

Can we overcome the anthropocentrism bias in sustainability discourse?

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Abstract

Based on a turn to the rational human subject in Descartes, Kant and Feuerbach, this article critically examines four efforts at shaping sustainability discourse: the definition of sustainability in *our common future*; stewardship in Christian theology; forms of partisan justice; and GDP as measure of economic growth. These efforts made certain advances, but because they share the underlying anthropocentric bias of Western philosophy, they fail to step out of the current sustainability paradigm. The article closes with two suggestions of how to decentre the human subject and build a network-view of all species.

*It is only with great effort that we have managed to make
ourselves unhappy.*
(Rousseau)

1. The turn to the rational subject

The “turn to the rational subject” in modern Western philosophy may be illustrated with reference to three of the most influential thinkers from the 16th to the 18th century, namely René Descartes (1596–1650), Immanuel Kant (1724–1804), and Ludwig Feuerbach (1804–1872).

As is well known, Descartes’ philosophical aim was to establish an irrefutable basis for knowledge.¹ Via a process of methodical doubt he came to the conclusion that the only certainty is, in fact, doubting all existing knowledge. But to doubt means that I, the doubting individual, must exist. He wrote in his *Meditations II*:

So that after having reflected well and carefully examined all things, we must come to the definite conclusion that

this proposition: I am, I exist, is necessarily true each time that I pronounce it, or that I mentally conceive it.

(Descartes, 1952:78)

An extended form of the dictum *cogito ergo sum* is sometimes given as: “I doubt, therefore I think, and hence I am.” Descartes’ further conclusion, after positing that thought is a vital attribute belonging to him, is that he is a real thing and really exists. “But what thing? I have answered: a thing which thinks” (Descartes, 1952:79).²

In his famous essay, “Beantwortung der Frage: Was ist Aufklärung?” originally published in *Berlinische Monatsschrift*,³ Kant describes the un-enlightened or immature person as follows: “Unmündigkeit ist das Unvermögen, sich seines Verstandes ohne Leitung eines anderen zu bedienen.”⁴ According to him, it is very difficult to escape from immaturity and to use our own mind, because the immature state – marked by a reliance for knowledge and truth on the insights of tradition or others in authority – has become a “natural” part of who we are. Enlightenment only develops when one displays the courage to use one’s own mind.

This essay was followed in 1787 by Kant’s revised edition of *Kritik der reinen Vernunft* where he wrote a new, extended preface. In this preface, he compares the critical method of his metaphysics with the Copernican revolution of a heliocentric universe, because the apparent temporal, spatial and causal order of the world is not attributed to the world in itself, but – in an anthropocentric turn – to the structure of the perceiving mind, enabling the possibility of a priori knowledge.⁵

Feuerbach published *Das Wesen des Christentums* in 1841⁶ and argues for the true or anthropological essence of religion. The apparent antithesis between God and humans can be overcome if we understand that “... in religion man contemplates **his own latent nature**. Hence it must be shown that this antithesis, this differencing of God and man, with which religion begins, is a differencing of man **with his own nature**” (Feuerbach, 1957:33; my emphases). God as God is only an object of thought. He is consequently “nothing but the objective nature of the thinking power ... whereby man is conscious of reason, of mind, of intelligence”. God as God – as a purely thinkable being ... – is thus nothing else than the reason in its utmost intensification become objective to itself” (1957:36).

Feuerbach, in discussing the essential nature of man, works with the proposition that “the object of any subject is nothing else that the subject’s own nature taken objectively” (1957:12). He deifies human reason and inverts the traditional theological idea that God creates humans; instead it is humans that create God. “The divine being is nothing else than the human being, or rather, the human nature purified, made objective ... All the attributes of the divine nature are, therefore, attributes of the human nature” (Feuerbach, 1957:14). Consciousness of God is nothing other than self-consciousness and knowledge of God is in fact self-knowledge.

Whereas Descartes established the thinking human subject as key to our epistemological endeavours, Kant argued for the constructive nature of all knowledge via categories of the human mind, and Feuerbach turns theology into anthropology, thereby ascribing

traditionally transcendent and infinite qualities to the immanent human person. The cumulative force of these ideas led to the rational, autonomous and material human subject being at the centre of Western philosophy's conception of anthropology and epistemology.

It is impossible to understand and appreciate the enormous social advances contained in the critical-constructive nature of modern science; an economy built on private enterprise; and political systems with individual human rights, without some recourse to the human person as a "thinking thing". It is equally impossible to understand the misuse of technology, private greed and growing economic inequalities, and the curtailment of democratic freedoms, without recourse to the same human subject. Human history is, by its very nature, ambiguous.

The key point for this article is that the free, critical, autonomous and rational subject constitutes a fundamental anthropocentric paradigm from which the world is constructed. Insofar as this paradigm fosters the misuse of human power, it turns into anthropocentrism where the self-designed needs of humanity blind us to our relative position in the natural order. The "thinking thing" has acquired the power to un-create the natural order and – via the aptly named era of the Anthropocene⁷ – alter the very geological history of the earth.

I will argue below that, unless this latter paradigm changes, we will not be able to fundamentally address behavioural adjustments and sustainability questions in the context of our current ecological crises. As illustration, four examples are briefly outlined below to demonstrate how difficult it is to relativise the human subject in relation to other species, and how persistently the anthropocentrism bias operates even in worthy attempts to explicate and advance "sustainability" thinking. In each of these examples massive primary and secondary literature have been published. Each could form a dissertation on its own. I deliberately adopt an exploratory attitude, focusing on the overall flow of the argument and hence do not engage in more detailed analyses.

2. Four examples of the anthropocentrism bias

2.1 First example: Sustainability

The first example stems from the classic definition of sustainable development itself as put forward in *Our common future* (1987) drafted by the UN World Commission on Environment and Development. "Humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987:8). In the context of the mid-1980s, this definition did make huge strides in at least two ways:

- It firstly understood that the unfettered pursuit of human needs is not possible on a finite planet. Sustainable development "does imply limits" and these are related to "the ability of the biosphere to absorb the effects of human activities" (1987:8). The

more affluent amongst us, who also use more natural resources, shall therefore have to adopt lifestyles “within the planet’s ecological means” and population growth must be in harmony with “the changing productive potential of the ecosystem” (1987:9).

- It secondly gave inter-generational ethics a sharper focus with the insight that the effects of our ecological actions today will impact negatively on those who live after us. “We borrow environmental capital from future generations with no intention or prospect of repaying ... We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions” (1987:8).⁸

But the fundamental weakness of this definition is that “meeting the needs of humanity”, now and in the future, leaves the anthropocentrism bias unchallenged. The idea is still “to guard and maintain **human** progress, to meet **human** needs, and to realize **human** ambitions” (1987:8, my emphases), but only to do so in a sustainable way. At that time it was indeed a great step forward, but we now have the benefit of hindsight about the actual effect of this type of thinking. There were limited successes in a raised consciousness for environmental conservation and, once climate change became a more accepted fact, there were marked improvements in production of eco-efficient products, and global efforts to reach agreements on limiting carbon emissions, the latest being the 2016 Paris Agreement under the UN Framework Convention on Climate Change (from which the USA has just withdrawn).

But we know that despite the rise of sustainability talk and limited action in business and politics, we have not yet been able to significantly alter human behaviour vis à vis the environment. Conservation makes us feel good, but it does nothing to limit damage on non-conserved areas and may in fact be a contradictory cover for the ill-use of natural resources outside the conservation ambit. Eco-efficiencies are important advances, but they have a very limited effect if the quantity of consumer goods is not itself reduced and their very material production processes are not radically altered (see Stuchtey *et al.*, 2016:18-20).

The underlying reason why “sustainable development” has in fact – contrary to intentions – accelerated global environmental deterioration is that human needs-satisfaction determines the paradigm of the inter-relation between us and the rest of the natural environment.

2.2 Second example: Christian theology

In his well-known essay, “The historical roots of our ecological crisis”, Lynn White Jnr argued that – from an historical perspective – the Christian interpretation of the relation between humans and nature played a decisive role in shaping the attitude of people toward nature, even in a so-called “post-Christian” era. White refers to the Hebrew creation narratives where man is given dominion over physical creation and the latter is there for the benefit of man and to serve man’s purposes whilst man himself is not simply part of nature, but made in the image of God.⁹ He concludes: “Especially in its Western

form, Christianity is the most anthropocentric religion the world has seen” (White, 1967:1205). The fusion of science with technology in the context of the Christian dogma of man’s transcendence of, and mastery over, nature, explains the axioms underlying our ecological crisis (White, 1967:1206).

His essay sparked various responses and contributed to the rise of what became known as eco-theology.¹⁰ This theology, in varied ways, attempts to undermine the hermeneutics of dominion and reinterprets the biblical traditions from the perspective of humans as stewards, caretakers, custodians or priests of creation.

For my purpose here, I focus only on the stewardship metaphor as developed by Douglas John Hall in his book *The steward. A biblical symbol come of age* (1990).¹¹ His analysis of the Hebrew Scriptures and New Testament brings him to regard the relation between master and steward from two perspectives:

On the one hand, the steward is the representative or vicar of the one who has employed him/her. The steward is the “one who has been given the responsibility for the management and service of something belonging to another” and consequently the office of the steward “...presupposes a particular kind of trust on the part of the owner or master” (Hall, 1990:32). On the other hand, the steward is at the same time only a slave, strictly accountable to the owner and master who may retract the relative authority given to the steward at any point in time (see Hall, 1990:32-41).

Hall concludes that the steward metaphor assumes two mutually informative tasks: responsibility and accountability. “The owner is not the master and owner (possessor) and therefore is accountable. The steward is given a vocation to fulfil and the wherewithal to fulfil it, and therefore is responsible” (Hall, 1990:235).

The stewardship metaphor is indeed a huge improvement on dominion language: God is the owner of the earth and humans are commissioners who should act on behalf of God to oversee and care for the non-human part of creation as well. Stewardship requires humans to discharge their vocation and act in a responsible manner whilst constantly realising that we are ultimately accountable to God in caring for the earth.

From a sustainability perspective, this metaphor with its noble intentions and real advances, suffers from a number of weaknesses. For this article, the most fundamental point is that stewardship is an expression of the anthropocentric bias as it still presupposes human superiority over all other creatures. It is very difficult to be a “steward” and not understand yourself as not only qualitatively different, but also as holding power over that which you are commissioned to rule.

Despite the geological fact that nature existed for millions of years without the human species (and therefore without humans as knowing and managing subjects), stewardship still maintains the natural environment as an object for our use and safekeeping albeit under stricter ethical precepts. The managerial language reveals an androcentric power bias, and we know from bitter experience that humans have been more prone to be exploitative, self-serving managers than caring, commissioned stewards. The managerial

steward, Hall acknowledges too, may be a sanctified version of the technocrat (Hall, 1990:234). As scientists struggle to inter-connect all the variables that, for example, affect climate change with its unpredictable consequences, the idea of the steward as manager – even good manager – represents an over-estimation of human “managerial” capacity and an under-estimation of human inability to understand and steer complex eco-systemic factors.

From a Christian perspective, perhaps Luther’s first and third theses (quoted out of context!) are apt responses to our devastation of the natural environment in the pursuit of personal and collective gain: “Our Lord and Master, Jesus Christ, when he said ‘Poenitentiam agite’,¹² willed that the whole life of believers should be repentance.” But this does not mean inward repentance only; no, “... there is no inward repentance which does not outwardly work divers mortifications of the flesh.”¹³

2.3 Third example: Ethics expressed as preferential justice

The third example of our anthropological bias comes from ethics. My reference here is to the laudable tradition of preferential, partisan or prioritarian justice¹⁴ that seeks to address the difficult question of a fair distribution of goods, opportunities and services in society.

In response to the developmentalist agenda for Latin America in the 1960s, it was particularly Latin American liberation theologians like Gustavo Gutierrez (1973) who put forward the “preferential option for the poor”. The motivation for this preference stems from the conviction that the biblical traditions reveal God as a God of and for the poor with the consequence that the poor has a preferential hermeneutical position in reading Scriptures and understanding who God is. This poverty may be social, economic, political and spiritual, but the ethical implication is that justice will only be realised if the poor and marginalised receives preference in allocation of resources or opportunities in any “development” trajectory. Gutierrez explains that the “very term **preference** obviously precludes any exclusivity; it simply points to who ought to be the first – not the only – objects of our solidarity” (1993:239; original emphasis).

In his influential notion of justice as fairness, John Rawls (1971) develops a theory of justice where the least advantaged representative persons serve as criterion for the moral assessment of distributive justice. His principle of social justice states that “... social and economic inequalities are to be arranged so that they are ... to the greatest benefit of the least advantaged” (1971:302), known as the Difference Principle which stipulates that in our distributive efforts we should maximise the minimum level of welfare.

In the extension of this theory to a global situation, Rawls (1999) proposes eight principles that should guide. Whereas the first seven principles all presume equality and non-partisanship, the addition of the last principle¹⁵ is significant: “Peoples have a duty to assist other peoples living under unfavourable conditions that prevent their having a just or decent political and social regime” (1999:37). This is, according to my interpretation, the only law that moves Rawls’s egalitarianism toward its special version of prioritarianism,

namely “a duty” toward those “living under unfavourable conditions”. Rawls refers to these as “burdened societies”¹⁶ because they “lack the political and cultural traditions, the human capital and know-how, and often, the material and technological resources needed to be well-ordered” (1999:106).

From an economic perspective, Joseph Stiglitz (2002) understands that the global financial order produces discontent with winners who benefit and losers who suffer from increasing global trade. To make globalisation work (Stiglitz, 2006) and lessen power-asymmetries, he suggests special and differential treatment for poor nations who should have open access to the markets of middle-income and rich nations whilst being allowed some protectionist measures for the development of their own economies. In what he calls “fair trade for the poor” Stiglitz suggests a reform of international trade. This reform would entail that the principle of “reciprocity for and among all countries – regardless of circumstances” be replaced by the principle of “**reciprocity among equals, but differentiation between those in markedly different circumstances**” (Stiglitz, 2006:83, my emphasis).

Although controversial, the notion of preferential justice is an important correction to theories of justice that do not adequately account for socio-economic inequalities either at the starting point of providing equal opportunities or as the result of uneven capabilities to participate in a competitive market economy.

Looking back, it is interesting to note that Gutierrez and Rawls wrote their influential books in the early 1970s at about the same time that the first awareness grew about our ecological crisis.¹⁷ They responded to the question of how to create a more just human society – an important question to this day. But these theories of preferential justice only included humans or nations in their understanding of marginalisation and vulnerability and, due to this anthropocentric focus, missed the reality that the weakest and poorest and most voiceless of all are non-human species and the natural environment in general. The “preferential option” should indeed be extended beyond the focus on human needs to include a wider scope of species.

2.4 Fourth example: GDP growth

The fourth example comes from the tenacity with which Gross Domestic Product is held as norm for growth and wealth-creation. The statistical framework for GDP was developed after the Second World War to express in a single figure a reliable measure of production growth in the post-war economic recovery. GDP received significant status when in 1953 the UN institutionalised it in the System for National Accounts in order to establish comparability among nations. It is fair to say that – to this day – GDP is the most closely followed and eagerly awaited economic indicator, and has reached a status where in the minds of most people “growth” (increase in the GDP figure) equals “progress” or “wealth creation”.

Many critics have pointed to the fact that GDP cannot measure welfare, happiness or inclusive economic growth.¹⁸ But the most glaring gap in GDP is that it may increase

and create the impression of wealth creation whereas – if natural resource use and depletion are taken into account – “real” growth might be much lower or even negative. As Martin Stuchtey *et al.* suggest: “A lot of GDP growth we are measuring might in fact be borrowing from the future rather than real progress.” The provocative question is: Are we in fact growing poor? (2016:15).

That we are indeed getting poorer seems to be the case if one takes the calculations of the Global Footprint Network into account: They calculate on an annual basis the biological surface required to sustainably produce all the natural resources used in that year. In 1970 we stepped over the red line for the first time and by 2015 we used a full 1.6 planets. In economic terms – but not reflected in GDP – the overuse, contamination and depletion of the natural environment is reducing the productivity of our natural resource system. It will thus become increasingly difficult to transform natural capital into other forms of capital if the former is reduced or is simply not available (Stuchtey *et al.*, 2016:12-13).

With its bias for human production of consumer goods, elegantly expressed in one figure, the anthropocentric paradigm makes it very difficult to endorse alternatives to GDP. In their influential report, Stiglitz, Sen and Fitoussi demonstrate that exclusive use of GDP has the practical effect that policy makers are not only mis-measuring our lives, but that they engage in a dangerous calculation that on the surface seems to add up, but simply does not¹⁹ exactly because it excludes the externalities of the natural environment.

3. How could we approach human subjectivity?

Let us start with an obvious point: It is impossible to jump over the shadow of the “thinking thing”. It is **we** who interpret the world and it is **we** who act upon the world. However, two movements are possible to counter anthropocentrism in its ideological guise:

The first movement is the decentring – in our minds and consequently in our actions – of the human subject as superior apex- and reference point of the natural order. We stand in and with the natural order,²⁰ as intrinsically part of, and not above, this order. Such decentring of a specific subject already occurs in other contexts that require an adjustment to self-understanding for ethical purposes: As a white, male person living in the historical context of apartheid, my default subjectivity represents the power-injustice accompanied by gender, class and race constructs. It takes deliberate mental re-orientation to not exert this “centring” power and to not “usurp” default authority when entering social settings. Living according to the value of inclusivity requires the deliberate and conscious decentring of the I toward a “re-centered” subjectivity marked by humility, equality, reciprocity and respect.

On a global scale, a new Copernican revolution is required: Instead of seeing the human person as the sun around which all other species and objects in the natural world revolve, we should adopt a bio-centric²¹ approach where all species share in one life- and ecosystem, and the enhancement of life²² (or not) becomes the ethical norm for economic

actions and scientific development.²³ This revolution moves us beyond a pragmatic motivation for a kind of enlightened anthropocentrism to a principled choice for biocentric thinking and action. Intimations of what this means have been put forward in concepts like “accretive” economics built on “net-positive” outcomes, including the measurement of natural resource use in economic progress reports (Stuchtey *et al.*, 2016:24-28).

The second movement – as convincingly argued by eco-feminism²⁴ – is acknowledging and realising the subjectivity of other species and natural phenomena, and then constructing our earthly existence as an intricate web of interdependent reciprocity and mutuality. What is required, says Sallie McFague, is an holistic, instead of an atomistic paradigm. In the former, “the absolute divisions between human beings and other beings and even between organic and inorganic are softened, as are many of the hierarchical dualisms that have accompanied those divisions: spirit/flesh, subject/object, male/female, mind/body (McFague, 1987:4). The subject-object structure of the modern epistemological turn must be transcended to conceptualise that what humans consider as objects in fact represent other subjects.

We now see interesting legal developments that relativise and complement the anthropocentrically formulated universal declaration of human rights²⁵ by according rights to so-called inanimate objects. The Whanganui River, after a long battle by the Maori people, recently became the first river in the world to be accorded the same rights as a human person, implying that it will be represented as a separate legal entity in court proceedings.²⁶ The tightening of legislation that requires extensive independent environmental impact assessments before developments are approved, also increasingly reinforces the legal recognition of non-human natural resources.

4. Conclusion

A simple definition of behavioural ethics is that it seeks to determine the reason why people make the ethical decisions that they do. “What we do about ecology,” says Lynn White, “depends on our ideas of the man-nature relationship” (1967:1206). Based on the assumption that “renewal of the mind” is a prerequisite for behavioural change,²⁷ it seems that our most urgent task in facing the ecological crisis is to address the underlying thought patterns, implicit values, and resultant language²⁸ that determine the self-understanding of the human species and his/her place in the natural and cosmic order.

References

- Conradie, Ernst (2006). *Christianity and ecological theology. Resources for further research*. Stellenbosch: Sun Press. <https://doi.org/10.18820/9781920109240>
- Descartes, R. (1952). Meditations on first philosophy. (Transl. E.S. Haldane and G.R.T. Ross). In: *Great books of the Western world*, vol. 31. London: Encyclopaedia Britannica. 69-103.
- Feuerbach, Ludwig (1957). *The essence of Christianity*. (Translated from the original German by George Eliot). New York: Harper & Brothers.

- Garland, Grace (2016). Economic growth and progress: A paradigmatic conflation. Unpublished MBA treatise. Stellenbosch: Stellenbosch University.
- Gutierrez, Gustavo (1973). *A theology of liberation*. London: SCM.
- Gutierrez, Gustavo (1993). Option for the poor. In: Ellacuria, Ignacio & Sobrino Jon (eds.) *Mysterium Liberationis. Fundamental concepts of liberation theology*. New York: Orbis. 235-250.
- Hall, D.J. (1990). *The steward. A biblical model come of age*. Eugene, Oregon: Wipf & Stock.
- Kant, Immanuel (1999). *Ausgewahlte kleine Schriften*. Hamburg: Felix Meier.
- Kant, Immanuel (1998). *Critique of pure reason*. (The Cambridge edition of the works of Immanuel Kant. Translated and edited by Paul Guyer and Allen W. Wood). Cambridge: CUP. <https://doi.org/10.1017/CBO9780511804649>
- McFague, Sallie (1987). *Models of God. Theology for an ecological, nuclear age*. Minneapolis: Fortress Press.
- Naudé, Piet (2007). In defence of partisan justice? An ethical reflection on “the preferential option for the poor”. *Verbum et Ecclesia*, 28(1):166-190. <https://doi.org/10.4102/ve.v28i1.102>
- Rawls, John (1971). *A theory of justice*. Oxford: Oxford University Press.
- Rawls, John (1999). *The law of peoples*. Cambridge, M.A.: Harvard University Press.
- Stiglitz, Joseph E. (2002). *Globalization and its discontents*. New York: WW Norton.
- Stiglitz, Joseph E. (2006). *Making globalization work*. New York: WW Norton.
- Stiglitz, J., Sen, A. & Fitoussi, J. (2009). *Mismeasuring our lives: Why GDP doesn't add up*. Paris: The New Press.
- Stuchtey, Martin R., Enkvist, Per-Anders & Zumwinkel, Klaus (2016). *A good disruption. Redefining growth in the twenty-first century*. London: Bloomsbury.
- Swanson, Lori J. (2015). A feminist ethic that binds us to mother earth. *Ethics and Environment*, 20(2):83-103. <https://doi.org/10.2979/ethicsenviro.20.2.83>
- United Nations World Commission on Environment and Development (1987). *Our Common Future*. Oxford: Oxford University Press.
- Warren, Karen J. & Cheney, Jim (1991). Ecological feminism and ecosystem ecology. *Hypatia*, 6(1):179-197. <https://doi.org/10.1111/j.1527-2001.1991.tb00216.x>
- White, Lynn Jnr. (1967). The historical roots of our ecological crisis. *Science*, 155(3767). 10 March. <https://doi.org/10.1126/science.155.3767.1203>
- Wootton, D. (2015). *The invention of science: A new history of the scientific revolution*. London: Penguin Random House. www.anthropocene.info [Accessed 9 May 2017].

Endnotes

- 1 Read the recent impressive history of scientific thought and the prominence of Descartes in the scientific revolution in Wootton (2015:361-367; 433ff.).
- 2 See also *Meditations III*: “I am a thing that thinks, that is to say, that doubts, affirms, denies, that knows a few things” (Descartes, 1952:82).
- 3 Published December 1784, 481-494. See Kant 1999:20 for the version used in this article.
- 4 My gender-neutral translation: “Immaturity is the inability to use one’s understanding or mind without guidance from another.”
- 5 In B xvi Kant writes: “Up to now it has been assumed that all our cognition must conform to the objects; but all attempts to find out something about them a priori through concepts that would extend our cognition have, on this presupposition, come to nothing. Hence, let us once try whether we do not get farther with the problems of metaphysics by assuming that the objects must conform to our cognition, which would agree better with the requested possibility of an a priori cognition of them, which is to establish something about objects before they are given to us. This would be just like the first thoughts of Copernicus, who, when he did not make good progress in the explanation of the celestial motions if he assumed that the entire celestial host revolves around the observer, tried to see if he might not have greater success if he made the observer revolve and left the stars at rest” (Kant, 1998:110).
- 6 See References for the 1957 English publication used in this article.
- 7 Read more by accessing www.anthropocene.info (accessed 9 May 2017). This term describes the earth’s most recent geological time “as being human influenced or anthropogenic, based on overwhelming global evidence that atmospheric, geological, hydrological, bio-spheric and other earth system processes are now altered by humans”.
- 8 The Commission proposed a principle of “inter-generational equity” which reads as follows: “States shall conserve and use the environment and natural resources for the benefit of present and future generations” (1987:348).
- 9 I retain the gender-exclusive language of the original essay.
- 10 Consult Conradie 2006 for an overview and literature on ecological theologies.
- 11 This is a revised edition of a book with the same title published originally in 1982.
- 12 A reference to the injunction μετανοίει in Matthew 4:17.
- 13 Luther’s theses retrieved from wikisource on 28 April 2017. See https://en.wikisource.org/wiki/Works_of_Martin_Luther,with_introductions_and_notes_Volume_1/Disputation_on_Indulgences#Ninety-five_Theses
- 14 For a fuller discussion with literature, read Naudé 2007.
- 15 Rawls himself remarks: “This principle is especially controversial” (1999:37, note 43).
- 16 A well-ordered and even rich society may become a burdened society through a natural disaster. Irrespective of the cause, Rawls argues that a rational view of reciprocity would agree to the principle that peoples have a duty to assist burdened societies.
- 17 Stiglitz obviously had the benefit of writing about globalisation at a time when serious concerns about environmental sustainability were already in the public domain. See Chapters 2 and 6 in Stiglitz 2006.
- 18 For a concise overview of criticism against GDP, see Garland 2016. Alternative indicators like the Genuine Progress Indicator (GPI), the Inclusive Wealth Index (IWI) and Happy Planet

Index (HPI) have been developed to include a more accurate account of natural resource use, but these have not yet been able to gain significant traction and influence in policy directions.

- 19 Hence the title of their study: *Mismeasuring our lives: Why GDP doesn't add up* (2009).
- 20 I retain the “in” and the “with” because in some accounts of the former the distinctiveness and demonstrated power of humans may be denied, whilst the “with” retains this distinctiveness, but could easily slip into dominion again. See Hall for a discussion of three models: humanity above, humanity in, and humanity with nature (1990:199–214).
- 21 I do not venture into a theological interpretation of this approach. It could be derived from God as creator of life, Christ as mediator of life, and the Spirit as indwelling life.
- 22 See the interesting multi-disciplinary research project called “Enhancing Life” at enhancinglife.uchicago.edu where the ethical significance of life-enhancement is explored in fields as wide-ranging as medicine, theology and architecture.
- 23 White pins his hope for a renewed form of Christianity on the ideas of Francis of Assisi who “tried to depose man from his monarchy over creation and set up a democracy of all God’s creatures” (1967:1206).
- 24 Eco-feminist ethics in general “critiques not only androcentric but also anthropocentric and naturist bias in ethics”. See Warren and Cheney 1991:180ff., and for an overt focus on tying feminist ethics to the planet, read Swanson 2015.
- 25 “All human beings have the fundamental right to an environment adequate for their health and well-being” is the first principle proposed by the World Commission on Environment and Development (1987:348).
- 26 See the news item on bbc.com/news/world-asia-39282918 (accessed 28 April 2017).
- 27 See St Paul’s call in Romans 12:2: “Do not conform any longer to the pattern of this world, but be transformed by the renewing of your mind....” (NIV). The idea underlying virtue ethics is that it is not primarily rules (deontology) or outcomes (utility), but character that shapes ethical behaviour.
- 28 “Language that supports hierarchical, dualistic, external, unchanging atomistic, anthropocentric and deterministic ways of understanding these relationships (between ourselves and the world) is not appropriate **for our time**, whatever their appropriateness might have been for other times” (McFague, 1987:13, original emphasis).