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POTSDAM DENKSCHRIFT

&

POTSDAM MANIFESTO 2005

**“We have to learn to think in a new way“**

**English version**

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## P R E F A C E

On October 14th 2005 the Potsdam Manifesto "We have to learn to think in a new way" and its 'mother', the Potsdam 'Denkschrift', were presented to the public in Berlin.

We had worked on it since the beginning of the Einstein-Year 2005. The transdisciplinary cooperation demanded quite a difficult process of communication we barely had imagined at the outset. Supporters from all over the world, however, supported and encouraged us in our effort. Within the scope of a specially arranged symposium in Potsdam from 24th to 27th of June a preliminary draft of the 'Denkschrift' was intensively discussed and deliberated on. The open, very critical but constructive process of the symposium resulted essentially in a full support of the paper by all participants with the provisions to extent, on the one hand, the 'Denkschrift' in order to better clarify some important issues and, on the other hand, to provide in addition, as a Manifesto, a shorter version. Although in content rather close to the 'Denkschrift' the Manifesto by its brevity necessarily did become much more abstract. For easier comprehension, hence, we recommend to start reading the 'Denkschrift', being more elaborate and profound, and consider the Manifesto as a kind of summary or abstract. We realize in this context, that the connotation as 'manifesto' is actually misleading and a designation as 'immanifesto' would be more appropriate.

During the time of preparation and in particular after the publication, an intensive discourse started which encouraged us to intensify the international communication and further dissemination of the documents. The discussions demonstrate, that there is a large common interest for the questions raised by 'Denkschrift' and Manifesto and their further elaboration. The opinions will not be unanimous and they don't need to be. There are just very different approaches. On the Webpage (<http://www.vdw-ev.de>) of the 'Federation of German Scientists' it is (inter alia) possible to participate in this discourse. It is important that a general discussion gains momentum beyond the usual scope of the common public debate in our culture and elsewhere, and opens new points of view.

We wish to thank all our supporters and friends for their encouragement, advice and essential help in this process.

Berlin, 11th January 2006

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POTSDAM “DENKSCHRIFT” 2005

*“All, equally, are in peril, and, if the peril is understood,  
there is hope that they may collectively avert it.  
We have to learn to think in a new way.”*

From the Russell-Einstein-Manifesto, 1955





## I. Starting Situation

Justifiably worried that Hitler's Germany could get the upper hand in building an atomic bomb, the convinced pacifist Einstein wrote a letter to President Roosevelt shortly before the beginning of World War II, adding his voice to what led the president to initiate America's Manhattan Project. The resulting fission bombs were used sixty years ago in 1945, soon after Germany's capitulation, against Japan. In great consternation, Einstein called for a fundamental political re-orientation to make wars impossible in the future. But without visible success. The development of fusion bombs (hydrogen bombs) increased the deadly potential of nuclear weapons of mass destruction to almost unlimited dimensions and, in the escalating confrontation between East and West, became a mortal danger for all of humanity.

Fifty years ago, prominent oppositional movements formed all over the world to stop this arms race. Bertrand Russell formulated a manifesto, and Einstein signed it shortly before his death. It was an ultimatum calling for *a new way of thinking* that would ensure that, in the future, war would be completely banned as an instrument of politics and conflict resolution.

What has become of this urgent call today, fifty years later? In particular, it awakened groups of citizens, a civil society, that gained attention and launched its own international initiatives all over the world as the peace movement, later as the environmental and third-world movement, and as the cultural-critical women's movement. In many ways, they courageously practiced a new way of thinking. They thus took outstanding part in the exemplary process of reconciliation among the once bitterly hostile European nations and in particular, to a much greater degree than yet publicly acknowledged, in the surprisingly successful nonviolent ending of the Cold War. Their insights and experience are the fertile soil for this Denkschrift. That the triumphant authoritative political powers learned nothing and did not want to learn anything from this peaceful change was frighteningly evident in later developments, in which none of the many hoped-for, trailblazing options were taken up.

The history of the last fifty years has clearly showed that military strategy, with its preliminary culmination in weapons of mass destruction – and today, not only nuclear, but also chemical and biological WMDs, as well as their special use against sensitive targets – is only an

especially spectacular, but in no way the only or most important realization of a much more far-reaching and deeper-based power strategies with new military, political, and above all economic components. These have led to an escalation of structural violence and terrorist reactions.

Probably the most important factor today is the structural violence exerted by the highly-centralized physical economy and by the financial industry, which is closely networked around the world. Economic power has managed to seize primacy over military power and to make the latter its complete servant, with equally deleterious consequences. And this has not happen coincidentally, but consciously and intentionally. For it is an unfortunately widespread opinion that a growing concentration of power is a precondition for a reliable world order, whereby that order's neutral international anchoring, formerly regarded as an indispensable prerequisite, is in danger of becoming meaningless.

Structural violence in economic life arises, first, from the power interests of the hegemonic powers and, second, from the worldwide hegemony of international finance capital, which must not be equated with the market economy. The geopolitical, socio-cultural, and economic power strategies, as well as the unlimited expansion strategies of modern business and production, necessarily provoke and create incompatibilities with the fundamental spatial and material limits of our biosphere. These are expressed in life-threatening ways in the changes in micro- and macroclimatic conditions around the world, in the deterioration of soils and vegetation complexes over broad regions, in damage to the hydrosphere that is irreversible on a human scale, and in the rapid, destructive exploitation of exhaustible mineral and energy resources. Particularly dangerous thereby is the destruction of biodiversity, which is proceeding at an accelerated rate seemingly unique in the history of the earth. For the annihilation of the bio-ecological diversity of whole complexes of life is an irreversible loss for the geo-biosphere and, within it, above all for us humans as the "top rider" of the metastable pyramid of life and the final link in a long and complicatedly branched food chain. But the variety of human ways of life and the treasure store of the cultures are being similarly irreversibly reduced – and with their loss, the spectrum of possible future strategies and lifestyles, necessary changes and developments, is narrowed and diminished.

But such recognitions remain superficial, because they reveal only dangerous symptoms and existence-threatening syndromes, which must be specifically corrected in the short term and healed in the long term. The investigation and uncovering of the deeper causes of these dangerous developments has been neglected. The increasingly globally adapted power strategies and the image of humankind associated with them are closely tied to our materialistic-mechanistic worldview, which is meanwhile favored all over the world, and with the way of thinking that results from the spirit of doing and that provokes action in conformity with power considerations. This view of the world, in which the world resembles a material clockwork operating in accordance with strict laws (also called the classical Cartesian-Newtonian worldview) is not the real cause, of course. It is itself the result of and legitimation for a historical development in which patriarchal hierarchies and power-seeking organizational strategies, as well as a narrow monotheism, play an important role in separating humankind from the realm of nature. But the strategies believing that there are no limits to what can be done, are based on the increase in the precision of these materialistic-mechanistic ideas of the world and on the thereby enabled successful scientific-technological development of our civilization. The (controllable) instrumental knowledge necessary for this is provided primarily by the empirical sciences, which, in the context of this worldview, orient themselves toward the fundamental principle of an asserted causal closure of the material world as “reality” (a reality of objects) and which project it (especially via the political, social, and economic sciences) onto all aspects and processes of life on earth. This in turn leads to forms of action whose results seem, in the short term, to strictly legitimate this reality.

## **II. Invitation to Think Further**

*“We have to learn to think in a new way.”* Taking this challenge seriously actually means setting off on a path of learning. The essential orientations are obvious: negative, calling for a turn back, and positive, encouraging different alignments. But thinking in a new way also means becoming familiar with other forms of thought than those of the problematical, still prevailing conventions; and even our use of language requires further development and supplementation. The meaning of a great number of words and expressions in everyday speech has been

narrowed and deformed (through negligent wear and tear, but recently also consciously to mislead in the Orwellian sense of “newspeak”). In addition, to achieve conceptual precision, the various scientific disciplines have necessarily defined their content in ever more specialized ways, thus creating their own respective idioms. Achieving understanding across the boundaries that we seek to overcome can thus become truly difficult even where we are already moving in the same direction and striving to encounter each other in mutual understanding. But precisely finding understanding about this is the decisive medium of change: to recognize ourselves better in the reactions of others and to see more clearly and variously what is important to us by considering from all sides the various aspects and justifications. But we must be aware that our world, the *Wirklichkeit*, that we want to trace with this new way of thinking, no longer turns out to be a theoretically closed system, so that – on principle – there are no longer answers to all the questions we believe we can pose, since many of these answers go nowhere.

The observations and considerations in this Denkschrift are based on knowledge we may regard as secure. The approach to and sequence of these thoughts are unavoidably shaped by the authors’ previous education and training. The Denkschrift is, first of all, devoted to the commemoration of Albert Einstein. A century ago, the great physicist prepared the transition from an old physics, triumphant without competition, to a strange, new physics that seemed paradoxical even to Einstein – who himself in a way was unable to step across this new threshold. But the Denkschrift’s occasion is the great drama of our epoch, heralded 50 years ago in the Russell-Einstein manifesto: that this exciting new physics not only opened up another, beneficially expanded, vibrant view of the world – a view revolutionarily different from the previously exalted “classical” idea – but also, and this is a tragedy not only for the physicists, that it decisively led to the technological development of superweapons that, ever since, have threatened the existence of humankind and much of the biosphere, as all can clearly see. We recognize today that, to effectively counter this threat, it is not enough merely to rigorously ban future wars; rather, we must fundamentally correct our current behavior. But how can we do this? We believe that precisely these revolutionarily new insights in physics could provide a starting point for defusing and solving the problems: The dramatically

changed and expanded instrumental knowledge must urgently be joined by the accompanying orientation knowledge. This will be *our* approach.

But in general, the Denkschrift is meant to serve as a catalyst to stimulate others to think in a new way and to encourage them to ask themselves how the narrowing of thought and of language can be overcome and the underlying contexts perceived more comprehensively. And not least, we should look for ways to launch these processes, in order to incrementally shape our open future for the diverse possibilities of the living world.

### **III. A New Orientation is Necessary**

#### **From the materialistic-mechanistic worldview to a mental-vital cosmos**

Max Planck's astonishing description in 1900 of the experimental data on the light radiated by heated bodies and Einstein's subsequent Nobel Prize-winning insights of 1905 indicated the particle-like structure of light, the existence of light quanta, which stood in paradoxical contradiction to the wave-like character of light securely established by Faraday and Maxwell. Twenty years later, Louis de Broglie reversed this incomprehensible "wave = particle" ambivalence with his recognition "particle = wave" as a necessary prerequisite to explain the strange behavior of the electrons in the electron shells of Bohr's model of the atom.

Werner Heisenberg, Niels Bohr, Max Born and Wolfgang Pauli finally resolved the paradox of this "quantum physics" in 1925 with a radical re-interpretation of the dynamics. It demanded a revolution in what had been the classical view of the world, with the surprising recognition that matter is not really material at all, but a web of relationships, a kind of gestalt, or in a certain way "information" without any carrier. The assumed fundamental ontic structure of the world, based on a primally existing substance, was rendered invalid. It must be replaced by a "cosmos" where the first questions to ask are no longer "What is?" and "What exists?", but "*What happens?*" and "*What binds?*" More precisely: Instead of the world assumed until then, a mechanistic, thing-filled, temporally determined "reality" (lat. res = thing), the actual *Wirklichkeit* (a world that '*wirkt*', that effects or affects!) turned out to be

“potentiality”: an indivisible, immaterial, temporally essentially undetermined network of relationships that determines only probabilities, differentiated capacity (potency) for a material-energetic realization. The classical “reality” of material/object-like separated things emerges only through a coarsening averaging of the potential, thus turns into a holistic, temporally essentially open, immaterial, inseparable omni-connectedness.

In 1928 Paul Dirac further developed the quantum theory into a “relativistic-invariant” quantum mechanics, which takes into account the consequences of Einstein’s “Special Theory of Relativity”. Dirac’s theory necessarily led to a “multi-particle theory” and ultimately to the more comprehensive “quantum field theory”. The latter includes processes of the spontaneous creation and annihilation of “particles” (or better of ‘haps’ as elements of ‘happenings’). To the already postulated indeterminism (the temporally essential openness), this added to the relativistic quantum world the new characteristic of a genuine creativity (which is more than an ‘evolution’, a mere unfolding of a determined future). The combination “open/creative” arouses more associations with living systems than with dead matter, so that “pre-living” seems a suitable abbreviation.

The creative, immaterial, omni-connected constitution of the *Wirklichkeit* in this relativistic-expanded form permits us to grasp the inanimate and the animate world as merely different – namely, on the one hand, statically stable or, on the other, open and statically unstable, but dynamically stabilized – articulations (‘haps’) of such a “pre-living” cosmos.

Due to its loosening and opening, natural science’s new, deeply changed interpretation of the world proves astonishingly suited to build bridges between scientific disciplines otherwise drifting apart and, beyond that, to make possible a close connection to the arts and religions. It prepares the ground for a new, expanded common direction of thought. But there is a far-reaching limitation: The natural sciences, too, must accept that their objectifying epistemic (analytical) knowledge, which they imagined to be exact, is limited in principle, and not merely in the sense of “not yet knowing”. The *Wirklichkeit* is not unlimitedly knowable. For this reason, also physics, as the foundation of every natural science, like other disciplines and forms of interpretation, ultimately can speak only in parables and analogies about a *Wirklichkeit* that

is fundamentally ungraspable, not object-like, but describable mathematically (in terms of relations). This also means that we always butt up against limits – also in this Denkschrift – past which we can no longer express ourselves with the means of our colloquial speech. It is still the case that the mathematical description of the non-manifested potentiality can be experimentally tested in terms of its consequences for the manifest, thing-like/factual reality. So we are not thrown back to complete chance and what can no longer be calculated. The opening that is expressed in an (infinite) indeterminacy of future realizations is not completely random, but occurs within fixed tendencies characterized particularly by symmetries in the dynamic relationships implying strict laws of conservation (for example, the conservation of energy in all processes).

The ecological, economic, and cultural crises confronting and seemingly challenging us beyond our capabilities today are the expression of a far-reaching mental crisis in the relationship between us humans and our living world. And this is essentially connected with our refusal to accept – not merely formally, as up to now, but consciously with all its consequences – this discovery of the character of the *Wirklichkeit* in the scientific context, which has been revolutionarily expanded in comparison with the accustomed thing-filled reality. This forces upon us a modesty about what can be known in principle. Our reluctance, however, can easily be understood, not only because of this sore loss, but also for practical reasons, because, as it turns out, this expansion of the “inanimate” phenomena remains essentially without graspable consequences in the context of our objectifiable everyday experiences (laser light would be a counter-example). This is why reductionist natural science, with its strict laws and the resulting predictability and manipulability, initially seemed to remain valid without limitations within this limited area of experience and thus to heuristically justify the idea of a materialistic-mechanistic world.

But for the energetically open, animate manifestations of reality, to which human beings also belong, the expansion takes on essential significance expressed precisely in “animation” (in the conventional sense) and can be connected with a “mental” or, expressed somewhat daringly, a “spiritual” dimension. The surprising peculiarity of the phenomenon of life lies in its sensitivity (resulting from unstable balances), which permits it to trace and “receive” the “pre-living” ground of be-

ing. This corresponds to a refinement of the accustomed chaos theory (which is also used to interpret what lives), in which chaos, till now conceived as “determinate”, is replaced by quantum-physical “fluctuations” (a highly correlated “wiggling”). A “new” thinking requires us to discover behind the apparent laws of nature, which were necessarily strict in the old thinking, precisely this pre-living diversity and openness that we lose in the coarsened, “graspable” oversimplification of statistical averages.

Such a new way of viewing opens up the possibility of believing in a genuine creativity and gift for intentional action in relationship to the community. It provides the basis, on the one hand, for our striving for freedom and the development of individuality, and allows us to be different. And this, on the other hand, without losing the underlying omni-connectedness, which is expressed in a deep-seated tendency to contribute our specially-developed abilities, in cooperation with others and “organismically”, to a higher ‘whole’ – and to do so of our own accord and of our own free will.

### **Modern scientific knowledge and traditional insights**

The modesty demanded by the new insights teaches us that, in a certain sense, the new natural scientific knowledge and its consequences can hardly be called “revolutionary”, as it might appear to many modern people whose patterns of thought are oriented toward important partial aspects of the Enlightenment and the reductionist science based on it. We find this “new knowledge” confirmed in one way or another in the broad spectrum of cultural knowledge, in the diversity and forms of expression of human life in history, and in the broad variance of living and cultural realms. We can thus regard the “new” knowledge presented here as an additional scientific confirmation of the diverse ethical and moral value systems (if we, like many today, have thus far assumed an eternal validity of epistemic science). The necessary immaterial opening of the *Wirklichkeit* can be caught in a “mental” form that, in this description, however, goes beyond the human to include all life.



## IV. Consequences of Modern Insights for Our World of Experience

### Inadequacies of the materialistic-mechanistic description

Eight orders of magnitude above the micro-world that articulates itself as “pre-living”, in the meso-world of our daily life (whereby “meso” aims to indicate our world of experience’s middle position between the micro-world of atoms and the macro-world of the stars), it seems appropriate that a coarsened summary view of the immense number (on the order of magnitude of  $10^{24}$ ) of micro-physical processes is aggregated in the ‘things’ we perceive. In the incoherent and uncorrelated overlaying of all these processes (through mutual compensation of the pre-living), which precisely characterize inanimate nature, this leads in the coarsened average to the accustomed classical, materialistic-mechanistic description. This tempts us to extend the classical description indiscernibly to *all* objects of non-microscopic size (meso- or macroscopic, so that averages are precise enough). This, in fact, is the reason why most people regard quantum physics and its new insights as a phenomenon solely of the micro-world and whose consequences need not concern us in the comparatively huge meso-world of our daily life. But this is generally not permissible when the collections of atoms (or better: ‘haps’) are not in proximity to their stable (thermodynamic) balance. If they are very far away from these states of balance, especially in proximity to instabilities (chaos points), then the averaging is foiled usually on a number of levels; this makes the immaterial, information-bearing, pre-living connections that dominate the micro-world more or less effective on the meso-level. Instability functions as an enormous amplifying factor. This situation characterizes animate nature as we encounter it in everyday life.

If we – quite riskily – apply this consideration to the human as a living being in the mesosphere, this has far-reaching consequences for our dealings with our living *Wirklichkeit* and for our relationship to our animate and inanimate environment. The individual person, like everything else, is in principle never isolated; his merely seeming smallness is at the same time unlimitedly involved and significant in the omni-connected shared world. The many influences and impulses from other people and our geo-biosphere affect all of our activity, and not only via the bridge of material-energetic interactions mediated by our senses, but also directly through the immaterial potential connectedness com-

mon to all. Our activity in turn equally influences the entire societal structure and changes the constantly dynamically changing potentiality of the living *Wirklichkeit*. The uniqueness of the individual is thus a “load-bearing” component of the process of common cultural evolution.

From the many-layered manifestations of the animate world, we can learn how diversity and plurality cooperatively combine in living complexes and develop into higher-dimensional vibrancy. Practically, this leads to greater flexibility, which is thereby a life-serving consequence of cooperative integration and less, if we interpret it in the usual Darwinistic way, the actual cause of successful higher performance of one or more individuals. Here, higher-dimensionality means an extension of different qualities. Humans and human communities with their cultural and societal worlds of ideas, their creative processes, and their lively exchange are a special, deeply connected sphere of the animate world. Making such comparisons is not ‘biologism’ in the old sense, which still carries the meaning of determinism and mindlessness, since the pre-life level is an essential aspect of everything, including the thing-like ‘reality’ that is usually grasped as “dead”. The proximity to a mechanistically narrowed naturalism may create misunderstandings, but the new insights require us to reach a more comprehensive understanding of our *Wirklichkeit* in a fundamentally new way of thinking in which we humans, too, understand ourselves as threads in the fabric of life, without thereby having to sacrifice any of our special qualities.

In contrast to the strictly closed systems, like those that can be constructed especially in the area of the inanimate, in which (in accordance with the Second Law of Thermodynamics) “what is more probable will more probably occur in the future”, our new insights teach us – and the existence of the animate clearly shows us: in the temporal development of an open world in which partial systems are dynamically maintained in unstable balances by the constant addition of (useful) energy (better: exergy or syntropy = negative entropy), “the improbable must no longer remain improbable”. Here, self-organization opens up an unlimited field of possibilities. Life can thus develop in unexpected, ever richer, ever more complex forms. Pre-life then organizes itself in the diversity of a “higher” bio-ecological vibrancy, such as we encounter ‘life’ in the mesosphere of our daily life.

The insights into the micro-world suggest an interpretation of the world that leads us beyond the materialistic-mechanistic worldview. For this reason, the significance and orientation of the natural sciences must be fundamentally reconsidered and redetermined. The new insight leads from a substantialist view (primarily shaped by static substance) that claims to find definite initial causes, to a thinking that (in a “pre-“ or an “embryonal” sense) takes living, creative relationships as its starting point. These insights, which other sciences, too, have meanwhile adopted, put into question the meaning of ‘science’ as being taken for granted until now. This also suggests a new political use for the sciences. The needed transformation of the sciences and their structures of knowledge fundamentally require the dialogue between all cultures and religions.

### **Roots of an ethic**

This newly-gained (but already old) knowledge of the world shows us a new ethic that opens up a new future for a more comprehensive new “naturalistic” worldview and a less isolated view of humankind. A “naturalism”, as many skeptically suspect, but new in a deeply connected, open, and non-reductionist sense and in a creative, continuously newly unfolding way. Here, humankind – like nature – is not merely a “biomachine”, but in the deepest sense embedded in a “creaturely” way in a process of life that genuinely differentiates and constantly develops.

The dualism between matter and mind is thereby rendered obsolete. The alternative in the 19th century was between a “positivistic explanation of nature” and a “Christian Creator-God and world ruler”. In both systems, humankind was contrasted with nature, which he could and was permitted to subjugate, whether justified by divine destiny or by evolutionary superiority. We leave this false alternative behind us, clearly also in the sense of the new access to a consciousness of omni-connectedness, a consciousness that the natural sciences open up for a non-dualistic view of the world. This makes it possible to recognize humanity in fundamental commonality with the rest of nature, without thereby falling into a conventional naturalism or simply invoking cosmologies that may have corresponded with the worldviews and ways of life of cultures that remain close to nature.

We have every reason to ask: How is the diverse human capacity (potential) of the senses, feelings, reason, action, and good sense to be

understood and implemented in reality, the “graspable” *Wirklichkeit*? We are able to use our reason to judge our surroundings from a distance, to recognize chains of effects, and to draw conclusions about future situations and to intervene with our action. Only humans can act in accordance with a previously devised plan and with the aim of specific, self-chosen goals using calculated means – we can mentally leap over whole chains without having to expose ourselves directly to the risks we provoke. Action in this sense does not exist in nature, as conventionally understood. We humans can not only make use of these abilities to take precautions to protect ourselves; we can also set our own goals in the world that supports and threatens us. For a long time, we have known and tested far too little whether civilizational goals are compatible with the conditions of the world around us. The geo-biosphere’s balancing paths play out over time periods and in processes of change that are respectively very long and extremely complex for us humans. To the degree that our reason has provided us with tools and strategies for such far-reaching and consequential action, we humans have stepped outside of the very dense interactions in which the rest of nature lives in an unceasing interplay of changes. How can we, as a species in its many different communities and societies, behave toward the rest of the world so that we act responsibly for our own development and that of the geo-biosphere?

We rightly speak of human freedom. But how should we understand this freedom, if it is not the foolish freedom to do the wrong thing? How can we protect ourselves and, with us, the world, once we have taken a step outside of the network of conditions of co-evolution? One answer is doubtless that we use our ability to understand not only to be able to do ever more, but to learn to understand ever more comprehensively and more attentively the many conditions of the world in which we intervene with our power and the endless number of interactions between these conditions. Up till now, however, we have used our knowledge primarily to push our ability to do things ever further and supposedly less dangerously. But it is not just a matter of recognizing and avoiding this mistake.

Where the sciences, too, explain our dependencies and commonalities with the conditions of the earth as a site for life, gratitude can grow as the sustaining possibility for us and can train our sense of commonality. This gratitude expresses itself in joy at “being alive” in

life. Another answer is thus needed. Here we need to go beyond reason and, to redress its imbalances, to make use of our capacity for good sense. Good sense is humankind's mental organ for perceiving relationships complexly and for including and placing ourselves in them. If reason tries to fulfill the demand for precision, good sense proceeds with value judgments from the demand for relevance. Good sense tells us that we have freedom and are not simply bound in relationships. But in good sense it is equally clear that, in the realm of freedom, we need a specific form not only for using the world around us, but also for feeling it and answering it. This is love. With our interventions in the world, we answer our coexistence with everything else, on the one hand, and our freedom, on the other. Grasping our own existence as an answer and as a commonality out of human freedom is the feeling of love and the dedication to responsibility.

A fundamental ethic thus roots in the conditions of being human, the "conditio humana" itself. We develop binding rules out of our knowledge and our always new decisions under changing conditions. But this ethic is not normative in origin. Nor is it primarily negatively limiting; rather, it understands itself as the specifically human answers to the world's invitations. This is also the original wisdom that all religions give their own expression to. The specific way that humans have of viewing the world and of connecting with it is thus also a precious, irreplaceable contribution to evolution, to the way of the world. A world consciousness. That is why we should preserve the world also for humankind; bio-ecologically, the world would doubtless continue to bring forth ever new developments even without us; but human perception and interpretation opens up a new dimension, a mental-cultural sphere all its own.

## **V. Man and Society in Confrontation with Expanded Reality**

The mechanistic-deterministic worldview of classical physics, with its rigid ideas and reductive way of thinking, was adopted as paradigmatic for much of Western scientific and political-strategic thinking.

This world of thought did not begin with classical Newtonian physics, but for the first time it found its supposedly rational, inspectable legitimation in it – and continues to justify itself in this way to this day. The power strategies – behind which a narrow, centralistic world-

view strives to homogenize the world of thought – escalated as early as the 15th century to historically unprecedented dominance in the Western/European powers’ colonization of almost the entire known world. This was followed by the one-sided monopolization of the mental, living, and material resources of our earth by the European-molded power centers of this earth. The progressing uniformity of all ideas of value and affluence, habits of consumption and economic strategies on the pattern of a Western/American/European knowledge society is still legitimated by a way of thinking that argues for a rational objectifiability of the *Wirklichkeit* on the basis of secured scientific foundations. Where conflicts arise, a lack of instrumental knowledge is diagnosed and compensatory delivery is prescribed. The foundations of this orientation are seldom questioned, though there is reason enough to do so.

The old principles of centralistic control, violently taking control of others, and ruthlessly pursuing ends, which classical physics so successfully carried out in dealing with inanimate nature, shape the prevailing image of what humans are and of the homogeneous nation-state as well as ideas of good sense and people’s perception, the relationship to the arts, and the demands placed on logic. This reductive way of thinking manifests itself in the alleged limitation of human knowledge and judgment to exclusively cognitive competences. While the creativity of the unconscious is denied, the treasures of prelingual experience remain unused for individual development, and powerful emotional barriers can continue to exist.

Accordingly, modern societies are actually in a cold war against diversity and change, difference and integration, open development and movements to balance through risks and opportunities; a cold war against everything that is the source of living evolution in nature – down to the “pre-living” ground that sustains us and all of life.

The materialistic-mechanistic description was undifferentiatedly imposed upon the organismically structured forms and complexes of life (though initially with the exception of humankind, “created in the image of God”, or of a specially chosen group of people, among whom one counted oneself) in order to produce the fiction, so long successful in the inanimate world, of a controllable reality (which required not only a projection, but also a deformation); but this must screen out precisely the essence of the animate world. But the modern view is that life is not simply a machine, not even roughly speaking.

Additionally, modern physics, through the new technologies it made possible, was the trigger for many of the developments now threatening us. The instrumental knowledge resulting from it was used to secure the old orientations. The orientations newly emerging were screened out and hardly taken note of. The old strategies have taken us into a development hostile and antagonistic to life, into an opposition between cultures and religions and between economic regions and centers of political power. One of the clearest expressions of this is in the intrinsic momentum of today's economy, whose powerful representatives proclaim a fatalistic "*There is no alternative!*" in analogy to the strict determinism of the old mechanistic worldview and the image of humanity that accompanies it. Economic-monetary centralization and a dangerous gap in living standards and in access to public goods (water, energy, information, etc.) go hand in hand with political and civil-social instabilities and escalating potentials for conflict.

The potential of the ecological danger facing humanity in the 21st and later centuries – the destabilization of the biosphere and the destruction of closed circulatory processes, including the exploitation of existing natural resources – is probably history's greatest challenge to the organization and preservation of global reserves. The increasing risks of violent military and structural conflicts on all social, economic, and spatial levels deeply threaten the ability of human communities to act and cooperate. Conflicts over the distribution of affluence, access to public goods, and the rights of individuals and communities endanger the fundamental structures of humanity's cohesion and developmental potential. Ignored in all of these areas are the many possibilities of a living world that, in creative processes of a continuous differentiation and simultaneous or successful integration of differences (a positive-sum game), grow into an organismic, diverse form of life in which the whole is more than the sum of the parts. Which means: "*Many other worlds are possible – the future is essentially open*".

Quantum physics – and not only it – challenges us to fundamentally emancipate our currently rigidified thinking so that flexible relationships can take its place. This will lead to a loosening and gentle dissolution of the monostructural, centralistic constructions that are the primary forms of expression of the materialistic-mechanistic worldview. Precisely this clinging to outmoded, rigid ideas and modes of thoughts, against the living background of the *Wirklichkeit*, is what produces the

great problems and catastrophes today and, in a vicious circle, prevents simple solutions. Because the instruments available in the vicious circle are not adequate or suitable for breaking it apart. The one-sidedly selectionist interpretation of evolution (as a culling at the “end of the pipe”) and the existing conceptions of homogeneous nation-states collapse in the absence of mechanistic assumptions. The annihilation of all other values through the mechanism of the markets, where the strength of power (especially material-physical and structural power) demands absolute priority over development and justice, loses its liberal justification.

Continuous change is a characteristic of cultural evolution and equally a criterion of cultural sustainability. If this element is lacking, a cultural model’s rigidification to the point of collapse can be predicted. If culture-internal structures tightly bind the ability to change and to engage in a cultural evolutionary process to economic systems that are primarily attached to material prerequisites, then further cultural development can take place only within the limits of the material world. When these limits are reached, the result is cultural-evolutionary standstill. The only way to prevent this then consists in subordinating the respective economic model to the culture again: the economy must be made an instrument of the culture again, instead of having the economy instrumentalize culture to exploit the world. When this has taken place, then the economy can be changed and dematerialized to a greater extent. The quantitative economic growth of the industrial states has been linear (not exponential) for decades, so that growth rates have tended toward zero. Only a qualitative change can thus lead to new development and new employment.

## **VI. Challenges for Our Thinking and Acting**

### **Overcoming the separation between man and nature**

We must learn that, like everything else, we are not only parts of this wonderful earthly geo-biosphere, but also participants and partners, inseparably connected with it. This is also true for nature in the usual sense, which we disconnect from us and call our surroundings, materialistically perceiving in it only the provider and disposer of material and energy for human purposes. In the face of this constricted context, we



must abandon certain narrow and mechanistic strategies, reductions, and averaging, replacing them with mobility, openness, and empathy, in order to provide space for creativity and action for all. This will open for us a cornucopia of creative vitality, integrated through organismic cooperation. It provides the basis for an ever more vital and more diversely connected, powerfully innovative evolution. It is creativity, genuine in principle, in a temporally essentially open world that here bursts the seemingly indissoluble fetters and opens up an immense variety of successful styles of living. An ever more vibrant being takes the place of a rigidified affluence of possession; and the individual gains growing openness in his intense partnership and his supra-temporal, supra-spatial embeddedness in the living association of the earth. This dynamic interplay between people and their living world creates a true well-being, fostering and challenging the individual in his whole being.

We should joyfully accept this partnership in the living world and responsibly act upon it in full consciousness, in the sense of “making what lives more alive” (which is ultimately what “sustainability” means).

The phenomenon of life draws its capability for continuous creative differentiation from its “pre-living” (microphysically cognizable) primal ground, whose “information” rises, amplified through instabilities, into the meso-sphere of higher vitality, there creatively developing in richer and more intense form. Bio- and cultural-ecological diversity, with its developmental forms, i.e., its processes of change and balance, ultimately results from this context.

This must and can lead to a new kind of thinking that connects the fullness of our perceptual ability and mental movements and acknowledges both conscious and unconscious motives for human action. This indicates a new evolutionary level on which a complex perception of reality creates the foundation of our thinking, feeling, and acting. In this way, we can change our goals and strategies into patterns and movements of adapted effect.

### **Cooperative integration in a common “game”**

Our ecological, economic, cultural, social, and personal relationships with each other and with the complex geo-biosphere will change under the influence of a truly newly connected, decentralized-cooperative

thinking and express itself in new activity that can effectively stand up to our world's thus far increasing strategies of crisis and threat.

The patterns of organization and strategies of living structures and bio-complexes, grown in interaction with the moving living complex of our world and dynamically adapted and “tested” over billions of years, show us accesses and forms of behavior to organize a decentralized-dynamic, multi-celled, namely organismic interplay of living entirety on earth. The complementary and organismic interplay of what is diversely differentiated and continuously changing offers a recurring, strategically successful basis for a cooperative-constructive competition (a seeking of solutions together) – for a positive-sum game.

Here we consciously use the open term “game”, which balances conditions and possibilities in alternating steps, in place of “system”, which, despite all cybernetic refinements, still presupposes rigid structures, rather than truly flowing balances, i.e., vibrancy. For this reason, the heterogeneity of people's and cultures' needs, the variety of their traditions and historical agreements, their rituals and forms of play, but also their hierarchies and ideas of power, must be reflected in our systems of exchange, means of production, and strategies, as well as in the rules of competition and recognition. For, as a secondary life-serving consequence, the larger the pool, the greater the adaptability. The more diverse the spectrum of cultural manifestations and the more diverse the potential to adapt to changing conditions, the greater the spectrum of prospects for solutions and modes of adaptation.

Ecological and cultural diversity promotes the evolution of styles of living open to the future in communities fit for the future. To this end, we urgently need a further and also new development of the legal framework that ensures fair rules of the game and that is subject to civil societal feedback in constant discourse. The one-sided dynamic of capital, which is expressed in shifting private costs onto nature and society, must be strongly counteracted to rebalance through such agreements about the common “game”. The goal of future justice and responsibility – the goal of sustainability – must be structure-bearing and strategy-forming for cultural, social, and economic policy.

To combine diversity and vitality into the driving force of a creative process of differentiation as we experience in daily life, we must generate a dynamic procedure, changeable through interaction, of dialogue and exchange. Namely, dialogue and exchange are needed with those

who are different and with those who are socially excluded, and must be installed and constantly dynamically adapted in particular in the institutional and spatial overlappings between the cultures in all strata of life and subjected to a constant dynamic adaptation. In this way, tension and conflict can be dynamically cushioned, balanced, and shifted toward moving discourse. In mutual recognition of and familiarization with the other and by understanding how to decipher the differences in languages and forms of behavior, we can discover new accesses to the *Wirklichkeit* that are adjusted to each other, and we can develop strategies and forms of organization to work together to balance interests.

### **Decentralization and creative exchange among people**

One key to ensuring the supply of goods needed for life and the structural and institutional preconditions for socio-economic exchange is integrative cooperation between the plurality of economic exchange strategies among people, communities, and their natural environment, as well as the pattern of distribution in production, use, and supply. The development of new, decentralized and polycentric patterns of production and supply here take on special relevance, indeed priority, especially where the new orderings of the end of the twentieth century have solidified even more.

Regionally, locally, and in neighborhoods, the creative productive power must be able to unfold in familiar surroundings its life-preserving effects, which secure people and their communities independence, pride, and suitable ways of life. Economics must measure up to its local and regional socio-cultural relations, strategies, traditions, and needs if it is to do justice to needs and be sustainable, rather than falling into artificial homogenization and rigidity, which are the source of the increasing potential for danger. To this end, the greatest possible degree of decentralized supply sovereignty and subsistence must be achieved. Here, too, the cooperative interplay of market, state, and civil forces must function in cooperative integration. An essential precondition for this is an optimal and flexible complementarity between plural economies of local, regional, and continental importance, in synergy with intercontinental supply infrastructures for goods and services produced in a global division of labor. Efficiencies must also be socio-economically thought through; to be truly sustainable, direct and indirect ecological efficiencies must integrate temporal and spatial changes and differences.

Social, economic, and political processes must thereby be decelerated in order to enable regeneration, reflection, and pro-activeness in all areas and to permit an adequate dynamic stabilization.

Constraints exist only in the material limits of our site of life, the earth; the mental-cultural realm can grow with us without limits.

### **Man and earth**

Within the material limitations of our earth, we are especially dependent on and obligated to each other. The material framework conditions and the accessibility of sources and sinks in earthly nature, along with their cycles of regeneration, essentially determine the common goods.

People's coexistence with each other and with our natural environment becomes practical in the commons. Use and providing for the future must form a unity in the commons. They obligate society to a caretaking recognition of the conditions and possibilities and to a grateful respect for the other person. In the commons, people learn mutual consultation instead of hierarchical dictation; and they learn a common responsibility for the life surrounding them. Spatially and temporally, the earth's ecological foundation has the character of a community. It must not be centrally administrated or monopolized, whether privately, by the state, or on the supra-state level. It inherently belongs together, which is expressed in coexistence and interaction as well as in the balanced interplay between the connected and the permeable. That there is a tendency today for big capital to monopolize common goods must not mislead us into accepting this tendency as impossible to overcome. We humans must change our thinking in order to make use of imaginative possibilities in our activity, rather than arrogantly enforcing ecologically impossible preconditions by violence. Everyone has the same share in the totality of the common foundation of life, the earth; and where he lives and works, he has a trustee's duty – on all levels from the local to the intercontinental – toward the global common goods.

Whereby the ecological-material preconditions on earth differ greatly for different people and different cultures and are subject to great spatial and temporal changes. In the same way, the ecological embeddedness of people and cultures spans spaces and times and cannot be treated in either geographic or historical isolation. Ultimately, everyone is subject to the effects of all the interventions in the geo-bio-

sphere. Against their intention, the global economic strategies have made this consequence evident. Historically, the colonial powers claimed the living spaces around the earth as their own. Their grandiose failure toward the commonality of the earth prepared a global homogenization of models of well-being and lifestyles, ways of thinking and forms of cultural exchange. Their current successors must now accept as fact the politically and economically falsely forced unity of the world (through the reduction of the diversity of culturally different economic and social strategies and forms of organization). But such acknowledgment cannot be oriented toward the special interests of partial actors and groups in the framework of the globalization strategies prevailing today; it must grow out of our interconnected dependence on our common site of life, the planet earth. On it, we can develop in difference worth living only in common responsibility for our foundations of life and mutual dependencies and by emancipating ourselves from misguided strivings for homogeneity. The historical separations of humanity and its cultural realms in local and regional units are suspended by these ruthless interventions in the general geo-biosphere. This is happening in reality, while the new thinking in quantum mechanics is teaching us to always see the overarching contexts of what is separated.

But under these conditions, how can all people have the possibility of a share in the fullness of the entire earth, not only in their duty, but also in accordance with their contribution and their needs? Here, partnership means sharing the earth's and humanity's material and immaterial potentials for development and common goods.

To ensure global supply, with justice toward people and communities, competition – cooperative rivalry – can develop constructively and protectively only through innovation and creative productivity (but not in material tests of strength) through the use of the dynamic forces of a cooperative-dialogical interaction between the earth's cultures and people. The full, cooperative possibility for development of people and of their own particular potential in activity and work must thereby stand in the center of individual and common interest. Only in this way can a truly strengthening connection between the personal and the communal be achieved. The creative-inventive potential that is expressed in the individual particularity of one's own path increases the stock of ideas and developments for a variety of styles of living and of

new and further developments of what already exists; it is thus of irreplaceable value.

In this way, the high productive potential of human creative activity is realized, also economically, in a positive-sum game that enriches all.

### **The future grows from dynamic diversity**

The knowledge of cultural diversity, the fullness of our continuously growing treasure of information and creativity, and the diversity of different ethnic groups' and nations' accesses to reality are common goods to be protected, though in their own special way. We want to reach a state in which we no longer administer scarcity with ever more compulsive strategies, but in which we shape a diverse future in consciousness of the possible fullness. Where today we continue to narrow our freedom of action, being human in the truest sense can grow out of cooperative interplay in the diverse commonality of cultures, people, and styles of living.

## **VII. What Can We Learn From This and What Can We Do?**

### **Deepening consciousness**

The fatalism of an ever narrower mechanistic thinking turns out to be ideology. The mentally-living Wirklichkeit is inherently open; it proves to be more complex and dynamic, more creative and playful. In this way, in the 21st century, new paths are opening up to expand our perception of the Wirklichkeit and to let us recognize our own life, our individual path, and our creative power as meaningful, connected, and important for the future.

For science, this is not only an increase in instrumental knowledge, but essentially also a deepening orienting knowledge. Because of its direct, deeper insight, we humans know or intuit our complete, sensitive embedding in the geo-biosphere that supports us and our responsibility and duties toward present and future life. Orienting knowledge must be followed by a new instrumental knowledge that flexibly, changeably, and adaptively promotes the evolution of life. The organization and ensuring of changeable patterns of decentralized supply and

governance structures can learn a great deal from the interplay of ecological complexes, which the living nature of earth, tested for billions of years, demonstrates. Here, the constructive and evolutionarily dynamizing interplay between a great number of different strategies, material circulations, and forms of life can be vitally learned. Here is an important transdisciplinary and intercultural task for science, for thinking, and for human society.

The “new” thinking must be broader and more open, just as epistemic knowledge had to broaden and open up to be able to constructively take up modern scientific insights. In engaged dialogue, we are accustomed to going beyond the limits of our accustomed thought without leaving our interlocutor behind in incomprehension. So there is no doubt: A new thinking can start only from truly individual people, from homo sapiens in his full, emotional and mental constitution. It demands a deepening of our consciousness. It is not so much inability in principle, but rather loneliness and smoldering fear that prevent people from exploring their own consciousness. Today, few people speak of the mental/emotional poverty of people in the highly-developed, industrialized countries, who no longer find time for themselves in the bustle of daily life and who seek to suppress awareness of their spiritual neediness through increased material consumption and expanding security measures against external dangers. While in many parts of the world, the inventive energies of people must be liberated from the constraints of rigidified communities and cultural dogmas, modern individualism, which historically made individuality possible, is degenerating into a dismal isolation and fragmentation of the commonality.

But how should this process of people’s self-alienation be halted, and how should their self-confidence and self-trust be strengthened? How can an enlivening of our life forces overcome the fear of change, which has already become a fear of life? We urgently need vibrant examples. These are not only teachers or spiritual leaders to guide other people on specific paths; rather, all of us are also insightful people who can remind each other of the capability inherent in us that has already been successfully lived in many lives since primeval times. It is only waiting to be re-awakened and to become creatively effective through us. As a species, we can avail ourselves of it in a common dialogue and a learning culture of mutuality.

The societal institutions to support these life stances must grow out of and be strengthened by this shared conviction. In comprehensive treaties, the constitutions of democratic societies, the supra-state agreements of the peoples of the world, the core messages of all world religions and cultures, and also in the new global, civil-society initiatives (like the Earth Charter), we find attempts to put these commonalities into words. Different are only the languages in which it is expressed and the parables used to illustrate it. Their diversity produces the differences and uniqueness of their approaches and situations. And this expresses itself also in different interpretations. But they are not incompatible in their contradictions; rather, they reflect above all the inadequacy of conceptual languages and our limited ability to learn from and with each other.

### **Freedom and participation**

It is high time to implement a new thinking in a new activity and, learning, to avail ourselves of the power of the differentiated, moving, and self-changing. To this end, parallel new institutional, individual, and societal developments are necessary. The current strategies for the economic, political-cultural, and ecological interplay between people are dominated by centralized power structures that we can and should replace.

The goods necessary for human life are common goods. They range from material to immaterial basic provisions of life. The immaterial basic provisions needed to ensure the possibilities of individual and cooperative development include: political and social participation on a level as close as possible to those involved (subsidiarity); comprehensive political contribution from everyone in their respective competencies; the strengthening of local decision-making processes; and the institutional and infrastructural preconditions for emotional and spiritual development. This applies to education; training; the opportunity to share in humanity's pool of knowledge and information; art; play; communication; the opportunity for creative development and for social, cultural, and political community work; the opportunity to share in life-serving achievement, in work; – in everything that supports individual development in community and that essentially lifelong learning to promote a constructive openness to the world., and no longer power interests. But the preconditions thus assured must still be taken advan-



tage of, in joy over one's own effectiveness, in life activity as the expression of personality. All children enter life with this drive; it does not need to be taught. But our societies, each in its own different way, channel these energies in ever narrower pathways and destroy their primal force and vitality.

Highest priority must go to all initiatives that strengthen the responsible, co-liberal person. History teaches us that fundamentally healthy and successful societal structures decline and die if they lead to an increase in centralization. The basic precondition for the thriving development of a society is adequate freedom for the creative individual to develop his abilities. For only this makes possible the differentiation essential to and necessary for a living society. But – and this must be emphasized again and again – differences are advantageous to a community only if they are simultaneously constructively and cooperatively, i.e., organismically, integrated with others: The greater flexibility thus gained then also provides greater adaptability to changed or unforeseen future living conditions. This demands from the individual responsibility toward the community and participation commensurate with his particular abilities in responding to common problems and challenges.

This combination is mirrored in essence in the demand for “freedom and democracy”, but only when freedom is understood as the best possible development and strengthening of the personality in *harmony* with the freedom of others, and only when democracy is understood as the dedicated, active, and responsible participation of all in shaping the community, starting in the places where we live. (This means much more than formal voting rights as practiced in democratically-constituted states, which offer no possibility of a truly relevant selection). In this way, the liberal and social components do not work against each other, but are constructively related to each other: freedom and democracy must be seen as an inseparable unity. We need individual initiative in societal responsibility toward other people, but also toward our surrounding world. This prevents the one-sided exaggeration of one or the other quality that derails human society.

## Steps in the new orientation

This can be shown in many examples. For example, the economy's formal emphasis on maximum efficiency in the allocation of resources, a pillar of economic globalization, leads to artificially homogenized and monoculturally reworked living spaces and to people's maximum dependency on external factors they cannot influence, though they are not inherently fixed, but merely increasingly negatively provoked. This view of efficiency, extremely narrow even in economic terms, ignores a sore loss of freedom and the accompanying possibilities of personal development for the people affected, a hindrance to their creativity through the acceleration of all the processes in the environment, and not least a greater burden on the biosphere. There is no question that, all in all, such an "optimization of allocation" does not even add up in economic terms, if we consider the person and his development and the society in its cooperative living together – not to mention the consequences for the ecology, i.e., for a necessary prudent harmony with the rest of nature. All too often, such decisions are not even based on short-sighted criteria of efficiency, but simply on the desire to increase power over others.

When we consider the escalating problems burdening humanity today, we see that they result from an extreme concentration of power and from economic inequality, directed and promoted by a financial network hostile to life that has degenerated into an insatiable end in itself, instead of strengthening the network of relations between people on behalf of people. The uncoupling of the unlimited growth of monetary capital from the spatially and materially limited earth drives this mechanism forward. The liberalization of the traffic in capital has today enabled capital to force the states to support its claims to eternal growth through a doubled redistribution "from the bottom to the top": through the flood of compound interest and through refuge from the burden of taxation. Both together have meanwhile widened the gap between the income and fortune of the few at the top and of the many below. Too little remains of the distributable, producible values to finance the community and to adequately reward joyless and unsatisfying occupational work. The resulting uprooting and lack of freedom of a growing number of people who, robbed of their dignity and the possibility of shaping their lives on their own responsibility, will and must radically demand a change.

It is necessary to build up polycentric economic structures that complement each other. Monetarily oriented market-economic institutions must be connected with civil-societal social, cultural, and subsistence-economy initiatives and institutions in mutual enrichment. Parallel to this, decentralization and variance in economic, political, and socio-cultural institutions should be supported by flat, transparent hierarchies within their decision-making bodies. To this end, the monopolistic power structures concentrated in a few companies must be reduced in favor of a diversity of economic enterprises borne by the market and by civil society. Their cooperative interplay must be politically, juridically, and infrastructurally ensured on all levels, from the local to the intercontinental. For a complementarity of plural local, regional, and intercontinental economic strategies, institutions must be created and strengthened that will institute and supervise the global framework conditions on all spatial and temporal levels. The spatial and temporal externalization of ecological, socio-economic, and cultural burdens and costs must be stopped. Closed process cycles must be realized wherever no (almost) inexhaustible source is available (for example, the sun as energy provider). A “deceleration” of economic, social, and ecological processes is necessary to make regeneration cycles and creative differentiation possible. All of these processes urgently require a reform of international financial systems and flows. Unlimited monetary growth in a limited world increasingly uncouples economic processes from their finite ecological and socio-cultural foundations. The international money supply must urgently be stabilized and dynamically steered to economic activities that promote the improvement of the quality of life and global supply.

To reduce or avoid the dangers and risks of warlike conflicts, we must promote our abilities to work out conflict with reduced violence and create the preconditions to make peaceful and cooperative interplay possible and easier. To prevent a catastrophic scenario in the conflict between *Homo sapiens* and the natural environment – the destabilization of the geo-biosphere – we need an ecologization of economic processes and strategies of production.

The complete disarmament of all weapons of mass destruction (nuclear, chemical, and biological), the reduction of conventional weapons, and the containment of arms trading are urgent for ethical reasons, but also for purely economic reasons. A strengthening and furthering of intercultural and interreligious dialogue and of civil-societal forces and institutions is indispensable for the successful processing and regulation of intercivilizational conflicts. Respecting the many kinds of tolerance limits of the dynamic stabilization of the geo-biosphere, of the resilience of the natural foundations of life, and of their cycles of regeneration is the precondition for surviving in the future and for peace among humankind. This must be reflected in the creation of closed economic cycles of production and materials, the minimization of ecological risks, and the internalization of ecological burden-externalization – a strategic orientation toward the paradigm of what is alive.

### **VIII. Difficulties and possibilities of the transition**

*“How can you buy or sell the sky, the warmth of the land? The idea is strange to us. If we do not own the freshness of the air and the sparkle of the water, how can you buy them? [...] All things are connected. Whatever befalls the earth befalls the sons of the earth. Man did not weave the web of life: he is merely a strand in it. Whatever he does to the web, he does to himself”*

These words are said to be part of a letter that See-at-la, or Seattle, Chief of the Duwamish, wrote in 1855 to the 14th President of the United States, Franklin Pierce – 100 years before Einstein and Russell called for a new way of thinking and 150 years before we set out to put this search in new words once again. If we look where our thinking and knowledge leads, we realize that here circles reconnect again.

### **How can an evolutionary, nonviolent transition succeed?**

We are confronted with the difficult demand for an evolutionary, non-violent transition. After having the wrong orientation for so long, we wonder how this is possible. Encouraging models are still to be found in traditional cultures, their wisdom, and their knowledge; but they have to be re-thought and adapted to the modern situation. Current sciences also do this, but they are not sufficiently developed in this direction. Fundamental to an optimism that this will ultimately succeed is thereby

the fact that the ability to provide appropriate answers to the opportunities and challenges of evolution has remained subliminally present in us humans and in the capability of our existence; it merely requires more decisive attention and fostering. We can successfully make these demands only as a common humankind, i.e., not against or in ignorance of each other, but with each other in a dialogue among the cultures in which we compare all of our differently developed potentials and set them in complementarity. To this end, we need the free development of all cultures – which we desire anyway.

Our demands, however, encounter a doubly difficult situation of the nations. While the highly technologized countries must find other paths to affluence and well-being than those that modernity has thus far revealed and imposed upon them as successful, precisely these problematical strategies exert an increasingly powerful attraction on all who hope to gain the same opportunities from them. The incentives for this are still in place and hinder change. And ultimately, this is not “unnatural”, because all of animate nature is again and again exposed to the danger of plunging into the more stable shapes of the inanimate. This cannot be prevented once and for all. Suffering and failure in the process of transition are part of life. The goal must be to limit the damage caused by a possible fall. The varying needs and abilities to shape that are found around the world must lead to a diversity of well-considered solutions. The diverse, culturally completely new modernities must design their own paths from their respective preconditions and, in exchange with each other, test how problematic strategies can be altered cautiously, i.e., in full consciousness of the preconditions and opportunities of old and new processes of balance. Still-living traditions of wisdom will thereby develop new influence; and changed, greater demands must be placed on the scientific-technological world.

The primary questions facing us today are not how sustainable forms of life can be created. Nature has no recipes for surefire or rapid success. Success is rather the result of games that are tested and work out over generations, but which are not based on pure chance, but on their deep connectedness. The biosphere shows us that this open, positive-sum game of living has uncountable winners, and not just a few, as we might expect when we compare the game of our economy, which follows completely different rules in a zero-sum or even negative-sum game (with winners and losers and a predominance of losers). We hu-

mans are not freed from working out ethical rules that foster individuals, including the weak, as members of the community. Such rules must be adapted to changing conditions in mutual trust among all participants, and thus must themselves continually change. Accordingly, we must support the interplay of the bio-system, the earth, with genuine human means.

If we continue to “tilt” our common playing field of life through unrestrained striving for power, robbing the majority of people and a great part of the creatures on the earth of all moorings, our problems will grow into a catastrophe. This will be a catastrophe above all for us people, and not for the rest of nature, because it can live without people, but we cannot live without it. We must do everything to put the playing field back in a state in which all can play their own games decentrally under comparably favorable conditions and, additionally, can communicate and cooperate in friendship across all borders. What has a future will show itself in many ways in successful results in the innumerable different games and will determine the living future of humanity in its complementary commonality.

### **I am life**

The ground on which this new sustainable, organismic cultural diversity is to grow has been well prepared. For why do political and economic decision-makers invoke freedom and democracy, when most of them seem to have abandoned this trust in a fundamental commonality? Because they secretly know and feel that deeply anchored in people’s hearts is the longing to strengthen their own physical, emotional, and spiritual abilities and to further develop their personalities; and this is possible only in relative freedom. But the great majority of people do not want to use their empowerment against others who are trying to do similar things, but rather, together with them and motivated by the deeper connection, to create a more comprehensive commonality on a higher level. A new, but in truth long-proven view of the human beings is becoming visible, one that assumes a person capable of love and empathy. We should not be misled by the excesses of our modern civilization. The human being is capable of much more than being an aggressive, avaricious “wolf” (in Thomas Hobbes’ sense): freedom to strengthen oneself, not for the sake of victory in struggle against the others, but responsible for strengthening one’s own contribution in fa-

vor of the whole. Co-liberality is needed to achieve an optimal, vibrant coexistence in the sense implied by Albert Schweitzer's remark, "*I am life that wants to live, amid life that wants to live.*"

All this may sound unachievably utopian. But we should remember: The mere fact of our existence as people today should show us that we are the successful result of a similar development that has already gone on for billions of years. We must continue to create new knowledge that allows more vibrancy to flower. We can trust that this power is effective in us. For omni-connectedness, which we can call love and which germinates from vitality, is inherent in the core of us and of everything else.





# POTSDAM MANIFESTO 2005

**“We have to learn to think in a new way“**



“We have to learn to think in a new way“

Faced with the worldwide dangers of nuclear wars, Bertrand Russell and Albert Einstein issued fifty years ago a manifesto calling on us, humankind, for a new way of thinking to ultimately ban war as strategy of conflict resolution.

In the meantime, it has become obvious that military power strategy, with its preliminary culmination in weapons of mass destruction, is only one of much more far-reaching and deeper-based power strategies. We are experiencing an escalation of structural violence with political and above all economic components. Geopolitical, socio-cultural, and economic power strategies and the unlimited expansion of a globalized market economy, with its compulsions to produce, threaten and destroy the spatial and material limits of our earth. The destructive effects of an unrestrained and unreflected civilization on the coexistence of nations, on the interrelations between society and nature, and not least on individual people are obvious.

For centuries, the predatory exploitation of people and nations and of nature was perceived as a side effect, even worse, as an admissible evil. Hopes for and successes in the development of better and extravagant prerequisites for an easier life and the consequential far-reaching appropriation of the world disguised the direct victims and the creeping devastation that were already tied to the early phases of such power. Today it is obvious that the one-sided implementation of these successes to the advantage of the European/North American initiators of the new civilization and of their imitators around the world amounts to a cold war against everyone and everything that can be turned into resources to increase this material appropriation or that what seems to hinder this appropriation. Particularly threatening thereby is an accelerated destruction of the bio-ecological diversity of whole complexes of life, to a degree seemingly unique in the history of the earth. But also the diversity of human ways of life and the treasure store of the cultures is similarly being irreversibly reduced, and in this process the spectrum of possible strategies and lifestyles and future developments. Conflicts over the distribution of affluence, over the opportunities for access to

public goods, and over the rights of individuals and communities endanger the fundamental structures of humankind's cohesion and ability to develop.

This wide variety of crises today confronting us and threatening to exceed our ability to cope are the expression of a mental crisis in the relation between us humans and our living world. They are symptoms of deeper causes that we have thus far neglected to seek and reveal. They are closely connected with the materialistic-mechanistic world-view favored all over the world today and with its prior history.

Our deep worry that we, as members of the species *homo sapiens*, are increasingly reducing the living diversity of our earth and of our creative developmental possibilities, thus irreversibly endangering our survival in peace and our mutual exchange gives us the courage, and our awareness that we have to take new paths gives us the occasion, to compose this manifesto.

We must expand our thinking and fundamentally correct our current behavior. We believe that precisely the revolutionarily expanded insights of the new physics could thereby provide a helpful starting point for a release and solution of the problems, since they permit by their opening a new orientation. This will be *our* approach. But it is intended to serve as a catalyst to stimulate others to a new way of thinking.

## NEW ORIENTATION

The insights of modern physics – of quantum physics – suggest a new interpretation of the world that carries us beyond the materialistic-mechanistic worldview. Instead of the world assumed until now – a mechanical, temporally determined “reality” of objectifiable things, the real *Wirklichkeit* (a world that effects) turns out to be basically “potentia-*lity*”: an indivisible, immaterial, temporally essentially indeterminate and genuinely creative bonding of relations that determines only “can”-probabilities, a differentiated potential for a material-energetic realization. The *Wirklichkeit's* fundamentally open, creative, immaterial omniconnectedness permits us to regard the inanimate and the animate world as merely different – statically stable respectively open and statically unstable, but dynamically stabilized – articulations of an all-embracing “pre-living” cosmos.

The immaterial, information-bearing, pre-living interconnections prevailing in the micro-world are only indirectly operative on the meso-level of our world of experience. Usually they average out and, in this “diffused” form, express themselves in the familiar, “classical” behavior of inanimate nature. Instability, however, functions like an enormous amplification factor, preventing averaging: Animate nature draws its ability for continued, creative differentiate and cooperative integration from its “pre-living” (microphysically recognizable) primordial ground, whose “information”, through instabilities, rises enhanced into the meso-sphere, where it unfolds in more intense and richer form. The “pre-living” realm thus organizes itself in the complex variety of our “higher” bio-ecological vibrancy, as we encounter it in everyday life. Cultural-ecological variety and its developmental forms, i.e., its processes of transformation and balance, ultimately also results from this context.

This new viewpoint also opens up the opportunity for us humans to recognize and believe in the genuineness and not merely imaginary quality of creativity and the gift of intentional action in relation to the community. This way of looking at the world provides the basis for our striving for freedom and individualization and allows us to be different, without losing the underlying omni-connectedness. This is expressed in a well-developed tendency to “organismically” contribute our specially developed abilities to a higher whole in cooperation with others.

## NEW THINKING

*“We have to learn to think in a new way.”* If we take this call radically seriously, we have to take new or unaccustomed paths of learning. From this new viewpoint, the world – the *Wirklichkeit* – no longer appears as a theoretically closed system. This leads to an inherent indeterminism that results from the fundamental indivisibility and that is expressed in an inherent limitation of the “knowable”. Strictly speaking, we are thus forced to speak about the *Wirklichkeit* only in parables and analogies. There are in principle no longer answers to all the questions that, from a human standpoint, we believe we can pose, because the answers go nowhere.

The individual person, like everything else, is in principle never isolated. In our only seeming smallness within the omni-connected commonality we are equally involved and significant in an infinite vari-

ety of ways. The variety of influences and impulses of other people and of our geo-biosphere has a part in all our actions, and not only via the bridge of material-energetic interactions mediated by our senses, but also directly through the immaterial, potential connectedness common to us all. Our action influences in equal measure the entire composition of our society and changes the constantly dynamically shifting potentiality of the living *Wirklichkeit*. Thus, the uniqueness of the individual is a carrying component of the process of our common cultural evolution.

We humans and human communities, with our cultural worlds of ideas, our mental processes, and our moving exchange, represent a special, deeply connected sphere of the living world. Pre-livingness is a characteristic of everything, including the world of things, which is usually regarded as “dead”. We have to acquire a fundamentally new way of thinking and a more comprehensive understanding of our *Wirklichkeit*, in which we, too, see ourselves as a thread in the fabric of life, without sacrificing anything of our special human qualities. This makes it possible to recognize humanity in fundamental commonality with the rest of nature, without thereby falling into a conventional naturalism or simply invoking cosmologies that may have corresponded with the worldviews and ways of life of cultures that remain close to nature.

The materialistic-mechanistic worldview of classical physics, with its rigid ideas and reductive way of thinking, became the supposedly scientifically legitimated ideology for vast areas of scientific and political-strategic thinking. The progressing uniformity of all ideas of value and affluence, habits of consumption and economic strategies on the pattern of a Western/North American/European knowledge society is still legitimated by a way of thinking that argues for a rational objectifiability of the *Wirklichkeit* on the basis of secured scientific foundations. Where conflicts arise, a lack of instrumental knowledge is diagnosed and compensatory delivery is prescribed. The foundations of this orientation are seldom questioned, though there is reason enough to do so.

Modern societies are in a cold war against diversity and change, difference and integration, open development and movements to balance through risks and opportunities: a cold war against everything that is the source of living evolution in nature, and with it in us – down to the “pre-living” ground that sustains us and all of life.

This ignores the many possibilities of a living world that, in creative processes of a continual differentiation and simultaneous or subsequent integration of what is different (a plus-sum game), grow into organismically more diverse forms of life, in which the whole is more than the sum of its parts in a very comprehensive and differentiated sense.

Continuous change is a characteristic of cultural evolution and equally a criterion for cultural sustainability. If this is lacking, a cultural model's rigidification to the point of collapse is preprogrammed. If the ability to change, to take part in a process of cultural evolution, is rigidly attached to economic systems via culture-immanent structures and if these economic systems are tied to material preconditions, then the culture can develop further only within the limits of the material world. When these limits are reached, this leads to a cultural evolutionary standstill and ultimately to dropping out of the dynamic evolution of life.

Quantum physics – and not just it – challenges us to emancipate our thinking from rigid structures so that flexible relationships can take their place. It becomes possible to loosen and gently dissolve the monostructural, centralistic constructions, forms of expression preferred by the materialistic-mechanistic worldview. The destruction of all values through the mechanisms of the markets, where strength in the form of power demands absolute primacy over development and justice, loses its liberal legitimation once and for all. The new way of thinking merges the fullness of our perceptual abilities and mental movements; conscious and unconscious motives for human thinking and action are equally acknowledged; Here, a new evolutionary level is emerging in which a complex, unfragmented perception – an intimation (a sort of 'Ahnung') – of *Wirklichkeit* is the foundation of our thinking, feeling, and acting. In this way, we can transform our goals and strategies into patterns and movements of adapted action.

Learning urgently needs living examples. But teachers and spiritual leaders are not the only ones who show us paths. We all have insights with the capability to remind each other of the potential inherent in us and on whose basis many lives have been successfully lived since primordial times. In a common dialogue, in a learning culture of mutuality, we can learn to draw on it as a species. The organisation of patterns and forms of living structures and bio-complexes that have grown in interaction into the moving life-complex of the earth and that have been

dynamically adapted and “tested” over billions of years, indicate to us accesses and forms of behavior to organize a decentralized-dynamic, many-celled, organismic working together of the living entirety on earth.

We learn that we, like everything else, are participants inseparable connected with this wondrous earthly geo-biosphere.

## **NEW REQUIREMENTS**

We have to abandon narrowed and mechanistic strategy patterns, reductions, and averaging and replace them with mobility, openness, and empathy in order to make openly malleable spaces for creation and action possible. This will open for us a cornucopia of genuinely creative vibrancy, integrated through organismic cooperation. Inherently genuine creativity in a temporally essentially open world is what will here burst the seemingly indestructible fetters and open up an immense variety of successful lifestyles. An ever more vibrant being, a continuous becoming can take the place of a rigidified affluence of possessing. The individual gains increasing openness in his intense participation and through his embedding, across time and space, in the living, interlocking system of the earth. This dynamic interplay among people and between people and their living surroundings is what will create the first real well-being and challenge and foster humankind’s entire being.

It is urgently necessary to enable an integrative cooperation among the diverse economic exchange strategies among people, communities, and their natural surroundings as well as among the patterns of distribution in production, use, and supply, in order to ensure the provision of the necessities of life and the structural and institutional prerequisites for socio-economic exchange. The development of new decentralized and polycentric structures of production, supply, and decision-making has special relevance – indeed priority.

Economics must be measured against local and regional socio-cultural relationships, strategies, traditions, and desires if it is to do justice to what is needed and to be sustainable, rather than falling into artificial homogenization and rigidification that develop an increasing potential for dangers. To this end, the greatest possible degree of decentralized initiative to achieve, of supply sovereignty, and of subsistence are needed. This simultaneously demands a global networking and an elas-



tic compensation through the supply of goods with global relevance. An optimal and flexible complementarity between plural economies of local, regional, and continental significance, in synergy with intercontinental infrastructures for the exchange of goods and services produced in a global division of labor, is an essential sustaining prerequisite for this.

The material framework conditions and the accessibility of limited sources and sinks in earthly nature and their regeneration cycles substantially determine the communal goods. This is why the ecological foundation of the earth has the character of a spatial and temporal community. It must not be further centrally administered or monopolized, neither privately, nor by the state, nor by a supra-state body. Everyone has the same share in the totality of the earth's communal foundations of life and, where he lives and acts, has local to intercontinental "trustee" obligations toward the global communal goods. The limitations are only given by the material limits of the place we live, the earth; the mental-cultural space can grow multifariously with us.

## **NEW ACTION**

It is high time to implement new thinking in new action and thereby to use the power of the differentiated, the moving, and the changing for ourselves in a learning way. To this end, parallels between new institutional, individual, and societal developments are necessary. The current strategies for humankind's economic, political-cultural, and ecological interaction are still dominated by centralized power structures that we can and should replace.

The construction of polycentric economic structures that complement each other is needed. Monetarily-oriented market economy institutions must unite with civil-societal social, cultural, and subsistence-economic initiatives and institutions in mutual enrichment. In parallel, decentralization and differences among economic, political, and socio-cultural institutions must be supported by adopting flat hierarchies in their decision-making bodies among those carrying out these decisions. To this end, we need a reduction of the monopolistic power structures of a few companies in favor of a variety of economic enterprises – both those borne by the market and those borne by civil actors. Their cooperative interplay must and can be politically, legally, and infrastructurally ensured from the local to the intercontinental level.

To ensure global supply worthy of human beings and communities, competition, i.e., cooperative rivalry, can develop in a fostering and protective way only through innovation and creative productivity, while using the dynamic driving forces of a cooperative-dialogical interaction among the cultures and people of the earth. Dialogue and exchange must and can be installed in all layers of life, particularly in the institutional and spatial overlaps between cultures, and must constantly dynamically adapt. In this way, tension and conflicts can be dynamically absorbed, balanced, and diverted into moving discourse.

The creative-inventive potential that is expressed in the individual peculiarity of one's own path increases the richness in ideas for and development of a variety of lifestyles and of new and further development of what already exists; it is thus of irreplaceable value. The high productive potentiality of human creative action thus also pays off economically in the sense of a plus-sum game enriching everyone.

The economy's formal emphasis on maximum efficiency in the allocation of resources – a pillar of economic globalization – leads to artificially homogenized, monoculturally reshaped living spaces and people's maximum dependence on external factors they cannot influence. These are not inherently fixed, but are negatively provoked in escalation. When we consider the escalating problems currently burdening humankind, they are almost wholly a consequence of the concentration of power and of economic inequality, controlled and pushed by a financial network hostile to life that, instead of strengthening the network of relations between people on behalf of people, has degenerated into an insatiable end in itself. The uncoupling of the unlimited growth of monetary capital from the spatially and materially limited earth helps drive this mechanism. The international money supply can and must urgently be stabilized and dynamically steered into economic activities that augment the quality of life and global supply. The prerequisite for our survival and for peace among humankind is compliance with the many tolerance limits of the geo-biosphere's dynamic stabilization, of the limits of the robustness of our natural foundations of life and their regeneration cycles. This must find its correspondence in the creation of closed production and material cycles, a sustainable consumption of energy, the internalization of ecological externalizations, and the minimization of ecological risks.

This means a strategic orientation toward the paradigm of what lives.

## **WE ARE LIFE**

If we continue to “tilt” our common playing field of life by unrestrainedly striving for power, so that the majority of humankind and a great part of all living creatures are slipping off, our problems will grow into a catastrophe.

But the ground on which a new, sustainable organismic cultural variety grows is well prepared. A new and yet familiar image of humankind is emerging, originating from empathic people. The confrontations and distortions we daily experience in our civilization should not allow ourselves to be led astray. Our existence as human beings today shows us that we, too, are the successful result of a similar development that has already gone on for billions of years. Our confidence is not unfounded. We must create new knowledge and act in such a way that liveliness increases and flourishes diversely. We can trust that this power is active in us. For omni-connectedness, which we can also call love and from which life springs, is fundamentally inherent in us and in everything else.



## SIGNEES

21/7/2007

*(The signing was opened at the 10<sup>th</sup> of August 2005)*

- 1) **Prof. Dr. Ibrahim Abouleish**, Alternative Nobel Prize/Right Livelihood Award 2003, SEKEM; Cairo/Egypt
- 2) **Dr. habil. Stephan Albrecht**, University Hamburg, Special unit for Technology Assessment on Biotechnology, TA Research-Group on Agriculture and Plant Breeding, Board Federation of German Scientists (VDW); Husum/Nordsee/Germany
- 3) **Prof. Dr. Mamoru Adachi**, Director, The Nagoya University Museum; Nagoya/ Japan
- 4) **Prof. Hans Peter Adamski**, Artist, Dean for Fine Art, Academy for Fine Art Dresden; Berlin/Germany
- 5) **Michèle Victor Adamski**, , Management for culture & fine art, Writer, Aladdins Children – Charity Association for children in Afghanistan; Berlin/Germany
- 6) **Annelies Allain**, Member of International Baby Food Action Network (IBFAN), Alternative Nobel Prize/Right Livelihood Award 1998; Malaysia
- 7) **Prof. Dr. Dr. Günter Altner**, Biology, Theology, Ecology; Heidelberg/Germany
- 8) **Prof. Carmen R. Balbi**, Pontificia Universidad Catolica des Peru, Department de Ciencias Sociales; Lima/Peru
- 9) **Prof. Dr. David Barkin**, Economy, Universidad Autonoma Metropolitana-Xochimilco; Coyoacan/Mexico
- 10) **Mario Behling**, Cultural Sciences, Blogger; Frankfurt a.d.O./Germany
- 11) **Ralf Bendrath**, Political Science, University of Bremen, The Collaborative Research Center 597 ,Transformations of the State'; Bremen/Germany

- 12) **Dr. Rosalie Bertell**, Environmental Epidemiology, Alternative Nobel Prize/Right Livelihood Award 1986, UNEP Global 500 Laureate, President of the International Institute of Concern for Public Health (IICPH), Science Oversight Committee of the U.S. National Association for Public Health Policy; USA
- 13) **Prof. Dr. Adelheid Biesecker**, Department of Economics, University of Bremen; Bremen/Germany
- 14) **Prof. Dr. Marita Bombek**, Institute for Art and Arttheorie, Faculty of Education, University of Cologne; Cologne/Germany
- 15) **Dr. Maria Borovnik**, Development Studies, School of People, Environment and Planning, Massey University; Palmerston North/New Zealand
- 16) **Dr. Grazia Borrini-Feyerabend**, Chair TGER (IUCN/CEESP), Co-chair TILCEPA (IUCN/CEESP/WCPA); Bugnau/Switzerland
- 17) **Julia Brugger**, International Economics and Cultural Studies, Sustainable Development Forum; Brussels/Belgium
- 18) **Prof. Dr. Christiane Busch-Lüty**, Economy; Munich/Germany
- 19) **Prof. Joseph A. Camilleri**, Golden Wattle Peace Award 2004, International Relations at School of Social Sciences, La Trobe University Victoria, Australia, Head International Advisory Board of the World Public Forum: Dialogue of Civilisations; Rhodos/Greek, Moscow/Russia, New-Dehli/India
- 20) **Wolf-Michael Catenhusen**; Berlin/Germany
- 21) **Dr. Zafrullah Chowdhury**, Alternative Nobel Prize/Right Livelihood Award 1992, Gonoshasthya Kendra People's Health Centre; Bangladesh
- 22) **Dr. J. Daniel Dahm**, Geography, Ecology; Berlin/Germany
- 23) **Prof. Fred Dallmayr**, South Bend, University Notre Dame, Department Government and Philosophy; IA, USA
- 24) **Sonam Dawa**, Executive Director, Ladakh Ecological Development Group, Karzo Leh Ladakh; Jammu and Kashmir/India
- 25) **Dr. Gottfried T. W. Dietzel**, Federation of German Scientists (VDW); Meckenheim/Germany

- 26) **Prof. Dr. Dr. Hans-Peter Dürr**, Alternative Nobel Prize/Right Livelihood Award 1987, Former Director of the Max Planck Institute of Physics, Global Challenges Network, Board Federation of German Scientists (VDW); Berlin, Munich/Germany
- 27) **Prof. Dr. Tewelde Gebre Berhan Egziabher**, Alternative Nobel Prize/Right Livelihood Award 2000, Environmental Protection Authority; Addis Ababa/Ethiopia
- 28) **Dr. Henner Ehringhaus**, Board GLS Gemeinschaftsbank, Weleda AG, New Energies Invest AG, Board Federation of German Scientists (VDW); Berlin/Germany
- 29) **PD Dr. Rolf Elberfeld**, Philosophy; Berlin/Germany
- 30) **Dr. Günter Emde**, Mathematics; Pittenhart/Germany
- 31) **Prof. Samuel S. Epstein**, Alternative Nobel Prize/Right Livelihood Award 1998, Professor of Environmental and Occupational Medicine, University of Illinois at Chicago School of Public Health, and Chairman, Cancer Prevention Coalition; Chicago/USA
- 32) **Dr. Jejel Ezzine**, Ecole Nationale d'Ingénieurs de Tunis (ENIT); Tunis/Tunisia
- 33) **Annegret Falter**, General Secretary of the Federation of German Scientists – VDW; Berlin/Germany
- 34) **Dr. Hans-Jürgen Fischbeck**, Physics; Joachimsthal/Germany
- 35) **Annika Flensburg**, Women's human rights activist; Stockholm/Sweden
- 36) **Antje Förstle**, solarafrika.network; Zanzibar/Tanzania
- 37) **Dr. Naika Foroutan**, Political Science, Rave-Prize, University Göttingen; Berlin/Germany
- 38) **Katja Friedrich**, Lawyer; Berlin/Germany
- 39) **Klaudius Gansczyk**, Director of Studies, Council of the Society of Intercultural Philosophy; Ennepetal / Germany.
- 40) **Prof. Dr. Bob Goudzwaard**, Economics & Social Philosophy of the Free University of Amsterdam; Amsterdam/Netherlands
- 41) **Jonathan Granoff**, Lawyer, President of the Global Security Institute, Senior Advisor of the American Bar Association's Committee on

- Arms Control and National Security, Vice President of the NGO Committee on Disarmament, Peace, and Security at the UN; USA
- 42) **Prof. Dr. Hartmut Graßl**, Former Director of the Max Planck Institute for Meteorology; Hamburg/Germany
  - 43) **Kerstin Grebäck**, Women's human rights activist; Stockholm/Sweden
  - 44) **Prof. Dr. Heinz Häberle**, Former Chairman of board of DLR – German Aerospace Center; Herrsching/Germany
  - 45) **Hermann Graf Hatzfeldt**, German Council for Sustainable Development (RNE), Chairman Forest Stewardship Council (FSC); Crottorf/Germany
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  - 48) **Prof. Dr. Hazel Henderson**, Economy, Futurist, Sustainable Development Consultancy, Syndicated Columnist, Calvert Social Investment Fund (CSIF), Washington D.C.; St. Augustine/USA
  - 49) **Dr. Martin von Hildebrand**, Alternative Nobel Prize/Right Livelihood Award 1999, COAMA (Consolidation of the Amazon Region); Santafé de Botota/Colombia
  - 50) **Prof. Dr. Johannes Hoffmann**, Johann Wolfgang Goethe-University, Academic Department for Roman Catholic Theology; Frankfurt a.M./Germany
  - 51) **Prof. Dr. Sabine Hofmeister**, University Lüneburg; Lüneburg/Germany
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  - 53) **Bianca Jagger**, Alternative Nobel Prize/Right Livelihood Award 2004, World Achievement Award 2004, member of Executive Director's Leadership Council for Amnesty International USA, member of Advisory Committee of Human Rights Watch – America; Nicaragua



- 54) **Prof. Dr. Carlo C. Jäger**, Potsdam Institute for Climate Impact Research; Potsdam/Germany
- 55) **Dr. Nadia Johannisova**, Faculty of Social Sciences, Masaryk University; Brno/Czech Republic
- 56) **Annette Kaiser**, Economy, Mysticism; Wilderswil/Switzerland
- 57) **Jagdish Chandra Kapur**, Entrepreneur, Solar Scientist; Founder and Chair: Kapur Surya Foundation and Kapur Solar Farms; Publisher and Editor-in-Chief: World Affairs Journal; Co-Chair: World Public Forum: Dialogue of Civilisations; Author: India in the Year 2000, Future of Man: Eastern and the Western View, Our Future: Consumerism or Humanism; New Delhi/India
- 58) **Dr. Johan van Klinken**, Physics, Kernfysisch Versneller Instituut Groningen; Netherlands
- 59) **Prof. Dr. Klaus von Klitzing**, Nobel Prize in Physics, Max Planck Institute for Solid State Research; Stuttgart/Germany
- 60) **Stefan Klug**; Eng. of Spatial Planning, Nagoya University, Graduate School of Environmental Studies, Lab. of Sustainable Transport and Spatial Development; Nagoya/Japan
- 61) **Joachim Knobloch**, Artist; Dortmund/Germany
- 62) **Thomas Korbun**, Scientific Director, Institute for Ecological Economy Research; Berlin/Germany
- 63) **Florianne Koechlin**, Biology, Blueridge-Institute; Basel/Switzerland
- 64) **Prof. Dr. David C. Korten**, Harvard Business School, Founder and President of the People-Centered Development Forum; USA
- 65) **Edy Korthals Altes**, Former ambassador of the Netherlands, Honorary President World Conference on Religion and Peace (WCRP); Netherlands
- 66) **Prof. Dr. Rolf Kreibich**, Executive and Scientific Director, Institute for Futures Studies and Technology Assessment - IZT, Advisory Board Federation of German Scientists (VDW); Berlin/Germany
- 67) **Dr. David Krieger**, President Nuclear Age Peace Foundation; Santa Barbara/USA
- 68) **Dr. Oliver Krone**, Wildlife Veterinarian, Institute for Zoo and Wildlife Research; Berlin/Germany

- 69) **Prof. Dr. Lenelis Kruse**, Institute for Psychology and Ecological Psychology, University of Hagen; Hagen/Germany
- 70) **Dr. Rolf Künnemann**, Human Rights Director, FIAN International Secretariat; Heidelberg/Germany
- 71) **Dr. Hildegard Kurt**, and. – Institute for Art, Culture and Sustainability; Berlin/Germany
- 72) **Dieter Lattmann**, Writer, former MdB; Munich/Germany
- 73) **Dr. Wolfgang Liebert**, Interdisciplinary Research Group in Science, Technology and Security (IANUS), Darmstadt University of Technology; Darmstadt/Germany
- 74) **Dr. Prinz Alfred von Liechtenstein**, International Albert Schweitzer Humanitarian Award 1990, International Child Care Award 2001, President Vienna Academy for the Study of the Future; Vienna/Austria
- 75) **Prof. Dr. Rudolf Prinz zur Lippe**, Philosophy; Berlin, Hude/Germany
- 76) **Prof. Dr. Volker Linneweber**, Vice President for Academic Affairs, Otto-von-Guericke University, Magdeburg/Germany
- 77) **Dr. Reinhardt Loske**, MDB; Berlin/Germany
- 78) **Prof. L. Hunter Lovins**, Law, Sociology, Political Science, Alternative Nobel Prize/Right Livelihood Award 1983, Leadership in Business Award 2001, Professor of Business at Presidio School of Management, President of Natural Capitalism, Inc., Co-founder Rocky Mountain Institute (RMI); USA
- 79) **Dr. Geseko von Lüpke**, Journalist; Olching/Germany
- 80) **Lara Lutzenberger**, Biology, President Fundação Gaia; Porto Alegre/Brazil
- 81) **Prof. Dr. Birgit Mahnkopf**, Berlin School of Economics, Board Federation of German Scientists (VDW); Berlin/Germany
- 82) **Prof. Dr. Mohssen Massarrat**, Department of Social Science, University of Osnabrück, Co-ordinator of the German-Iranian Co-operation in the fields of climate protection, energy policy and sustainable development; Osnabrück/Germany

- 83) **Dr. Eitel von Maur**, Institute of Information Management, Datawarehousing/Competence Center Business Performance Management, University of St. Gallen; St. Gallen/Switzerland
- 84) **Prof. Dr. Manfred Max-Neef**, Alternative Nobel Prize/Right Livelihood Award 1983, Universidad Austral de Chile; Valdivia/Chile
- 85) **Mizrajim Komi Togbonou**, Actor, Musician, Berlin/Germany
- 86) **Dr. Carola Meier-Seethaler**, National Ethics Commission; Bern/Switzerland
- 87) **Careen Meiser**, Student; Berlin/Germany
- 88) **Prof. Dr. Klaus Michael Meyer-Abich**, Anthropology, Philosophy of Nature, University Duisburg Essen; Hamburg/Germany
- 89) **Pat Roy Mooney**, Alternative Nobel Prize/Right Livelihood Award 1985, ETC Group-Action Group on Erosion, Technology and Concentration; Ottawa/Canada
- 90) **Dr. Christa Müller**, Executive Management: Stiftung Interkultur and Stiftung Anstiftung; Munich/Germany
- 91) **Youssef Nabih**, Entrepreneur; Cairo/Egypt
- 92) **Jana Oberdörffer**, Student; Berlin/Germany
- 93) **Prof. Dr. Gottfried Orth**, Seminar for ecangelic Theology and Religious Pedagogics, Technical University Braunschweig; Braunschweig/Germany
- 94) **Dr. Hermann E. Ott**, Wuppertal Institute for Climate, Environment, Energy, Berlin Office; Berlin/Germany
- 95) **Prof. Dr. Nicholas S. Papanicolaou**, President Titan Capital Corporation, Chair World Public Forum: Dialogue of Civilization Rhodes; Greece
- 96) **Nicanor Perlas**, Alternative Nobel Prize/Right Livelihood Award 2003, Director Center for Alternative Development Initiatives; Manila/Phillipines
- 97) **Dr. Peter Plöger**, Writer, Evolutionary Cultural Ecology; Bielefeld/Germany
- 98) **Dr. Herbert Rauch**, Sociologist Univ. Vienna, Founder & Director Vienna Institut for Social Analysis, Secretary General European Asso-

- ciation for the Promotion of Sustainable Development ESD, Co-author: Die Wende der Titanic; Vienna/Austria
- 99) **Prof. Dr. Pallath Kumaran Ravindran**, Alternative Nobel Prize/ Right Livelihood Award 1996, Kerala Sastra Sahitya Parishad (KSSP); Kochi/India
  - 100) **Dr. Christoph Rommel**, Head of the Department of Psychiatry and Psychosomatic Medicine, Johanniter-Hospital Treuenbrietzen; Treuenbrietzen/Germany
  - 101) **Prof. Dr. Dr. Horst-Eberhard Richter**, Psychoanalysis, former Director Sigmund-Freud-Institute Frankfurt a.M., Founding Member, first Executive Manager and Spokesman and honorary Board Member of the german section of IPPNW; Frankfurt a.M./Germany
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  - 104) **Dr. Wolfgang Sachs**, Wuppertal Institute for Climate, Environment, Energy; Wuppertal/Germany
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  - 109) **Dr. Thomas Schmeuß**, General Medicine, Surgery, Environmental Medicine, Executive Council of Via Mundi e.V.; Nürnberg/Germany
  - 110) **Prof. Dr. Heinrich Schmidinger**, President of the University of Salzburg, Institute for Philosophy at the Catholic-Theological Faculty; Salzburg/Austria
  - 111) **Frank Schmiedchen**, Advisory Board Federation of German Scientists (VDW); Berlin/Germany

- 112) **Prof. Dr. Peter Schmuck**, Institute for Psychology and Labour Science, Technische Universität Berlin; Berlin/Germany
- 113) **Prof. Dr. Jürgen Schneider**, Geology, University Göttingen, Center for Geosciences; Göttingen/Germany
- 114) **Dr. Manuel Schneider**, Projektbüro ! make sense !; Munich/Germany
- 115) **Prof. Dr. Lothar Schneider**, Physics, Household Sciences, University of Paderborn; Paderborn/Germany
- 116) **Stefanie Schröder**, Choreographer; Berlin /Germany
- 117) **Dr. Vandana Shiva**, Physics, Ecology, Alternative Nobel Prize/Right Livelihood Award 1993, Director, Research Foundation for Science, Technology and Ecology; New Delhi/India
- 118) **Gyula Simonyi**, Economist, Theology, Founder and President of BOCS Foundation; Szekesfehervar/Hungary.
- 119) **Prof. Dr. Georg Spöttl**, Institute Technology and Education, University Bremen; Bremen/Germany
- 120) **Dr. Heinz Stapf-Finé**, Director Social Politics, Deutscher Gewerkschaftsbund (DGB), Bundesvorstand; Berlin/Germany
- 121) **Prof. Dr. Michael Succow**, Alternative Nobel Prize/Right Livelihood Award 1997, Institute of Botanic and Ecology of Territories & Botanical Garden, Ernst Moritz Arndt University of Greifswald; Germany
- 122) **Dr. Hanumappa Sudarshan**, Alternative Nobel Prize/Right Livelihood Award 1994, Director Vivekananda Girijana Kalyana Kendra (Vivekananda Tribal Welfare Centre); Karnataka/India
- 123) **Prof. Dr. Shigeki Toyama**, Nagoya University; Nagoya/Japan
- 124) **John F. Charlewood Turner**, Alternative Nobel Prize/Right Livelihood Award 1988; Hastings/UK
- 125) **Ole von Uexküll**; Berlin/Germany
- 126) **Jacob von Uexküll**, Founder Right Livelihood Award-Foundation; Stockholm/Sweden
- 127) **Prof. Dr. William L. Ury**, Director of the Global Negotiation Project, Harvard Law School, Harvard University; Harvard/USA
- 128) **Rainer Yusuf Vierkötter**, solarafrika.network; Zanzibar/Tanzania

- 129) **Dr. Johannes Vogel**, Head of UK Biodiversity Programme, Keeper of Botany, The Natural History Museum, Department of Botany; London/UK
- 130) **Prof. Dr. Koo van der Wal**, University of Rotterdam; Rotterdam/Netherlands
- 131) **Prof. Harald Walach**, Research Professor in Psychology, University of Northampton, School of Social Sciences & Samueli Institute for Information Biology; Northampton/UK
- 132) **Dr. Holger Wallbaum**, Wuppertal Institute for Climate, Environment, Energy; Wuppertal/Germany
- 133) **Dr. Mae Wan-Ho**, Biochemistry, Genetics, Director, Institute of Science in Society; London/UK
- 134) **Christine von Weizsäcker**, Biology; Bonn/Germany
- 135) **Dr. Legesse Wolde Yohannes**, Institute of Pathobiology, Addis Ababa University; Addis Ababa/Ethiopia
- 136) **Angie Zelter**, Alternative Nobel Prize/Right Livelihood Award 2001, International Women's Peace Service (IWPS) Valley Farmhouse; Norfolk/UK
- 137) **Prof. Dr. Baichun Zhang**, Normal University, Director Institute of Religion and Philosophy; Beijing/China
- 138) **Prof. Dr. Howard Zinn**, History, Playwright, Spelman College Atlanta, Boston University; Boston/USA