Aspects of Sustainability

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Abstract

This paper discusses how Dooyeweerd's idea and suite of of aspects can provide a fresh understanding of sustainability, which covers a wide range of issues and offers a basis for understanding the complex interconnections among them.

Introduction

Why, I wondered, were there so many factions in the Green Movement, each battling or at least denigrating the others? There were deep-greens who treat humankind as just yet another species, green economists, who were looking for an economic system based on environmental and social justice not GDP, green communitarians, who are against large corporations and large government, spiritual greens, and so on. Each seemed to believe that their own topic was the key one that would bring about sustainability.

In the early 1990s, I met Richard Russell, who introduced me to Dooyeweerd's aspects and immediately I saw that each of those factions was simply emphasising a different aspect. And, if we define sustainability as functioning well in every aspect, then all those factions are merely part of an overall picture. The deep greens emphasise the biotic aspect, the green economists, the economic aspect, the green communitarians, the social aspect, and the spiritual greens, the pistic aspect. I could accord each one its importance, alongside all the others.

What is more, we can understand how they should relate to each other, each serving the others rather than denigrating each other. And what is even more, I could see there are some aspects that were not being much discussed and I could see how even these were important to sustainability. One of these is the ethical aspect, of self-giving love, another is the formative aspect of technology and human achievement, and there are the lingual and aesthetic aspects too. So it was little surprise when, in the years that followed, the Green Movement began to 'discover' their importance. Dooyeweerd's aspects had already predicted this.

A few years later, I remember walking around a university campus with a PhD student, Patrizia Lombardi, and discussing with her the various aspects of sustainability that we could see - physical, biotic, formative, lingual, juridical, and so on. She immediately saw the potential of Dooyeweerd's aspects as I had done, based her whole PhD on Dooyeweerd's aspects and she and her supervisor, Professor Peter Brandon, published a book [Brandon & Lombardi 2005] on using Dooyeweerd's aspects to assess and manage urban sustainability.

The hypothesis that sustainability can be defined as the well-functioning in all aspects together seemed to hold.

It is now time to formalise and properly investigate that hypothesis, or at least to properly describe it so that it can be investigated by others. That is the purpose of this article, long overdue. Dooyeweerd not only discussed the irreducibility of the kernel meanings of aspects, but that they are normative, defining what is good and evil, and that they cohere with each other at a deep level. We will discuss each of these and how they help us understand sustainability. We end with a brief discussion of how this might help both research and practice in sustainability.

Understanding Sustainability

"Sustainability" is defined by Webster [1971] as "capable of being sustained" but since then its main meaning has shifted to refer to ecological sustainability. Usually this has been seen, especially by politicians and opinion-formers as the sustainability of humanity's life support systems, but some take a moral stance about our responsibility to animals and plants as such [e.g. Gunton et al. 2017]. (There is also "sustainable growth", which ambiguously mixes the ability to continue economic growht indefinitely with the responsibility for growth to not harm ecological sustainability. We do not consider this kind of sustainability here.)

However, ecological sustainability on its own proved to be too narrow a concern and over-zealous application of it sometimes exacerbated social ills. It is now widely recognised that the two concerns go hand in hand, along with yet other concerns. Raworth [2018] identifies 12 broadly social concerns and 9 ecological concerns to be taken into account together. Ecological, social, psychological, economic, spiritual and other sustainabilities all interact, such that if one kind is missing then other kinds are undermined or even made impossible. When one kind is emphasised over others, given overweening importance, then others are ignored and tend to become undermined, and this can jeopardise even the over-emphasised kind in the longer term. However, when one kind has been overlooked and sacrificed and prevented for some decades and then society wakes up to this, such as occurred with ecological sustainability before the 1960s and then the sudden awakening of environmental consciousness, then it is not surprising if the damaged kind of sustainability is over-emphasised for a time.

Sustainability thus seems to be a highly complex idea, with many completely different kinds, each meaningful in its own way. If we are to understand sustainability as a whole, **we need a basis for understanding multiple kinds and what each entails**.

Sustainability also seems to be somehow synonymous with Good. It seems, by definition, to be something to aim for, to aspire to, by which it is right to judge activity and choices, and by which it is appropriate to guide individual, group and societal choices and plans. Sustainability is constituted inherently in normativity, that is, in Good versus Evil. Unsustainability is an Evil. However, there seem to be multiple kinds of Good and Evil, multiple kinds: ranging from climate change, ecological damage, biodiversity loss, human misery, war, injustice, through to spiritual malaises like meaninglessness. Sustainability is thus some kind of what we might call Overall Good, all kinds of Good together, working together. **We need, therefore, a basis for accepting and understanding multiple normativities and this coherent Overall Good.**

This can also inform our understanding of **responsibility** of individuals, households, groups, companies and organisations, nations and humanity as a whole.

The whole idea of sustainability is very complex, and in need of understanding. Diverse facets or aspects have been put forward as important, such as: ecological (if life-support systems break down then will not society and economy break down too?), economic (do we not need a thriving economy in order to pay for environmental cleanup and protection of nature?), spiritual (unless we change our inner selves we will not change anything else), legal-policy (we need proper laws and policies in place), technological (we cannot achieve sustainability without new technology, such as carbon-capture and storage, and electric vehicles), and so on.

If all of these speak some truth, as seems reasonable, it suggests that all kinds are needed (and others not mentioned there), and that there are complex interactions among the various kinds. **We need to understand the contribution and importance of each, and in what ways each is necessary to all the others.**

"Sustain" is also inherently about time and process, about ongoing functioning and its outcomes. So understanding sustainability requires an awareness of functioning (process) and repercussions thereof. However, since there are multiple kinds of sustainability, multiple norms and all kinds affect each other, **we need a basis for understanding multiple kinds of functioning (process) and repercussions that result**.

"The enormity of the ecological crisis in the twentieth century," wrote McNeill a quarter of a century ago [2000, 362], "strongly suggests that history and ecology, at least in modern times, must take one another properly into account. Modern history written as if the life support systems of the planet were stable, present only in the background of human affairs, is not only incomplete but misleading. Ecology that neglects the social forces and dynamics of historical change is equally limited. Both history and ecology are, as fields of knoweldge go, supremely integrative. They merely need to integrate with one another." He mentions three aspects that are important (ecology, history and social forces) and calls on them to integrate with each other. Other thinkers include yet other aspects that McNeill overlooked.

How are we to meet all these needs? This is a philosophical question. Sellars [1963, 1] once remarked that philosophy is about "how all things, in the broadest possible sense of the term hang together in the broadest possible sense of the term." This kind of philosophy offers a basis for understanding how all the various kinds, normativities, and functionings "hang together" (there are others that do not help us). One of the best philosophies of this kind is that by Dooyeweerd [Clouser 2005].

Dooyeweerd explored the diversity and coherence of what we experience as a whole, and emerged with a suite of fifteen aspects, which are "modalities of meaning", "modes of functioning" and "spheres of law" and which are irreducibly distinct and yet inherently linked together by inter-aspect dependency and analogy. This paper briefly outlines how Dooyeweerd's ideas can meet the needs above, and might open up a fresh understanding of sustainability.

Dooyeweerd's suite of fifteen aspects purports to account for how all in reality exists and functions, whether humans, societies, animals, plants or physico-chemical things like planets, rocks and climate, or even pre-physical mathematical things. We will not attempt to define or defend each aspect, but rather just use them as a conceptual tool with which to understand sustainability.

Diverse Aspects of Sustainability

The relevance of each of Dooyeweerd's aspects to sustainability may be seen in Table 1, which offers examples of issues that affect or define kinds of sustainability, and pieces of environmental action. They are merely examples, and in Table 1 derive from 2002, when environmental awareness was much less complete than it is today.

Aspect	The ecological crisis is ...	What we might do
Quantitative (amount)	.. a population crisis (also of ecological footprint)	Better measuring
Spatial (extension)	.. everywhere	Better landuse planning
Kinematic (movement)	.. species cannot move to replenish	Reinstate wildlife corridors
Physical (energy, causality)	.. a climate crisis	Curb climate change emissions
Biotic (life, organism)	.. a biodiversity crisis .. a pollution crisis	Restore biodiversity; curb pollution Better foods
Psychical (feeling)	.. a crisis of anxiety [Panu 2020]	Emotional openness
Analytic (distinction)	.. a crisis of reason [Plumwood 2001]	Think clearly; Open to reason in all aspects
Formative (power)	.. overweening technology, and human dominance [White 1967]	Environmentally responsible technology
Lingual (signification)	.. a crisis of information and wrong messages [Trampe 2006]	Ensure truth prevails and good messages
Social (Relating, agreeing)	.. a social crisis [Hackmann et al. 2014]	Ecnourage community; Change social structures
Economic (frugality)	.. a crisis of economic growth and planetary limits [Raworth 2018]	Value frugality and care
Aesthetic (harmony)	.. absence of joined-up thinking [Moore 2017]	Joined-up thinking; See frugality as fun
Juridical (Due)	.. a political and legal crisis [Matthews 1991]	Change policies, laws; and systems of governance
Ethical (Self-giving love)	.. a crisis of ethics [Tonnessen 2003]	Attitude change to selflessness, generosity, sacrifice
Pistic/Faith (Belief)	.. a crisis of faith and meaningfulness [Melle 2010]	Lifestyle change (what we expect, value, worship, assume

Table 1. Aspects of the ecological crisis

These are examples of how the ecological crisis may be viewed, examples of authors who have referred to each. Column 3 contains examples of action that might be taken. They are only illustrative, and should be added to for a fuller view. Some issues are meaningful in more than one aspect; for example ecological footprint is both a quantitative and economic issue, because it adds up total impact and it becomes problematic because it exceeds the ability of the Earth to replenish itself.

As may be seen, this system of modalities of meaning covers the natural, ecological sustainability, psychological, technological, social, economic sustainability, along with societal sustainabilities like justice, attitude and faith, all in one single system of thought, one single way of thinking and understanding. This is important. There is no need to switch to foreign modes of thinking when we switch between sustainabilities.

Understanding the Complex Normativity of Sustainability

Those are aspects or kinds of sustainability, but they could be taken at an abstract level of description or explanation without responsibility. Responsibility is a normative question, which presupposes a stark difference between Good and Evil. Good and Evil refer to both the way we behave and the outcomes or

repercussions of that behaviour, which will be differentiated below, but not here. With each Evil there is a corresponding Good - though not necessarily vice versa.

Overall Good is the Good of every aspect together, in harmony. That is what we might define as the fullest kind of sustainability.

"Good" (and corresponding "Evil") is difficult, if not impossible, to define, but may be seen as that which enables Reality to flourish. We still have to define "flourish" but it includes an overtone of multiple kinds of Good working together as dynamic functioning and their outcomes. So, for example, health is flourishing while disease reduces flourishing. Disease, wastefulness, laziness, deceit, injustice and selfishness all alike threaten flourishing. They are kinds of Evil that are meaningful in various aspects (biotic, economic, formative, lingual, juridical, ethical). In every aspect from the biotic onwards we can differentiate Evil from Good, as shown in Table 2. In the first four aspects we find only Good. For example physical causality and force enables physicality to occur in the first place. Table 2 differentiates Good from Evil in each aspect, and moreover functioning from its repercussions, to which we refer below.

Aspect	Functioning	Dysfunction	Repercussions	
			Good	Harmful
Quantit'ive	Amount, less, more		Reliable sequence	
Spatial	Simultaneity Continuity		Continuous extension	
Kinematic	Movement		Change (non-stasis)	
Physical	Force, causality		Persistence	
Organic / Biotic	Feeding, reproduction	Starvation, infertility	Vitality, Biodiversity	Disease, Extinction
Psychic / Sensitive	Response to stimuli; Memory	Insensitivity	Interaction, Emotional health	Sensory, emotional deprivation
Analytic	Distinction	Conflation	Conceptual clarity	Confusion
Formative	Working, planning, constructing, innovating	Laziness, destroying	Achievement, structures, technology	Lost opportunities, destruction
Lingual	Expressing, interpreting	Deceiving misinterpreting	Information	Misinformation
Social	Relating, agreeing	Disdaining, hating	Friendship, amplified activity	Working against each other
Economic	Frugality	Squandering	Prosperity	Waste, poverty
Aesthetic	Harmonizing	Fragmentation, narrowing	Richness, Interest, fun	Conflict, boredom
Juridical	Giving due, responsibility	Irresponsibility	Appropriateness justice	Injustice
Ethical / Attitudinal	Self-giving love, vulnerability, trust	Selfishness, self-protection	Culture of goodwill	Competitive, harsh culture
Pistic / Faith	Belief, courage, commitment	Idolatry, disloyalty	High morale in society	Meaninglessness, loss of morale

Idolatry: Treating something non-absolute as absolute

Table 2. Aspects of Normativity

Sustainability may then be define or at least characterized by realization of the Good of every aspect: health and biodiversity, response and interaction, conceptual clarity, …

Norms however relate. That the norm of the formative aspect, the Good that it enables to enter into Reality, is industriousness, innovation and achievement, with laziness one of its Evils, might suggest that, as long as technology is innovative, it is Good and contributes to sustainability? That is not so! Much technology ends up destroying sustainability - for example agricultural technology, whether of machines or chemicals, destroys biodiversity and even pollutes both food and the environment. Schuurman [1980] argues that technology should be governed not by its own norm (the norm of the aspect in which it itself is most meaningful) but the norms of all the other aspects. Thus, for example, agricultural technology that tends to destroy biodiversity may be seen as Evil, in threatening the biotic aspect of sustainability, so design of such technology should be governed not by technical norms but by biotic. Information technology should be guided by ethical norms of increasing self-giving love rather than increasing selfishness.

By reference to aspects those who assess or plan for sustainability may differnetiate distinct kinds of Good (which constitute and enhance sustainability) and Evil (which jeopardises it). Moreover, Schuurman's maxim enables us to combine norms, to understand indirect impacts of fulfilling one norm (e.g. the formative) while ignoring others (e.g. the biotic, in our example).

Aspectual Functioning in Sustainability

Sustainability is not a static state of affairs but is inherently dynamic, to do with our functioning and the repercussions thereof. Each aspect enables a different kind of functioning and repercussions. Basden [2020, 78] sums this up in the equation:

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WHEN Fa THEN Ga.
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or conversely,

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WHEN Da THEN Ha.
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where `Fa` is functioning and `Da` is dysfunction in an aspect, `a`, and `Ga` is a repercussion that is good according to that same aspect, `a`, and `Ha` is the correspondingly harmful repercussion. (It is useful to call the repercussions of Evil functioning "harm" and Evil functioning in an aspect "dysfunction".)

The four are shown in Table 2 for each aspect.

This offers a conceptual tool for understanding and analysing, and maybe guiding, the normativity of all functioning, whether by individuals or societies, etc. as discussed below.

How each Aspect of Sustainability Serves Others

Above, we have noted that various kinds of activity impact sustainability. Economic growth almost invariably has led to ecological damage, while ecological damage has undermined fruitful economic activity. Dooyeweerd's idea of inter-aspect dependency can help us understand such links.

Each aspect relates to others inherently in several ways, outlined in Basden [2019]:

- Irreducibility: none overlaps with others in kernel meaningfulness.

- No conflict: the laws of one aspect never fundamentally conflict with nor undermine those of others (the popular belief that being too ethical can harm economic activity of a business is false, and rests on a false understanding of the ethical and economic aspects).
- Inter-aspect analogy: Each aspect contains, within its meaningfulness, echoes of that of other aspects; for example physical cause-and-effect has an analogy in the formative aspect as means and ends.
- Inter-aspect dependency: Functioning in an aspect depends on good functioning in others. For example good social functioning depends on lingual functioning of communication and, conversely, full lingual functioning depends on social, not least in agreement about what words or idioms mean.

In such ways each aspect may be said to serve the others, enabling their full meaningfulness to be realized. Two are particularly important in sustainability. No-conflict tells us there is a way in which we can function well in every aspect; we just have to seek it.

Inter-aspect dependency helps us understand the functioning that is sustainability. Good ecological sustainability requires not only good biotic functioning but also good technological, lingual, social, economic … functioning if humans are to be part of the reality of a sustainable future. Conversely, good economic functioning depends on good biotic functioning, in that biodiversity loss threatens future economic prosperity [Dasgupta 2021].

Between each pair of aspects there is a different dependency relationship, in each direction. For fifteen aspects, this gives at least 15 x 14 x 2 = 420 possible dependency relationships, each different from the others. Only a few of them have been studied. Yet, even without full theoretical knowledge of them, we can begin to understand how they might work in multi-aspectual sustainability. Dooyeweerd at least provides a conceptual framework by which we may do this.

Entities that Function, Stakeholders and Responsibility

Many are the types of stakeholder who are affected by sustainability and most of which bear some responsibility for it. Dooyeweerd's theory of things and types of thing can help us in this.

Dooyeweerd posited that all types of entity are governed by the structure of individuality of that type, which is a profile of aspects in which certain aspects qualify the type of thing and define its destiny and main norms, others are foundational, explaining its coming-into-being, and so on. We need not discuss details of this theory here, except to allow that in any type of thing, aspects fulfil various roles in defining that type of thing. Plants are qualified by the biotic aspect, animals by the psychical aspect, rocks by the physical aspect, organisations by the social aspect, languages by the lingual aspect and faiths by the pistic aspect. In rocks, plants and animals, the qualifying aspect is the latest aspect in which they can function as subject, but human beings, as individuals, have no qualifying aspect and can function as subject in any. This may be used in considering stakeholders and responsibilities.

Gunton et al. [2022] has operationalized Dooyeweerd's aspects into a Pluralistic Evaluation Framework, in which an important component is to identify stakeholders. Asking what stakeholders there may be in each aspect helps to bring to light some that might be overlooked.

In addition, it is the qualifying aspect that most defines the responsibility of a type of thing, along with the aspects earlier than it. Plants are responsible for

growing, reproducing and producing food, animals are responsible for interacting, but also for growing and reproducing. Humans are responsible for functioning in all aspects. A tree or animal or human might also be responsible for physical occurrences like, being too heavy, breaking a cliff ledge. However, it is only humans that are responsible for e.g. economic collapse; animals never can be because they do not functioning as subjects in the economic aspect. By some, the cow is deemed responsible for hunger in India, but instead it is humans treating the cow as sacred (functioning in the pistic aspect) that is in fact responsible.

In this way, we can begin to throw light on where responsibility lies for sustainability, whether this be biotic, economic or ethical kinds of sustainability. For example, in Britain the Elm trees were all destroyed by Dutch Elm Disease. Within biotic functioning, we may validly hold the Dutch Elm Disease virus responsible, but the ultimate responsibility lies with the businesses that chose to import infected timber (progress of the disease can be traced from certain ports or entry, spreading throughout the country). That is economic functioning, also probably coupled with dysfunction in the ethical aspect of selfish disregard.

Notice, that we hold businesses responsible there. The business is a social enterprise that is led by the economic aspect. This allows to go beyond an individualistic assignment of responsibility. A nation's economy may be responsible for environmental degradation elsewhere, such as USA's demand (indirect though it be) that Amazonian rainforest be cleared to grow cattle. A judicial system or a government (juridically qualified entities) may be responsible for increased climate change. Christianity of the Roman type has been blamed for environmental destruction by reference to an interpretation of humans having dominion over nature [White 1967] (in fact the real blame lies more at the feet of Humanism; in fact Christianity and many churches are taking responsibility for God's Creation in a way that Humanism finds difficult to understand).

Nevertheless, the individuals who lead businesses, governments or religions are still to blame, because their individual choices, arguments, attitudes, and aspirations (their individual functioning in the formative, lingual, ethical and pistic aspects) influence the way those institutions function.

Therefore, the complex web and multiple seats of responsibility for sustainability, involving institutions, individual humans, organisms, etc. may be at least tackled by reference to Dooyeweerd's aspects as the ways in which they all function. This proposal has yet to be properly defined, discussed and tested.

Conclusions: Implications for Practice Of, and Research Into, Sustainabilty

Research involves first deciding what to research, both an overall research problem and also, in more detail, what gaps there are in humanity's understanding that is relevant to that problem, and which of those gaps to try to fill. In sustainability research these are usually focused on a single, or a narrow range of, aspects (i.e. on what is meaningful). This is to be expected, given the tendency of the sciences to specialise (ecologists study the ecological aspects, sociologists, the social, etc.). However, there has been increasing awareness of the need for an interdisciplinary approach, crossing disciplinary boundaries [Lam et al. 2012].

Dooyeweerd offers a conceptual framework that is more comprehensive and coherent than many others. A Dooyeweerdian approach can be especially advantageous in interdisciplinary research in sustainability. First, it keeps in front of researchers the multiple aspects of sustainability that transcend their specialisms, and second its understanding of inter-aspect dependency offers a

basis for understanding the relationships among the specialisms (otherwise, ‘interdisciplinary’ research tends to be merely a cobbling together).

Even in specialist research, Dooyeweerd’s aspects can help sharpen up our understanding of what is meaningful in the specialism and which laws apply, and also when it is necessary to reach across into other disciplines and take their best research into account, otherwise there is a temptation to try to reduce those factors meaningful in other aspects to one’s own aspect, and thus narrow and distort it.

In the practice of sustainability, that is, in the actuality of planning, assessing, working and living, Dooyeweerd’s aspects help even more, as a conceptual tool. They help us keep all aspects in front of our minds, so that none are overlooked. They offer an understanding of the complex interrelationships that pervade reality, and clarity about disciplinary boundaries, as they do in research. In addition, the distinct normativities of aspects helps us in both problem solving and in planning for the future. Dooyeweerd’s ideas can help us in such ways at all levels, individual, households, organisational and business, national and global. For example Gunton et al. [2017, 2022]

However, this may be a new paradigm for sustainability. Only occasionally has it been proffered, notable exceptions being Brandon & Lombardi [2005] in urban sustainability, Gunton et al. [2017; 2022] in valuing ecosystems in a broad multi-aspectual manner and Basden [2017] in understanding how disparate contributions to a debate may be brought together.

It calls out to be tried more widely, discussed, developed, assessed and seriously adopted, in both practice and research, before we can know what merit it has.

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