The series constitute ‘ideas in progress,’ after the notion described by I.J. Good in ‘The Scientist Speculates.’ Good also describes ideas about ideas as ‘partly baked ideas’ believing that “... it is often better to be stimulating and wrong than boring and right.” While the papers do not take this tenet as an excuse for licence at the expense of rigour, they are exploratory and the ideas may change as a theme is developed over time.
Is there a viable way to think about sustainability and sustainable development? The question seems nonsensical as many people already do while others claim to do so. These claims vary between complex and simplistic with all shades in-between; they often focus on what is glibly called ‘the environment.’ Is this wrong? Well, ‘no,’ but it is only a part of what is involved. Then there are many organisations and companies, large and small (a quick Google search produces over 1 million ‘hits’ relating to solar energy companies alone, listing Tata, BP and so on down to small ‘workshop’ companies), that deliberately work at various aspects of ‘sustainable development’ and have done so for many decades. So what’s the problem? Firstly, it is the use of the word problem, with its connotation of the existence of a ‘solution,’ rather than situation for which there is amelioration, but no solution. Situations also occur in interrelated cascades. The second point arises from the first; no one knows what the conditions are for sustainability or sustainable development nor is there any clarity about how decisions can be made that are thought likely to promote the emergence of some unknown set of conditions or how and who will take these decisions, since they may not happen in the same place or involve the same people [Loveridge 1977]. Is it true to say that the conditions of sustainability are ‘unknown’? Surely they are those that exist now that favour the continuance of life as we know it? Maybe, but maybe not. After decades of wasted opportunity, but not by industry, governments and the ‘chattering economic classes’ at last seem to have woken up to the idea that humanity and human societies are not separate from all the Earth’s other lifeforms, but rely intensely on the resources the Earth provides, including the aerobic atmosphere, and on the solar insolation that drives the Earth as a living system. However, the idea that humanity is not essential to life on Earth nor does it control or manage life on Earth, is a hard one to grasp, even though the evidence is clear enough. It seems that ecological economics and industrial ecology have gained relatively little purchase so far on thought processes that seem stuck in the disastrous rut of conventional economic thought (there are no laws in economics). Of the many definitions of sustainability and sustainable development, that set out by the UN Commission (Brundtland 1987) probably remains the most frequently quoted and the most apt, largely through its unspecific character with the exception of its reference to inter-generational responsibility. However, the implied question ‘what is sustainability or sustainable development?’ remains slippery, with the characteristic of trans-science (Weinberg 1972), which itself assumes that science, even though unable to respond to the questions put to it by society, will be looked to as the provider of the means to achieve the unknown and dynamic conditions for sustainability.

Often the situations humanity faces are portrayed as a filtering process in which ideas from the STEEPV (Social, Technological, Economic, Ecology, Politics and Values) themes are sorted into those that will enable sustainability or sustainable development to emerge or occur. The metaphor uses the notion of a funnel[1] or constriction through which competing ideas are squeezed for sustainability and sustainable development to emerge as a kind of ‘output.’

The process is redolent with the notions of scientific reductionism. For presentation purposes the notion of a constriction is a useful metaphor for a way of compressing, sorting and discarding ideas in order to create an output including a sustainable human species as part of a wider Earthbound living system. Humanity’s self-interest is in maintaining successful continuity for itself as for as possible, until the human population exceeds the Earth’s carrying capacity for it and the activities it indulges in[2]. At that point the species will either crash to a much smaller number or go into extinction. For small scale, reasonably well-defined problems, where the output can be defined, the constriction or filtering metaphor is often used[3]. For larger unstructured situations the metaphor fails as the veritable swarm of intelligent, interrelated ideas and entities, presented to the sorting constriction, is of unknown size and complexity, while logically the emergent outcome can be neither specified nor easily appreciated as manifesting sustainability or successful continuity for humanity (see the figure below) except retrospectively.
The sustainability of life on the Earth is, to coin a phrase ‘not a big deal,’ as that has been the state of affairs for several aeons, though the spectrum of life-forms has undergone continuous change through successive extinction’s and re-emergence’s as the dynamism of the physicochemical and bio-geophysical conditions on the Earth have emerged. If the sustainability of life on the Earth is an emergent property, what, if anything, can humanity do to promote the successful continuity of its own species? Perhaps the first step is a change in mindset among human policy makers and humanity as a whole, to recognise the interdependence of all life and that predator-prey relationships are endemic in living systems; the search for food is paramount. In that respect, humanity is in tune with the rest of the planet’s life forms. Where humanity differs, or so it is claimed, is in its ability to choose how to support its ways of life, but this is sophistry. Despite the complexity of humanity’s modern life ways, the search for food, and the other basics of life so well described as ‘survival’ in Maslow’s hierarchy, is the ultimate objective of all human activity; transgressions of this basic intent result in feasts for the Four Horseman of the Apocalypse - Pestilence, War, Famine and Death. Despite all the ridicule poured on Malthus and his predecessor, Robert Wallace, population and food (fuel) supply, together with water supply, all set within an atmosphere of its current composition, are the key elements of the emergence of sustainable living systems, with humanity as a subset. While these elements of human survival seem obvious, that some are not universally available in today’s human societies indicates that they are not sustainable. Global indicators, mostly economic and monetary, of this or that element thought to be relevant to the emergence of sustainable living systems, are irrelevant. It is local disparities that hold the key, simply because, for example, an ‘over populated’ city or region is an extremely vulnerable one liable to be winnowed by any combination of the Four Horsemen because that over population is due to its character as a living system not simply as a human society. The emergence of any sustainable region then depends on situations that are shaped by the interrelated activities of billions of organisms, including humanity, in which the latter, the minority, believes it alone can shape the emerging situation. Whether individuals or policy makers recognise this dilemma is a moot point, but it is suggested that the latter might either knowingly or unwittingly recognise and make use of the matrix illustrated below.

Each element in the situation needs to be presented to the front face of the matrix to appreciate its relevance and to face policy makers with the dilemmas regarding their appreciation of their capabilities to exert, through policy, either control or partial control over that element of the situation or whether it is outside
their control. The multifaceted choice for the policy maker is likely to be an uncomfortable one requiring admissions of ignorance rather than one of omniscience. The initial step into the matrix is the easiest for the policy maker. The next step is to recognise that the matrix applies to each node of the interdependent STEEPV set in the manner illustrated below. Each step at one node requires the consideration of the interdependencies with the other five nodes. The complexity of this process is perhaps why emergence is the key property of the evolution of sustainable living systems. If the first step into the use of the matrix looks reductionist the second step should remove all illusions about the complexity of the situations that comprise sustainability and its dependence on emergence.

Notes

[1] With acknowledgements to the National Centre for Business and Sustainability (NCBS)
[2] The notion of carrying capacity has been discussed extensively by Hardin and Holling in various papers
[3] The metaphor has been used extensively by Forum for the Future and the NCBS