network analysis for providing separate careful analytic data back to the researchers. It will identify the range of actors involved in sustainability efforts in a chosen civic space, starting with religious leaders in prominent congregations and then branching out to civic leaders who self-identify as religious in orientation. This would lead to in-depth interviews with additional leaders, using a snowball sampling to widen analysis with regional specificity, in a process that would provide a relatively neutral base for maintaining accurate information throughout the interdisciplinary study's different discoveries from the disciplines of theology and sustainability science, generating a local symbiosis for understanding how theology learns from science, and how science learns from theology over time and space. The network building would be supplemented by consultations with figures identified in the network, so they can add/modify and/or subtract to the findings, bringing added clarity to a study. Well aware of significant challenges inherent to interdisciplinary investigations among science and theology or philosophy, this approach suggests possibilities that envisions bringing fields of inquiry together instead of keeping them apart amid their own specializations (Millgram 2015).

Fortifying the interdisciplinary playing field, the data scientist could then also collaborate to produce an interactive queryable map detailing various findings. This development of a “thick” mapping of religious and civic leaders’ points of intersection and interaction over time and space will chart the historical evolution of particular religious groups and leaders, and how their beliefs and actions mattered to local institutions, moving across a region over time and into the present, overlapping with sustainability initiatives. We anticipate that fundamental data analysis research, including both network analysis and thick mapping, would also take multiple years, and longer for larger and more complex cities, especially noting differences in class, socioeconomic structures, infrastructure, geography, and even topography.

Among academic disciplines theology has been largely relegated to a marginalized position within the modern university and contemporary academic discourse (Reuben 1996). In turn this has led its analytic discoveries and unique insights to suffer from increased hyperspecialization due to being located largely within religious academic institutions, or else within particular religious communities where theological insights are often watered down for popular consumption, and therefore not representative of the most complexly developed formulations carrying the most authority within the discipline. Similarly, much of contemporary sustainability science has also proceeded in a hyperspecialized mode of inquiry that has also often struggled to translate its best ideas into more accessible modes, not only for general consumption but also for other disciplines to access. It has often been reduced to metrics and measurement, largely derived from an edulcorated application of biophysical science methods that has failed to encompass fundamental shaping structures that have evolved historically, including structural racism, financialization, weak governmental institutions, and a thin view of what profound shifts are needed for sustainability. With a concern, now, to reduce greenhouse gas emissions, the fundamental drivers of fossil fuel energy use have been superseded with a drive to develop solutions for cities: more trees to mitigate against urban heat, for example, and bicycle lanes, neglecting the structural conditions that greatly constrain city initiatives (Schwarz, Fragkias, Boone 2015). Further, little analytic work has been done on the intersection between phenomena like the recent movement for Black lives, energy inequality, and historic segregation and exposure to unhealthy environmental conditions. This is in part because sustainability science is largely ahistorical, intensely presentist, and technocratically oriented. Additionally, sustainability science has generally operated in a walled-off silo failing to take account its own particular sets of value assumptions as well as unique and complementary insights that may be found within the theologies of religious traditions, including how these values tacitly operate among sustainability scientists.

Attention to the Virtues: On Parsimony and Future-mindedness

Such an effort as what is sketched above would bring local religious and scientific communities together in discussions with leading theologians, philosophers, ethicists, and environmental scientists for public dialogue and debate, sharing key insights about the role of theology and philosophy in public civic life and its intersection with the state of urban sustainability science. While seeking to understand how religious views inform views on sustainability and science, civic leaders who are part of particular religious communities should be analyzed for how they understand the relationship between the particular character virtues of “parsimony” and “future-mindedness” that are critical to shifting cities (and their people and cultures) toward reducing their local and global impacts. What is the corresponding religious rationale and engagement with civic leaders’ constituents, if any? Implicit in such shifts, of course, are questions of equity and justice, and both who benefits and who suffers, including but not limited to how this disproportionately impacts people of color and the poor, and further contributes to matters of racial, economic, environmental, and social injustice. These encounters would then also provoke sustainability scientists to consider the same questions—what role does parsimony play in sustainability, and in the just transition? Can future-mindedness simply be reduced to measuring energy inequality, for example, and modeling how much solar is needed to keep up with the affluent side of the widening divide, and therein providing trickle down improvements in energy access for the poor?

Distinct from virtues like frugality or thrift,⁷ which are often laden with dualism and anthropocentrism, an analytic inquiry into the active presence of parsimony would aim to understand this character virtue as an approach to material goods and resources that is evident in various ascetic approaches to the world that cohere with the logic of sufficiency, or what is enough (Princen 2005; Brown 2010). Most religious communities have long traditions of asceticism that continue to this day, showcasing parsimonious practices that may serve as antidotes to overconsumption, suggestive also of possibilities of generosity and care within the context of life in shared space. At the same time, it is important to be mindful of substantial income discrepancies, especially among people of color and immigrant communities; there are those whose lack is necessitated by poverty, and those for whom, on the other hand, greater parsimony is a conscious rejection of excess (Eisenman et al. 2016; Porse et al. 2016; Fournier et al. 2019). A conscious rejection of excess is what Augustine (354–430) called for in his critique of the “insane extravagance” of Roman prosperity that led to a “corruption of morals more deadly than the fury of your enemies.” He offered this critique in the midst of Rome’s sacking (in A.D. 410), attributing their downfall largely to their “desire to wallow securely

in voluptuousness and, free from all restraint, give free rein to [their] profligate conduct” (Augustine 1950, 66–67). As such, our critical analysis of the character virtues operative (or else lacking) in the life of a major world city is nothing new.

Different attitudes toward, and beliefs about, material goods would also need to be explored, including where and how these views may or may not have changed in light of religious convictions and views and their relationship to scientific or religious knowledge. Future-mindedness would be viewed as a means of understanding the purposiveness and solidarity of humanity, not just with individual families but in the unity of all of life in the biosphere and cosmos. In adopting such a future-minded mentality, against individualism, an affirmation is made of both an interdependence upon one another as well as a loyalty to subsequent generations in anticipation of a shared life in post-carbon cities. Consideration should be given to different attitudes of openness to and interest in change (including just transition), preservation, and long-term (multigeneration) versus short-term thinking related to sustainability. Such vocabulary is currently lacking in sustainability science, as the drive has been overwhelmingly toward greater development along modernist lines, that is more environmentally benign.

The Brundtland Commission report defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Implicit is the value of parsimony in the present to enable the future to thrive. But parsimony for whom? How is this reconciled with the drive for economic growth? At UCLA’s Institute of the Environment and Sustainability, we (Pincetl et al.) have been exploring the concept of “sufficiency” in energy and water consumption, for example, and are joined in this inquiry by researchers in Europe and the United States, concerned that a techno-optimistic worldview does not take into account planetary limits and the limits of humans to overcome them (Princen 2005; Parrique et al. 2019; Millward-Hopkins et al. 2020). Techno-optimism assumes that the Earth—while arguably not limitless—will always provide clever inventive humans with the ability to do more and find technological solutions to problems ahead. This view is dismissive of significant developments and in both religious knowledge (Bouma-Prediger 2019; Toly 2019; Wirzba 2022) and scientific knowledge, as well as what science may reveal about the divine and what spiritual and religious features may be relevant for and already operative within scientific inquiry (Berry 2015; Sideris 2017). It is also blind to the actual, real conditions on the planet. In asking how the character virtues of parsimony and future-mindedness both reflect and draw from specific religious traditions, of note is how particular traditions, expressed in concrete and localized ways, inform the development and exercise of these character virtues—in other words, how particular

congregations and religious leaders carry themselves and their views into civic and institutional spaces, and how they might influence sustainability science and a just transition.

Beyond a new understanding of how parsimony and future-mindedness work within religious traditions and civic space, of note is also how these views work to cultivate additional virtues of intellectual humility, empathy, love, phronesis, and others necessary for flourishing together with other humans and other species in the biosphere, including environmental and infrastructural realities. Along with exploring a range of religious views and their appropriation among different communities of faith, analyzing networks of religious traditions throughout the city with their key civic leaders, institutions, groups, and connections, this methodology lends to the development of a theoretical analysis of the city through the discovery of connections between programs, policies, and partnerships, revealing why people cross boundaries while remaining true to their beliefs and those of their communities.⁸

Of importance is also the questions of how and why cities' religious communities do or do not participate in efforts to become more sustainable, and their perspectives on the scientific rationales for doing so, including processes of conversion, or where new ideas take root and change minds, actualizing behavior, as well as how this corresponds to the cultivation and development of theological knowledge and beliefs. This would also lead to the consideration of more radical forms of conversion, leading to utter transformation in outlook, values, and what South African theologian Ernst Conradie draws from with the biblical concept of "*metanoia*," or repentance. Drawing upon this term from the Greek New Testament of the Christian Scriptures, Conradie remarks how it denotes "a change in our ways of thinking and in the habits of our hearts." Locating the concept in Romans 12:2 he notes that this text "actually speaks of a metamorphosis, not merely a change in form" (Conradie 2022). Similarly, sustainability scientists may embed these values in their research through how they ask questions and in their research topic areas about the nature of changing minds, hearts, and behaviors. This may indeed result in possible visions of reconciliation, engaging in questions of epistemologies of knowledge and the degree to which scientists articulate value propositions, and as civic leaders understand their own scientific and religious knowledge, and religious leaders incorporate sustainability science and action in civic space.

The sustainability plans developed by cities and counties have been based on the latest regional data and science, informed by climate science and the urgency of dramatic changes advocated by scientists and others. These plans address how to move forward with programs and policy changes to support a new direction. But what additional lines of inquiry might be directed into various actions that may or may not be compatible with their otherwise held beliefs, and how the various religious

communities are, or are not, aware of the plans, support them, or have been part of their creation or inception? For example, when Pope Francis's encyclical on the environment (*Laudato Si'*) was published in 2015, how did it affect Catholic institutions and other groups already committed to opposing positions on creation and the natural world in the region? How did it influence their thinking and motivation, or participation? A recent report from Creighton University (Danielsen, DiLeo, and Burke 2021) points out with a helpful geographical map that the vast majority of U.S. Catholic bishops have failed to incorporate key insights from the 2015 encyclical.

Likewise, the Dalai Lama has been actively concerned about the health of the planet. How has that affected the range of Buddhist communities in different cities, or regions? How did it influence their thinking and motivation, or participation? Many city and regional leaders have strong connections with and participate regularly in the life of religious communities, but how influential has that faith and community been in their leadership on these issues? For the significant scientific community in a given region, whose work underpins much of the planning, what is their relationship to the religious communities and how does faith affect the ways in which they have conducted their science, or directed their inquiries? This includes whether sustainability science research and work is influenced by the Dalai Lama, or Pope Francis, or other figures and forms of religious knowledge.

These are the kinds of questions that present challenges that need more concrete answers, including what may be learned from various civic responses to COVID-19 where questions of science, generosity, and future-mindedness have been so prominent. There are possible objections about the transparency and discernability of answers to such questions, and their usability for developing innovative analytic methodology appropriate to such investigations. The Los Angeles County Office of Sustainability, as one example, became a source for providing food during the pandemic. But so did many churches and other communities of faith. Such questions then are, in some senses, unsolvable in principle without the help of empirical research data and the sound investigative strategies of social science and theological inquiry. They are also about probing people's hearts and minds regarding spiritual matters, and so essentially are about what it is to be human today—whether a scientist, policymaker/politician, religious leader, or otherwise—all together in a city and region seeking to see the habits of its people changed, together with changes in their individual and collective ways of life. Through earnest and open inquiry, then, it is important to learn how these large efforts are compatible with the operative traditions' beliefs, with advances in science, and with views of sustainability held by religious communities and civic leaders in a local region.

UNLEASHING MEANINGFUL RESEARCH FOR JUST TRANSITIONS:
CULTIVATION, TRANSPARENCY, AND FURTHERANCE

By nature, academic inquiry into theology and sustainability science should be done whenever possible within the university setting, and preferably within the public research university context, which carries a closer loop of responsibility and accountability to the public. Such research necessarily involves students who comprise the next generation since what is happening now and in the historically burdened future will impact them the most (Rasmussen 2022); they should therefore be significantly weighing into these matters, perhaps the most. As Dietrich Bonhoeffer noted: “The younger generation will always have the surest sense whether an action is done merely in terms of principle or from living responsibly, for it is their future that is at stake” (Bonhoeffer 2010, 42). As an academic endeavor carried out within the context of the university mission, such research views the city as more than just a research subject; it sees the city as a lab.⁹

As a research lab situated in civic space, this kind of work opens a porousness of spaces across disciplines, across academic and other institutions, and in between scholars and students. Therefore, scholars from a wide range of additional locations ought to be incorporated in such inquiries. The findings of explorative investigations ought to also be presented in public venues, and in open access spaces supported by the widest possible media outlets. Such research requires input and advisement from experts in sustainability science, theology, and philosophy, anticipating building forms of consensus from systematically understood features of the developing stages of the collaborative research. Results of such research would be manifold, but chiefly among them would include a network of scholars pursuing these ideas further in additional civic spaces in the United States and in other major cities (and their hinterlands) or larger sociopolitical entities like states and provinces. Such research aims for a built-in transparency that governments often lack, and which lends toward the ongoing assessment and evaluation not only from scholarly experts and students, but also members of the public, with civic leaders from different spheres of society including both religious leaders and sustainability science experts and practitioners.

The aforementioned features of our work detail the public-facing and publicly engaged nature of the effort, which will be strengthened with even greater democratization. This might include concrete efforts for holding civic leaders, institutions, and cities accountable for advancing environmental justice and the values that more expansive forms of knowledge from theology and sustainability science might yield for actionable social outcomes in light of increasing environmental challenges and concerns, including how racial, economic, and social justice are inextricably linked

to environmental justice.¹⁰ This then demonstrates an extensive agenda for ongoing and replicable research in civic space, as well as the social consequences of religion, theology, and sustainability science for those who wish to make their cities more just places to be both in light of an uncertain future for coming generations, as well as for our current moment of life together on our shared planet.

ACKNOWLEDGMENT

We would like to thank Nancy Snow, Marilyn Raphael, Chris Ives, and John Perry for their helpful comments on earlier drafts of this article.

NOTES

1. We use the term “Earth systems” in the plural in order to highlight the plurality of various subsystems at work in the broader field of Earth system science, which assumes that these systems (plural) are integrated with the Earth system (singular), and therefore to avoid notions of totalizing the findings of Earth system science.

2. Aware of the contestability of this term and claims that science has not universally accepted it as a description of the current epoch of the Earth’s planetary life (preferring the term “Holocene” to “Anthropocene”), we take the claim as noncontroversial that no part of planet earth has not been impacted by human industry. We also believe this acknowledgement is required for a meaningful reckoning with the historical legacies and costs of colonialism propelled by the doctrine of discovery and also the corresponding development of modern science with its various claims of objectivity. At the same time, we distinguish between preindustrial impacts and those engendered by modern capitalist, imperialist industrialization.

3. See recent projects at The University of St Andrews, “Scientists and Congregations in Scotland,” <https://arts.st-andrews.ac.uk/scientistsincongregationssscotland/> and “The Creation Project” at Trinity International University, with its first grant running from 2015 to 2018 (<https://www.chicagotribune.com/suburbs/deerfield/chi-ugc-article-trinity-awarded-34-million-templeton-grant-2015-06-25-story.html>) and a follow-up project from 2019 to 2022 (<https://henrycenter.tiu.edu/2019/03/henry-center-awarded-4-2-million-templeton-grant/>).

4. For an example of this at the beginning of the COVID-19 pandemic, see Sexton 2021.

5. See “Scientists and Congregations in Scotland,” <https://arts.st-andrews.ac.uk/scientistincongregationssscotland/>; “The Creation Project,” <https://henrycenter.tiu.edu/2019/03/henry-center-awarded-4-2-million-templeton-grant/>; and the earlier project, “Scientists in Congregations,” <https://www.scientistsincongregations.org/>.

6. For current details of UCLA’s Grand Sustainability Challenge, see <https://grandchallenge.ucla.edu/sustainable-la/>.

7. The character virtue “thrift” was initially proposed by a program officer of the John Templeton Foundation, largely to fit with the ideas of the founder of the organization, Sir John Templeton, although without much critical reflection on the concept’s relevance today. And an exception with one development of frugality as a “subversive virtue” for the sake of love, justice, and sustainability can be found in Nash (1995).

8. See this as a significant component of The Creation Project (<https://henrycenter.tiu.edu/projects/the-creation-project/>).

9. While acknowledging the work of colleagues who developed earlier notions of the urban humanities with research also taking place within the city-lab (see the manifesto and explorative essays in *Boom: A Journal of California* 6/3 [Fall 2016]), with notable exceptions we find much of this research to be largely inadequate due to an unwillingness to consider religious and theological phenomena (including communities, architecture, and resources) within civic space.

10. We are grateful to Dr. Thomas A. Parham, President of California State University, Dominguez Hills, for this suggestion, in order to press civic leaders to pursue actual changes in light of the growing perception that much action related to racial, environmental, economic, and social justice after 2020 was merely performative and therefore possibly insincere.

REFERENCES

- Agyeman, Julian. 2013. *Introducing Just Sustainabilities: Policy, Planning and Practice*. London: Zed Books.
- Augustine of Hippo. 1950. "The City of God, Books I–VII." In *The Fathers of the Church*, edited by Hermigild Dressler, translated by Demetrius B. Zema, Gerald G. Walsh. Vol. 8. Washington, DC: The Catholic University of America Press.
- Batchelor, Stephen. 2015. *After Buddhism: Rethinking the Dharma for a Secular Age*. New Haven, CT: Yale University Press.
- Berry, Evan. 2015. *Devoted to Nature: The Religious Roots of American Environmentalism*. Oakland, CA: University of California Press.
- Bonhoeffer, Dietrich. 2010. "Letters and Papers from Prison." In *Dietrich Bonhoeffer Works*, edited by John W. de Gruchy, translated by Isabel Best, Lisa E. Dahill, Reinhard Krauss, and Nancy Lukens. Vol. 8, Minneapolis, MN: Fortress Press.
- Bouma-Prediger, Steven. 2019. *Earthkeeping and Character: Exploring a Christian Ecological Virtue Ethic*. Grand Rapids, MI: Baker Academic.
- Brown, Azby. 2010. *Just Enough: Lessons in Living Green from Traditional Japan*. Tokyo: Kodansha.
- Butler, Judith. 2015. *Senses of the Subject*. New York: Fordham University Press.
- Cha, J. Mijin, Manuel Pastor, Cynthia Moreno, and Matt Phillips 2021. "Just Transition/Transition to Justice: Power, Policy and Possibilities." USC Equity Research Institute, June.
- Colucci-Gray, Laura, et al. 2013. "Science Education for Sustainability, Epistemological Reflections and Educational Practices: From Natural Sciences to Trans-Disciplinarity." *Cultural Studies of Science Education* 8:127–83.
- Conradie, Ernst M. 2022. "What, Exactly, Needs to Be Sustained amidst a Changing Climate?" Unpublished plenary address at the 19th Meeting of the European Society for the Study of Science and Theology, May 6, Alesund, Norway.
- Chitando, Ezra, Ernst M. Conradie, and Susan M. Kilonzo, eds. 2022. *African Perspectives on Religion and Climate Change*. London: Routledge.
- Danielsen, Sabrina, Daniel R. DiLeo, and Emily E Burke. 2021. "U.S. Catholic Bishops' Silence and Denialism on Climate Change." *Environmental Research Letters* 16:114006.
- Eisenman, David P., Holly Wilhalme, Chi-Hong Tseng, Mikhail Chester, Paul English, Stephanie Pincetl, Andrew Fraser, Sitaram Vangala, and Sarvinder K Dhaliwal. 2016. "Heat Death Associations with the Built Environment, Social Vulnerability and their Interactions with Rising Temperature." *Health & Place* 41:89–99.
- Escobar, Arturo. 2018. *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. Durham, NC: Duke University Press.
- Fournier, Eric D., Felicia Federico, Erik Porse, and Stephanie Pincetl. 2019. "Effects of Building Size Growth on Residential Energy Efficiency and Conservation in California." *Applied Energy* 240/C:446–52.
- Fuentes, Agustín. 2019. *Why We Believe: Evolution and the Way of Human Being*. New Haven, CT: Yale University Press.
- Gilmore Ruth, Wilson. 2022. *Abolition Geography: Essays Towards Liberation*. New York: Verso.
- Harding, Sandra. 2015. *Objectivity and Diversity: Another Logic of Scientific Research*. Chicago: University of Chicago Press.
- Heynen, Nik, Dani Aiello, Caroline Keegan, and Nikki Luke. 2018. "The Enduring Struggle for Social Justice and the City." *Annals of the American Association of Geographers* 108:301–16.
- Hodson, Michael, and Simon Marvin. 2017. "Intensifying or Transforming Sustainable Cities? Fragmented Logics of Urban Environmentalism." *Local Environment: The International Journal of Justice and Sustainability* 22:8–22.
- Hulme, Mike. 2014. "Climate Change and Virtue: An Apologetic." *Humanities* 3:299–312.
- . 2017. "Climate Change and the Significance of Religion." *Economic and Political Weekly* 52:14–17.
- Jennings, Willie James. 2018. "The Land Speaks: 'Rethinking both the Private and Possession.'" *Sprunt Lectures, Lecture 1, Union Presbyterian Seminary*, May 8.

- Keller, Catherine. 2018. *Political Theology of the Earth: Our Planetary Emergency and the Struggle for a New Public*. New York: Columbia University Press.
- Kimmerer, Robin. 2013. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. Minneapolis, MN: Milkweed Editions.
- Liboiron, Max. 2021. *Pollution is Colonialism*. Durham, NC: Duke University Press.
- Lyons, Steve, and Jason Jones. 2022. "Towards a Theory of Red Natural History." *Society and Space*, May 11.
- May, Tim, and Beth Perry. 2017. "Knowledge for Just Urban Sustainability." *Local Environment: The International Journal of Justice and Sustainability* 22:23–35.
- McClendon, James Wm., Jr. 2012. *Systematic Theology, Volume 1: Ethics, 2d edition, Revised and Enlarged*. Waco: TXx: Baylor University Press.
- McKittrick, Katherine. 2021. "Dear April: The Aesthetics of Black Miscellanea." 2021 *Antipode AAG Lecture*.
- Millgram, Elijah. 2015. *The Great Endarkment: Philosophy for and Age of Hyperspecialization*. Oxford: Oxford University Press.
- Millward-Hopkins, Joel, Julia K. Steinberger, and Narasimha D. Rao, et al. 2020. "Providing Decent Living with Minimum Energy: A Global Scenario." *Global Environmental Change* 65:102168.
- Montgomery, Alesia. 2020. *Greening the Black Urban Regime: The Culture and Commerce of Sustainability in Detroit*. Detroit: Wayne State University Press.
- Nash, James A. 1995. "Toward the Revival and Reform of the Subversive Virtue: Frugality." *The Annual of the Society of Christian Ethics* 15:137–60.
- Parrique, Timothée, Jonathan Barth, and François Briens, et al. 2019. "Decoupling Debunked: Evidence and Arguments against Green Growth as a Sole Strategy for Sustainability." Brussels: European Environmental Bureau.
- Pincetl, Stephanie. 1999. *Transforming California: A Political History of Land Use and Development*. Baltimore, MD: Johns Hopkins University Press.
- Pincetl, Stephanie, Hannah Gustafson, and Felicia Federico, et al., eds. 2020. *Energy Use in Cities: A Roadmap for Urban Transitions*. London: Palgrave.
- Plantinga, Alvin. 2011. *Where the Conflict Really Lies: Science, Religion, and Naturalism*. Oxford: Oxford University Press.
- Pope Francis. 2015. "Laudato Si': On Care for Our Common Home."
- Porse, Erik, Joshua Derenski, and Hannah Gustafson, et al. 2016. "Structural, Geographic, and Social Factors in Urban Building Energy Use: Analysis of Aggregated Account-Level Consumption Data in a Megacity." *Energy Policy* 96(C):179–92.
- Princen, Thomas. 2005. *The Logic of Sufficiency*. Cambridge, MA: MIT Press.
- Rasmussen, Larry L. 2022. *The Planet You Inherit: Letters to My Grandchildren When Uncertainty's a Sure Thing*. Minneapolis, MN: Broadleaf Books.
- Reuben, Julie A. 1996. *The Making of the Modern University: Intellectual Transformation and the Marginalization of Morality*. Chicago: University of Chicago Press.
- Schwarz, Kirsten, Michael Fragkias, Christopher G. Boone, Weiqi Zhou, Melissa McHale, J Morgan Grove, and Jarlath O'Neil-Dunne, et al. 2015. "Trees Grow on Money: Urban tree Canopy cover and Environmental Justice." *PLoS ONE* 10:e0122051.
- Sexton, Jason S. 2022. "Borders and Barriers: Citizenship in California." In *Los Angeles as a Global Crossroads: Migration, Transnationalism, and Faith*, edited by Kirsteen Kim and, Alexia Salvatierra, 131–50. Lanham, MD: Lexington Books.
- . 2021. "The Critical Study of Religion and Division in the Era of COVID-19." *International Journal of Public Theology* 15:157–76.
- Sideris, Lisa H. 2017. *Consecrating Science: Wonder, Knowledge, and the Natural World*. Oakland, CA: University of California Press.
- Toly, Noah J. 2019. *The Gardeners' Dirty Hands: Environmental Politics and Christian Ethics*. Oxford: Oxford University Press.
- Tuck, Eve.
- Van Wensveen, Louke. 1999. *Dirty Virtues: The Emergence of Ecological Virtue Ethics*. Amherst, NY: Humanity Books.
- Whyte, Kyle Powys. 2021. "Time as Kinship." In *The Cambridge Companion to Environmental Humanities*, edited by Jeffrey Cohen and, Stephanie Foote, 39–55. Cambridge: Cambridge University Press.

- Wirzba, Norman. 2021. *The Sacred Life: Humanity's Place in a Wounded World*. Cambridge: Cambridge University Press.
- . 2022. *Agrarian Spirit: Cultivating Faith, Community, and the Land*. South Bend, IN: University of Notre Dame Press.
- Wynter, Sylvia, and Katherine McKittrick. 2015. "Unparalleled Catastrophe for Our Species? Or, to Give Humanness a Different Future: Conversations," In *Sylvia Wynter: On Being Human as Praxis*, edited by Katherine McKittrick, 9–89. Durham, NC: Duke University Press.
- Yusoff, Kathryn. 2018. *A Billion Black Anthropocenes or None*. Minneapolis, MN: University of Minnesota Press.
- Zhong, Raymond. 2022. "These Climate Scientists Are Fed Up and Ready to Go on Strike." *The New York Times* March 2.