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Growth and sustained, nagging problems

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Growth and sustained, nagging problems

Bonn, 19 October 2009. Growth creates jobs … and sustained problems that stubbornly refuse to go away. The economic growth machine has begun to sputter, and only those who credibly promise *sustainable growth* are likely to win elections. At the same time, though, the discourse on the limits to growth is again picking up steam. It is not only Dennis Meadows who sees confirmation of the projections he presented in his 1972 report to the Club of Rome. Advocates of a steady-stream economy, like the US economist Herman Daly, never tire of warning of the consequences of "uneconomic growth." A good number of prominent scientists from a great variety of disciplines have, in a much-noted article that appeared a few weeks ago in the journal *Nature*, attempted to pointed to the risks involved in overstepping planetary boundaries – in the sense of coming increasingly and dangerously close to critical tipping points, points, that is, beyond which the world will inevitably be faced with an unmanageable system crisis.

Moreover, critique of growth is increasingly leaving the confines of scientific circles, becoming the talk of the town. To cite an example, the former CDU state Minister President Kurt Biedenkopf has, in interviews, stated, virtually as a foregone conclusion, his incomprehension for the assertion that a nation's economy should have to grow while its population continues to shrink. Klaus Wiegand, an economist and former spokesperson of the German Metro Group, admits that he has much to blame himself for in the past, and now, in talks and as the editor of a book series on sustainability issues, he notes that there can be no doubt whatever that growth in a bounded system cannot continue ad infinitum. It is, however, for obvious reasons difficult to anchor, in day-to-day life, the principles and modes of functioning of complex and spatially bounded systems. This must necessarily go far beyond any simplified templates involving sustainability triangles or three-pillar models designed to lead us to believe that it is possible to weigh off against one another, and on equal terms, economic, social, and ecological desiderata.

One fundamental principle of any modern concept of sustainability must be a holarchic worldview of the kind championed by Arthur Koestler. As "micro-holons," single systems, like e.g. the human individual, the institution, or the nation-state, may, within certain limits, come to autonomous decisions and are able to respond, individually, to disorders without needing to be incited to do so by higher-level agencies. As systems, they are able to assume other states, and even to grow. But in the end they are all, at the same time, "components of a larger whole." They are integrated into a complex system nexus. Above all, though, they are sub-systems and as such dependent on a higher-order systems, so-called *holons*, at once whole and particle. Assembly of particles and sub-systems to form higher-order systems is a consistent process to be observed in the physical, biological, and cultural evolution of our world. The driving force behind this process appears to be increases in the (thermodynamic) efficiency of systems. Sustainability may, accordingly, be regarded as the conservation of efficient system states, and it appears to go hand in hand with a certain stability and resistance to external disorder. Non-efficient systems tend to abruptly assume other states, or even to collapse.

Mankind, too, with all its institutions and activities – let us call it the anthroposystem – is a dualistic holon. One, be it said though, that has made use of a unique and extremely accelerated growth to achieve extraordinary changes. It has in fact broken through or shifted countless boundaries. Prior to cultural evolution, man was, as a "normal animal," part of a local or regional East African ecosystem. But in the Pleistocene the ancestors of today's humans, making use of

growingly complex technology that culminated in the artifice of fossil energy use, cast off the shackles of their savannah system and, by tapping into material and energy flows, were virtually plugged into all of the Earth's ecosystems. However, growth, complexification, and globalisation of the emerging anthroposystem as well as of many of the sub-systems that have constantly emerged in the context – including e.g. states, confederations of states, financial, economic, and information systems – have deprived mankind of some of its more important features: above all its sense of dependence on higher-order systems as well as for the limits to growth.

In the wake of a century of extremely accelerated growth that set the stage for growingly large measures of individual liberty and opportunity, many of us may now even have the impression that the anthroposystem is, in the end, no longer a component of the global ecosystem – indeed that, conversely, the Earth system needs to be managed *sustainably* as a subordinate component of the anthroposystem. What this implies in effect is overlooking the key problem, namely that far from running, in the main, on electrical power, human society lives solely on the basis of carbon organically conditioned by plants. And just as in any other system, the laws of thermodynamics imply that humans will be able to preserve the order of their bodies or their societies only as long as they are constantly able to feed into it the energy it needs, in this way increasing the disorder (entropy) in other systems, including e.g. plants or ecosystems. The disorder of this kind engendered by humans in local ecosystems was a manageable problem. The new order of globalisation, though, has unleashed a number of entirely new global system risks that are virtually beyond the comprehension of individuals and no longer accessible to management by national or regional societies.

Efficient systems tend, it appears, to assume closed states, with energy and materials flowing, as long as possible, within the system's boundaries. It is only up to a certain point that an increasing complexity of systems - in the sense of their having increasingly more, and more closely networked, components – entails a rise in their efficiency. For example, once a certain number of interacting particles has been reached, atoms become unstable and collapse. Rapidly evolving empires like those of the Romans or Alexander the Great were, at one point or another, unable to manage the complexity of their sub-systems; as systems, they had become too open and inefficient, and they collapsed. The globalised anthroposystem has, in many regards, long since overstepped the turning points of its efficiency. The disorder emerging in the global ecosystem is no longer commensurate with the order in the anthroposystem, which has been achieved at the expense of growingly high energy inputs.

What we need is a new, reasonably complex conception of sustainability, a sustainability that is of this world and therefore will necessarily be in harmony with the thermodynamic and system principles that obviously apply in it. The vision of a carbon-free, solar energy-driven growth is an illusion, and one that is, so to speak, counting its chickens without an eye to the iron laws of thermodynamics.

A growth blind to system boundaries has unleashed a process of global environmental change that now casts any Brundlandt-style sustainability, with its notion of intergenerational equity, in an increasingly utopian light. And yet the concern must, in any case, be a systemic sustainability that implies that our modern world society may be spared abrupt degradation, or indeed collapse – to prevent, at least, reduction of the development chances of future generations to zero. This we will not achieve through efforts to combat poverty. The paramount concern now must be to combat growth.