Sustainability: The search for the integral worldview

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ABSTRACT

The sustainability problem is described as a process of recurrent destabilization of societal value orientations or worldviews. These worldviews represent both value orientations with respect to 'quality of life' and mental maps about the surrounding world. The many different worldviews which shape society appear to be part of an overall integral worldview which can be deduced from societal enquiries and from the experiences of history and philosophy over many centuries. This integral worldview is defined by the vertical contrast between idealism and materialism and the horizontal contrast between uniformity and diversity. Due to a number of societal and psychological centrifugal forces, worldviews become one-sided and finally end in fundamentalist value orientations which are synonym with overshoot, collapse and crisis. Examples are religious fundamentalism and related wars, communism, nazism, the ecological crisis as well as the recent financial crisis.

The solution to these sustainability problems has to be found in the timely recognition and compensation of the destabilizing centrifugal forces. The resulting integral worldview is synonym with 'human dignity'. The thus defined time independent notion of human dignity defines a new ethical framework and solves the paradox between the needs of present and future generations in Brundtland's original definition of sustainable development.

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1. Introduction

Human history can be seen as a sequence of disruptive discontinuities or punctuated equilibriums, depending on whether the emphasis is on change or stasis. Change happens at an ever increasing scale and rate. Local and regional civilizations and the qualities of life they had developed for their citizens could not be sustained [1]. As was explored for the first time with a computer simulation model in the report *Limits to Growth* [2] to the Club of Rome, the scale of these processes of change is now approaching the scale of the planet. Moreover, their rate of change is still exponential: population, industrial output, resource use and pollutant emission keep growing and may well overshoot the earth carrying capacity. If the ecological footprint is considered an acceptable measure, the carrying capacity has already been overshot [3]. Turner [4] concluded from a careful comparison between the *Limits to Growth* standard run and two other scenarios (Stabilized World and Comprehensive Technology) and the historical proxy data for the period 1970–2000, that the observed data most closely match the 'standard run' – which models a global collapse before the middle of this century. 'The comparison is well within uncertainty bounds of nearly all the data in terms of both magnitude and the trends over time'.

The UN-report *Our Common Future* [5] of the Brundtland Commission was the political answer to the *Limits to Growth* analysis. It linked environmental (un)sustainability to both the overconsumption by the rich populations and poverty-driven

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overexploitation by the poor populations. Apparently, the call for a 'sustainable development' in both reports did so far not result in sufficiently effective changes in population growth, resource use and technological developments to avoid the serious negative impacts for which both reports warned. Now, in 2010, the world starts to experience the mounting stresses forecasted for the early decades of the 21st century if the mechanisms behind exponentially growing demands on the planet would not be stabilized. As any system approach would indicate, the crisis does not show up in a clear and visible way – instead, it will appear as a slow erosion of the capability to manage adequately an ever more complex and interdependent reality. It will take the form of a manifold of ecological, financial-economic and social crises. In some African countries it may be a mix of resource related wars, mass migration and starvation and climate change related droughts. In other regions the eye of the storm may be the collapse of the financial system with subsequent unemployment, protectionism, ethnic strife and breakdown of public services. In yet other regions, the failure to provide adequate health and education thwarts attempts at slowing down population growth and large-scale poverty, with unending social conflict as a result.

This is not the 'common future' described by the 1987 Brundtland UN-Commission as a political answer to the Limits to Growth study of 1972. Almost 25 years later little progress is made. The problems have been almost exclusively addressed by technological means, which partly compensated for the ever increasing societal and economic activities. The discussion about human needs, as raised by the Brundtland Commission, so far did not result in public awareness, let alone national or global policies.

This paper resumes the Brundtland discussion on human needs and in particular the corresponding value orientations. Not only does it confirm the conclusion of the Commission that the solutions of the sustainability problem has to be found in human needs and value orientations, but also it concludes that the ongoing trends to un-sustainability result from recurring and predictable imbalances in the societal value orientations and the related visions on the quality of life.

2. Quality of life and sustainability

The Brundtland Commission defined sustainable development as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs." [5]. But how to know and value present and future needs? According to Max-Neef [6] needs apply to the human being as a whole and express the constant tension between deprivation and potential, the tension between what people want to realize and what they actually can realize. What people want to realize depends on their experiences and ideas about 'the good life' and on what they value therein – in other words: on their value-orientation. However, according to Sen [7], what people actually can realize depends on their capabilities which include personal as well as societal conditions. Nussbaum [7] gives a list of capabilities which she sees as relevant for human well being: physical life, health, physical integrity, senses, imagination, thinking, emotions, reflection, relations, other species, games as well as political and material control over one's own environment. An individual has the freedom to choose which capabilities he or she wants to realize; the realized capabilities are called functionings.

In first instance, one would associate a good quality of life with the extent to which people can function according to their value orientation. However, a person's experience of a good quality of life is often equally or more dependent on the available options, i.e., on the capabilities, than on the actual realization of these options. Sen therefore proposes to define quality of life on the basis of capabilities rather than on functionings. Given the fact that the capabilities are constrained, for example by environmental or economic factors, the subjective 'quality of life' concept can be connected to the more objective environmental and resource aspect, which in turn is the result of social interactions [8].

Following this line of thought, sustainable development in the Brundtland definition is seen as the continuation of a certain set of capabilities, depending on a person's value orientation, as part of his or her individual perception of 'the good life'.[1] On the other hand the realization of the required capabilities might be constrained by environmental factors or resource scarcity. The Brundtland Commission apparently assumes (inter-generational) equity between present and future generations and this raises the paradoxical question which needs are equally valued by future as well as present generations, and at the same time can be realized within the increasing constraints on the physical capabilities.

In order to solve this enigmatic question, the relation between the human value orientations and the corresponding capabilities should be understood. Value orientations and capabilities can be seen as two parallel levels, which are depicted in Fig. 1 as two parallel 2-dimensional planes. Which capabilities in the lower plane are to be realized depends on the choices made, and thus positions taken in the upper plane. The upper plane of human value orientations represents the quality of life *ends* and the lower plane the *means* to realize that quality of life. In that sense, the upper plane can be seen as 'human' values and the lower plane as 'economic' values. The dependency of the (choice for) capabilities from the value orientations goes further than the straightforward end-means relation. Different value orientations imply also different views on the relevance of certain capabilities and their mutual relations and interactions. In practice affinity to specific value orientations (quality of life *ends*) will coincide with affinity to specific beliefs about how to achieve these ends by quality of life *means*. As with controversial complex issues such as causes and consequences of climate change, application of genetically modified organisms (GMOs) or large-scale development of nuclear power, one's values will inevitably play a role in how to assess the potential for real solutions, the interpretation of risks involved and hence the relevance of the corresponding capabilities. Apparently value orientations have a twofold role; to value what is worthwhile with respect to quality of life and, secondly,

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[1] A value is defined here as a prescriptive conviction about desirable behavior and goals, in particular in the long-term perspective [10].
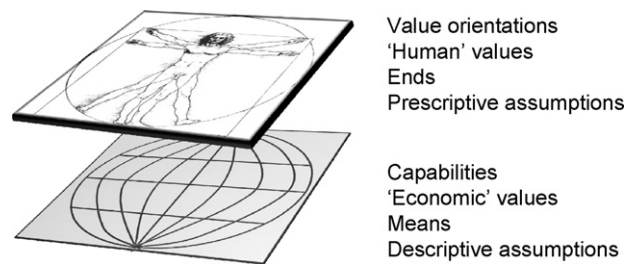
Fig. 1. Value orientations and capabilities.

how to interpret the role and meaning of capabilities therein. Rokeach [9] distinguishes this as two kinds of assumptions about the world, wherein:

- *prescriptive assumptions* refer to value orientations, to the question about the importance of certain things and themes over others. They are subjective and refer to a certain, chosen quality of life and are represented by the upper plane in Fig. 1;
- *descriptive assumptions* refer to the belief system about how the world functions, to mental maps of how things work. They usually have a more shared, objective nature and frame the way in which the chosen quality of life can be reached or maintained by the capabilities represented by the lower plane in Fig. 1.

The prescriptive and descriptive assumptions are in practice strongly related and together encompass man's individual vision on quality of life ends and the means to achieve them.

3. Worldviews

A worldview is thus defined as a combination of a person's value orientation and his or her view on how to understand the world and the capabilities it offers, the lens through which the world is seen. There are several ways to acquire knowledge about peoples worldviews: (1) social surveys among present day people (2) psychological and philosophical insights gained over the last millennia (3) notions from cultures and religions (4) empirical observations and experiences in the 'laboratory' of human history.

3.1. Societal surveys

The most direct way to get an idea of what people value in life and how they think the world works is to ask them. Many surveys, such as The World Value Survey [10], have been done and are done, about a variety of issues. Within the context of the Sustainability Outlook [11,12], several thousand (Dutch) people were questioned on the basis of the so-called Rokeach-values [13]. Value orientations of respondents can be deduced by both ranking and rating of these Rokeach-values. Given the pro's and con's of both methods, as discussed also by Schwartz [14], the ranking method was used. However this does not imply that opposing value orientations can be seen as methodological artifacts. Value orientations are opposing when the value ranking sequence is fully reversed and the rank correlation between these orientations subsequently is strongly negative.

The original distribution of value orientations is multi-dimensional. In first instance for practical reasons, this multi-dimensional data set is reduced by a principal component analysis to the two dimensions which are statistically the most relevant ones and which constitute the 2-dimensional plane of drawing in Fig. 2. The figure suggests that the multidimensional 'value space' can be statistically meaningful reduced to two main dimensions: the contrast *giving* (upper) versus *taking* (lower) and the contrast *small world* (right) versus *big-world* (left). The first component along the vertical axis is very close to the contrast *religious* versus *worldly* and *im-materialistic* versus *materialistic*. The second component on the horizontal axis can be associated with an orientation on the own *local community* versus the *world* as a whole or, from a more individual stance as the contrast between *self* and *the other*(s) and between *individual* and *collective*.

After projection of the original, multi-dimensional data set onto the 2-dimensional plane of Fig. 2, eight value clusters are found. On the basis of interviews, these clusters have been given neutral and clear names and a qualitative, detailed description of the most characteristic values, attitudes and behavior. A proximate distribution of the Dutch population over the clusters has been constructed. One distinguishes the categories Caring (14%), Conservatives (15%), Hedonists (10%), Luxury Seekers (10%), Business-like people (8%), Cosmopolitans (9%), Engaged people (13%) and the middle group of Balanced people (21%). The last category includes also people who are not aware of or expressing an outspoken position. Tests on other scales, such as lifestyle (lack of) self-control and egoism, indicate good correlations with the clusters. For instance, business-oriented people are most active and in control of their lives, whereas caring people score highest on affection and group-orientation. Comparative research on the basis of different and/or more extensive sets of values, suggest that the Rokeach-based value space is universal, in the sense of context-independent and trans-situational. The relative position, however, was found to differ between countries.
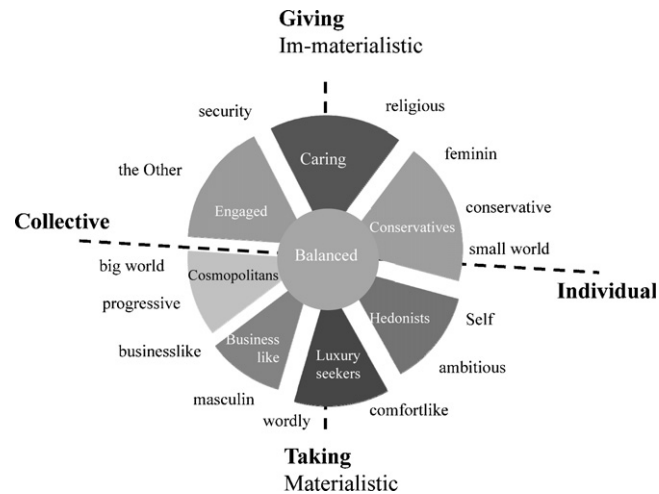
Fig. 2. Major value orientations in the population.

Within this framework, the main characteristics of the eight clusters can be understood or explained to a large extend by the two principal components, although these components explain only 25% of the total variance. Caring people value non-material aspects of life, whereas the Luxury Seekers value the material ones. Conservatives may share a non-material oriented life-style with the Caring people, but tend to focus more on the local 'own' situation. On the opposite side one finds the Cosmopolitans and Business-minded people, for whom the money and material aspects of the 'big world' are making up quality of life. Hedonists are small scale and ego-oriented, in combination with a materialistic, worldly attitude. The Engaged people are their opposites: a focus on large, global scale issues and on the non-material aspects. The Balanced people in the middle give more or less equal weights along the two axes or represent indifferent attitudes.

The individual positions in the diagram represent the value orientations of individual people. The eight clusters are groups of people with more or less homogeneous value orientations. These people then are said to share a common 'worldview'. Together these worldviews constitute the '*integral worldview*', which at this stage has no other meaning than the ensemble of all worldviews. In a later stage, the definition of integral worldview will be further specified.

Although the characteristics of the eight clusters appear to be reasonably described by the two axes of Fig. 2, the reduction of all value orientations or worldviews to eight clusters in a 2-dimensional plane is a statistical construct. Taking into account that the principal component analysis explains only a rather limited part of the total variability in value orientations, the question remains to what extend the 2-dimensional circular pattern of Fig. 2 can be seen as a meaningful representation of the integral worldview. Additional information about the meaning and significance of the two major axes, which were statistically derived as the most important pairs of opposite values from the value surveys, are obtained from examination of the psychological and philosophical thoughts over the recent centuries.

3.2. Psychological and philosophical understanding

In Fig. 2 the clusters or 'individual' worldviews appear as opposites in opposing quadrants. The existence of opposites is clearly posited by the psychologist Jung [15], who stated that 'the psychic consists of processes of which the energy is generated by reconciliation of several kinds of opposites; it is a potential. In that sense both the spiritual and the material are part of reality and together they form a pair of opposites which is one of the most powerful sources of psychic energy'. Indeed, there is ample evidence that the human mind tends to operate by thinking in opposites. Many religions and myths describe creation as the separation of primordial substance into opposites, like light and darkness, heaven and earth, male and female, etc. Also modern cosmology tends to see evolution as a process derived from opposites (or gradients) in, for instance, energy and mass density [16].

In our view, the *vertical axis* in Fig. 2 can be associated with 'religious' values on the upper side and with 'worldly' values on the lower side. It is less relevant whether the 'religious' orientation is seen as an a priori and pre-existing quality 'from above', or as a quality which is emerging bottom-up as part of human evolution 'from below'. This is not to say that the perennial debate about the origin of mind and consciousness is irrelevant – we only say that the vertical dimension should be acknowledged irrespective of the answer to this question. After all, billions of people have a religious orientation which is expressed in either collective or individual ways (as will be discussed later on). A corollary is to associate the vertical dimension of giving versus taking and religious versus worldly with the pair of opposites 'mind and matter'. In this interpretation, the vertical orientation as pair of opposites can be traced back to the ancient Upanishad scriptures in India and the symbolism in many other religions.

It is also reflected in the writings of Plato, who in 400 BC believed the world to exist in two domains, the world of ideas and the world of senses. Since then this duality between mind and matter has been one of the dominant themes in western

philosophy, which brought Whitehead to the conclusion that history is nothing else then a series of footnotes to Plato. It is found in the controversy in medieval Europe between nominalism and realism and shows up later in the work of Hegel and other 19th century philosophers. Hegel describes, especially in his 'Philosophie der Geschichte' [17], the vertical contrast as Idealistic versus Materialistic, 'the interaction between the general, the Idea which is based on the spirit on one hand and the outside world of physical matter on the other hand'. Also the worldview of the founder of anthroposophy Steiner [18] builds on the opposing qualities of spirit and matter. The same holds for the British historian Toynbee. In Mankind and Mother Earth [19] he says: 'Man is a psychosomatic being, acting within a world that is material and finite ... But Man's other home, the spiritual world, is also an integral part of total reality; it differs from the biosphere in being both non-material and infinite; and, in his life in the spiritual world, Man finds that his mission is to seek, not for a material mastery over his non-human environment, but for a spiritual mastery over himself.' The sociologist Sorokin [20] uses the words Ideational and Sensate for this vertical contrast. The contemporary philosopher Wilber [21] follows Hegel in the suggested connection between outside (exterior) and materialistic and between inside (interior) and spiritual. Following Teilhard de Chardin, he relates this contrast also to the degree of consciousness. Wilber rather describes 'functions of the evolution' than value orientations as discussed here. The German sociologist Fromm [22] refers to the vertical contrast as 'to have' for the materialistic lower versus 'to be' for the im-materialistic upper polarity. In Table 1 the various ways in which the vertical dimensions in Fig. 1 have been identified and explored by various philosophers and researchers are shown. We will use the terms Idealistic versus Materialistic, following Hegel.

Also the *horizontal axis* of big world versus small world in Fig. 1 can and should be given a broader interpretation on the basis of the wisdom of perennial philosophy. The orientation on the right-hand side of the small world implies a consciousness primarily focused on the individual, the 'I' in its material and non-material manifestations and expressions. In an orientation on the ('big') world as a whole, there will be a clear awareness of the world outside the individual: the 'we' as it manifests itself in collective relations and institutions. On the right hand side, the focus is on the part rather than on the whole, on regional rather than on global developments, on the individual rather than on the collective, on the 'I' rather than on 'the others'.

This contrast is found in philosophical reflections as well: the tension between the universal and the particular in human existence. Each of us has an individual existence, yet we are in innumerable ways connected to the larger material and mental world around us. The left side of the horizontal axis may be interpreted as shared existence in the collective realm, with its objectivity and wholeness. The right side is to be associated with the non-shared existence in the individual realm, with its subjectivity and separateness. For a collectivity to exist, a certain level of uniformity in value orientation is required. In contrast individuation allows and creates diversity of value orientations. The contrast between uniformity and diversity encompasses the various, above mentioned contrasts which are summarized in Table 2.

The 18th century philosopher Kant [23] distinguishes subjective rules for the behavior of individuals as 'maximes' from 'laws' which are derived from these subjective rules by generalization. The mutual relation between the two is known as the 'categorical imperative', which resulted in the popular saying 'treat others as you want to be treated'. Also for Steiner [18] the horizontal axis represents subjectivity versus objectivity. In many studies, such as those of Schwartz [24] and Wilber [21] this contrast is interpreted as (subjective) individual versus (objective) collective. In the essays of the French philosopher Levinas [25] the relation between these two polarities is deepened to the 'I' versus 'the Other'. Jung and the Nobel prize winning physicist Pauli [26] interpret the contrast between the individual and the collective also as the duality of light, which is both (individual) particle and wave. As stated by many of the earlier mentioned philosophers, the underlying idea is that man's real existence is in between the individual ego and the collectivity of the others, between the part en the whole.

Finally Sorokin as well as Steiner explain that the horizontal axis in the preliminary integral worldview of Fig. 2 also represents uniformity-universalism versus diversity-singularism. From an epistemological point-of-view, in the big-world view (left) a person acknowledges and appreciates an objective, universal truth, while in the small-world view (right) he tends to accept only subjective, personal truths dependent on the context. In the latter case, for instance Feyerabend [27] pointed out that 'there is no simple scientific map of reality'. But 'there are many different maps of reality, from a variety of scientific viewpoints'. This contrast is also evident at the societal level and has important ramifications for the quest for sustainable development.

Table 1
Interpretation of the vertical axis.

Vertical axis	Idealistic	Materialistic
Surveys	*Giving*	*Taking*
	Religious	*Worldly*
Plato	Ideas	Senses
	Mind	Body
Hegel	Idealistic	Materialistic
Sorokin	Ideational	Sensate
Steiner/Toynbee	Spirit	Matter
Jung	Archetype–spiritual	Instinctive-material
Wilber	Interior	Exterior
Fromm	Being	Having

Table 2
Interpretation of the horizontal axis.

Horizontal axis	Uniformity collective	Diversity/pluriformity individual
Surveys	*Big World*	*Small world*
	The others	*Self*
Kant	Laws	Maximes; rules for personal behavior
Steiner	Objective reality	Subjective understanding
Sorokin	Universalism/Active	Singularism/Ascetic
	One single truth	Pluriform truth
Pauli/Jung	Non-locality; wave	Locality; particle
	Whole	Part
Levinas	The Other	I
Schwartz	Group values	Individual values
Wilber	Collective	Individual
Economical studies	Globalization	Regionalization (protection)
	Government	Market

Human individuals are never isolated; in the material world they share resources, in the immaterial world they share ideas, and in-between they share social arrangements and institutions. That which is 'the part' on the larger societal/global level might be 'the whole' on the lower individual/regional level. Herein the horizontal axis in Fig. 2 is interpreted as the contrasts of global(ization) and regional(ization). *Global*((ization) is the worldview in which the interaction between societies becomes more intensive, manifested in more and more complex institutional and collective arrangements and a further spread of uniformity and standards. *Regional*((ization) points at the process of a (re-)orientation on the local/regional situation and culture, which may manifest itself in various forms such as social-political isolationism.

It is concluded that the major contrasts in value orientations that are found in nowadays societal surveys confirm the fundamental contrasts identified by the important philosophers over the past centuries. When the results of the value surveys are enriched with the insights of these philosophers, a next and more robust version of the ensemble of worldviews, i.e., the integral worldview, is obtained (Fig. 3). The integral worldview describes the human-position in between 'heaven and earth' and in between the 'I' and 'the others'. The philosophical notions to a large extent coincide with the two specified axes and this supports the plausibility that the integral worldview indeed can be represented by the 2-dimensions which are constituted by the vertical and horizontal axis. Further, the integral worldview is presented as a circular pattern, given the notion that it not only represents the major contrasts along the vertical and horizontal axis, but also all the 'secondary',
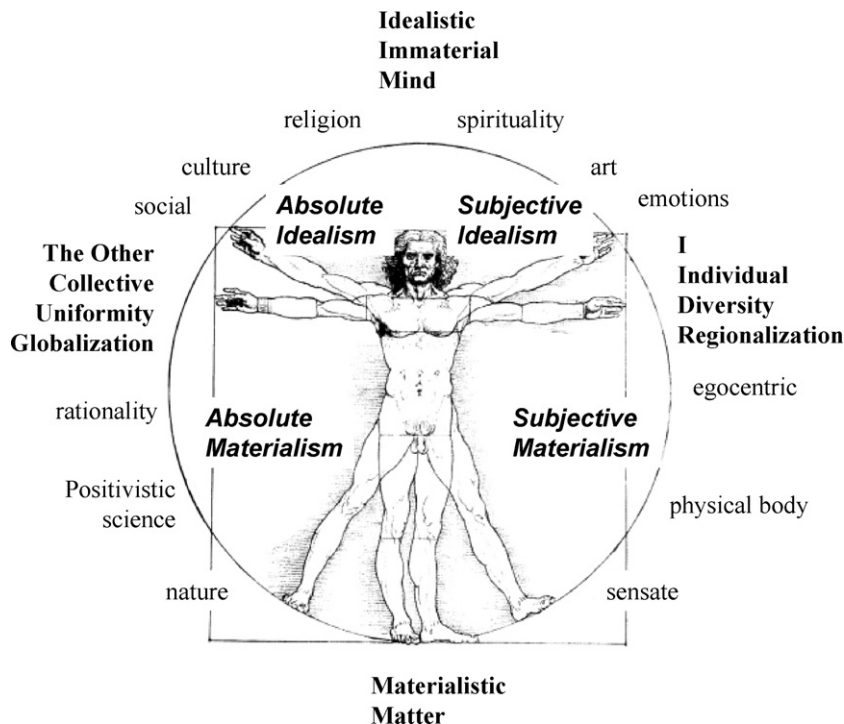

Fig. 3. Integral worldview.

diagonal contrasts in between, for example 'rationality' versus 'emotions' in Fig. 3. The 'value-distance' between all those contrasts is expected to be the same, which implies a circular (integral) worldview. A further support for the plausibility of a circular pattern is given by Jung and Pauli, who also proposed a 2-dimensional integral worldview [26]. In the work of Pauli this appears as the mathematical complex unity circle and Jung describes this 'worldview' by means of (2-dimensional) circular mandala's.

4. Characteristics of individual worldviews

The integral worldview, as the total ensemble of all individual, typically human worldviews, is expected to be invariant over time. However, as already demonstrated by the societal survey, certain individual worldviews will dominate groups or entire societies within certain periods. So the expression of individual worldviews, as part of the integral worldview, will vary over time and space. The individual worldviews, as quadrants of the integral worldview of Fig. 3, are characterized by the specific values and beliefs that are represented by the primary vertical and horizontal axis of the integral worldview:

The upper right quadrant represents combinations of non-materialistic, idealistic and individual-spiritual, subjective orientations, and their expressions in emotions and art. Following Hegel [28] it can be described as *Subjective Idealism*. If this worldview prevails in society, one may expect a genuine appreciation of the arts and of religion as a personal, spiritual experience. Sorokin [20] describes this worldview as *ascetic ideationalism* and in sharp contrast to the materialistic-sensate worldviews of the lower two quadrants. Needs are spiritual and satisfied by complete mastery of all the sensate needs; emphasis is laid on the individual spiritual orientation, with room for a diversity of interpretations and pluralism of truth. Because the individual sees himself as the centre of a (spiritual) world, people view sustainability as a quest for personal growth – focus on basic needs, manage greed, aspire for self-reliance and resolve conflict at the community level. Big government and corporations are distrusted, science is considered unacceptably rational and the material world is perceived as an incarnation one has to be liberated from. One icon for this worldview is Schumacher's book 'Small is Beautiful' [29], which makes a plea for small scale solutions and individual responsibility: "I have no doubt that it is possible to give a new direction to technological development, a direction that shall lead it back to the real needs of man, and that also means: to the actual size of man. Man is small, and, therefore, small is beautiful."

In the upper left quadrant a majority in society adheres to the view that there is a universal objective truth, which is not to be uncovered by the rational mind but should be understood from the scriptures and revelations as revealed by prophets and enlightened ones and consolidated in churches and religious prescripts. It can be denoted as *Absolute Idealism*. Its essence is immaterial and collective. It thus represents the collective counterpart of art and spirituality in the form of culture, institutional religion and social structure. Churches and their dignitaries are among the most visible and outspoken representatives. But also many present-day governments and government-related institutions can be associated with this quadrant, as they aspire to work for society at large and for the well-being of its citizens. Sustainability problems such as widespread poverty and ecological degradation are usually perceived as lack of moral convictions and social solidarity, to be resolved by more adequate rules and institutions to enforce them. The UN-(Brundtland) report 'Our Common Future' is a good expression of this worldview.

The diagonal opposite of the upper right Subjective Idealism worldview is the lower left *Absolute Materialism* worldview. It is based on the combination of a solid belief in the existence of universal absolute truth and a materialist value orientation and cosmology. Its dominance in (western) society is expressed in the rationalist-humanist conviction that the world can be understood and managed according to scientific principles and with the purpose of 'the greatest happiness for the greatest number'. Academia, research and government organizations and corporate bureaucracies are the institutional representatives. Its scientific and technological success is at the root of many sustainability problems, and yet its advocates point at science- and technology-driven innovations as the solution. This worldview has come to dominate in European society in the last few centuries and can be seen as the underlying value orientation of *Modernism*.

The fourth lower right worldview of *Subjective Materialism* combines a materialist orientation on life with a focus on the individual; emphasis is on physical well being, wellness, sexuality and hedonism. No longer is there a belief in universal truths and the collective. Instead, the focus is pluralism in values and interpretations, resulting in great diversity in lifestyle and other manifestations of individual (subjective) identity. The value orientations associated to this worldview are also at the root of feelings of anxiety and insecurity of many nowadays people: there are no anchors for meaning and consolation, neither in the collective nor in the soul. Sustainability issues are usually narrowed down to issues of individual survival, with a fatalist touch and its subsequent regional and national orientations. Huntington's 'Clash of Civilizations' [30] is one of the books which identified the quest for regional identity and security emerging in the late 20th century. In an interpretation of postmodernity, Hall et al. [31] conclude that 'in postmodern times we are moving out of an age of uniformity, collectivity and universality and into one characterized by individuation, fragmentation and difference'. Using the terms 'pluralism' and 'particularism', the authors confirm the existence of the horizontal axis we have described in Table 2. Given the correspondence between their definition of 'post-modernity' and the values which are specified by the individual/regional and materialistic polarities on the horizontal and vertical axis, the Subjective Materialistic lower right worldview is associated with 'post-modernism'. We put it between quotation marks, realizing that this is just one out of the many definitions of postmodernity. Anyway, the lower right worldview is not determined by these definitions, but defined by the polarities of the two axes which constitute the integral worldview.

The identification of divergent individual worldviews already clarifies many actual societal debates and philosophical reflections on human existence. The tension between upper left and lower right stems from the polarity between an absolute

idealistic belief in universals (as with Plato and in medieval realism) and a realistic belief in subjective and materialistic individuals (as in medieval nominalism). In history this opposition is reflected in the rejection of the physical, notably the sexual, aspect of human life–and the vehement rejection of Darwin's thesis that men descends from apes – on the one side and extreme forms of hedonism and body culture on the other. This controversy is still the actual debate; small scale orientation and egocentric lower right (subjective materialistic) values deny the opposing upper left orientation of the institutions, in particular institutional religions and, naturally, its more fundamentalist representations. Vice versa, institutional religions to a large extent deny the individual-physical ('sensate') values like sexuality as integral part of the opposing lower right side. In doing so, both orientations have become by definition fundamentalist. In general the extremely materialistic positions in the lower half of the integral worldview, with Dawkins' God Delusion as a prime example [32], deny the values of the upper half and vice versa (celibacy).

The diagonal from upper right to lower left reflects the opposite views of science, with its emphasis on observation and falsification, on the one side and the religious convictions of individuals practiced in esoteric and mystery schools on the other. The one sided positivistic science of the absolute materialistic (or 'Modernist') worldview denies the reality of human feelings and 'knowledge from within'. This opposition is recognized in, for instance, the words of the Indian philosopher Aurobindo [33] who describes in Le Cycle Humain the move to the upper right as "un pas vers la connaissance de soi et vers une existence dans le moi et par le moi, au lieu d'une connaissance des choses en tant que non-moi et d'une existence assujettie à la conception objective de la vie et de l'univers".

Finally, as a reaction to the orientation of Marx, denying the individual values of the right hand side, nowadays neo-liberals, initiated by Thatcher ('there is no such thing as society' [34]) and Rand ('If any civilization is to survive, it is the morality of altruism that men have to reject.' [35]) deny the societal, collective values at the left hand side of the integral worldview.

5. Overshoot and collapse of worldviews

A central thesis of this paper is that particular worldviews dominate society during certain periods in the sense that a majority of (influential) people adhere to and articulate such a worldview. In such periods other worldviews are less dominant, absent, or even actively suppressed. Due to specific societal 'centrifugal forces', the initial one sidedness amplifies itself, resulting in the perversion of the initial values and beliefs; the worldview has become its own caricature. The subsequent overshoot ends in disruptive collapse of societal continuity because its original authenticity gets lost and other worldviews are repressed and start to resist. This mechanism suggests that the less one sided the initial value orientations are, the more balanced the societal system is.

The underlying mechanisms do not only drive the outward change in value orientations within a worldview, but also to some extent are responsible for transitions between worldviews. We interpret the forces behind the radicalization of a dominant worldview and its succession by another worldview over time as interrelated and together generating overshoot-and-collapse dynamics. The major discontinuities of history, in which sustainability apparently was lost, thus can be interpreted as overshoot and collapse of the dominating worldview and its associated value orientations. The perversions for the respective worldviews are indicated in Fig. 4.

5.1. Dogmatic religion

In the absolute idealistic worldview (upper left) with its absolute, universal truth and spiritual orientation, societal structures are shaped by institutional religion. Under pressure of the increasing popularity of early Christianity, the Roman emperor Constantin accepted the new religion which he institutionalized into the Roman Catholic Church. At the end of the
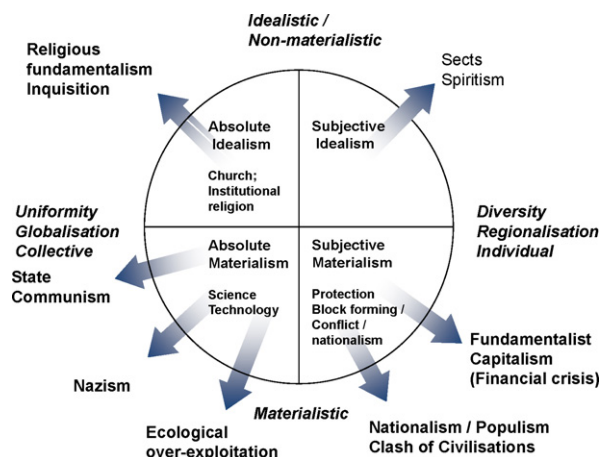

Fig. 4. Overshoot and collapse of worldviews.

4th century, diversity of individual faith was replaced by dogmatic uniformity. Notwithstanding the political fragmentation, adherence to the collectively experienced, universal truth of the Roman Catholic Church had become nearly ubiquitous in 10th century Europe. As its theology further crystallized into dogmas and other worldviews were increasingly erased by inquisition, the worldview became its own fundamentalist caricature. Tolerance against people with dissident value orientations faded away, as is testified in the witch hunts against the Cathars in 13th century southern France and against the Jews. Many other mystical religious convictions were forced underground. The physical world and the physical body in the lower realms of the integral worldview were repressed, either by sanctifying asceticism or by ruthless persecution.

5.2. Absolute state

In the lower-left absolute materialistic worldview, the non-materialistic qualities represented by the upper half of the integral worldview lost relevance or were exposed as superstition. The emphasis on materialistic values implied the denial of spiritual, religious values at the top. This change is associated with the process of industrialization, which according to the World Value Survey is found to coincide with in a clear value shift from *traditional to secular/rational* [10]. Social life got organized in the uniform way of mechanized mass production, with rigid social classes and uniform standards; technology took the place of religion as a source of authority. Socialism was a vocal expression of this worldview in 19th and 20th century Europe. Marx [36] expressed in 1859 the new direction of scientific materialism and collectivism clearly in his opposition to a more individualist outlook: ''it is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness''. In the denial of the individual, State communism as it appeared in 20th century Russia and some other countries brought this worldview to its extreme, perverting the uniformity and collectivity values of the integral worldview. It caused many victims and massive societal upheaval.

5.3. Nazism

Darwin's Origin of Species (1859) is often interpreted in ways representative of the absolute materialistic worldview: man is not created 'from above' but the result of evolution 'from below'. During the 19th century, the German zoologist Haeckel translated Darwinism into Social Darwinism. Herein, and also typically for this worldview, man is determined by the overwhelming forces of nature and should be subordinated to nature. In his book 'From Darwin to Hitler' the historian Weikart [37] shows in detail how very gradually Darwin's ideas were perverted into the ideology of Nazism. In the same way in which certain plant species cannot keep up with the evolutionary process, certain groups of people fall victim to the process of evolution. Weikart stresses the role of values in this process by stating that 'Hitler was ultimately so dangerous, precisely because his policies and decisions were based on coherent, but pernicious, ethical ideas'. The catastrophic results of the gradual perversion of absolute materialistic values are well known.

5.4. Ecological crisis

In the absolute materialistic (AM-)worldview, absolute truth is not coming from religion above, but from science below. It left the universality claim intact: the verbal word was replaced by the written word and by universal and general laws, contextual time by timelessness, *in natura* exchange by uniform rules for money and trade. But the inquisitive minds of the early scientists with their rationalism and empiricism shredded religious constraints and science and technology could develop at an unprecedented rate. It foreshadowed the great changes of globalization and industrial revolution.

Under the increasing influence of the lower right subjective materialistic (SM-)worldview, the subordination to nature makes room for the exploitation of nature. The combination of the rational, natural science domination of the previous AM-worldview and the individualistic SM-worldview bears the *ecological crisis*. With a population increasing from 1 billion in 1800 to 6 billion in 2000 and probably over 9 billion in 2050 and an ever-increasing consumption level, the pressure on the earth system is increasing to more than ten-fold the level of 1800 during the coming decades. From the AM-perspective, science and technology will provide the solutions to manage these changes and avoid large-scale catastrophes. However, precisely because of the shift towards an SM-worldview, science and technology are missing the popular support needed for effective introduction of these solutions. The result is continuous societal conflict because the proposed solutions reflect widely different value orientations. Although scientists still adhere to the 'immutable laws' of nature, their recommendations and solutions succumb in ineffective and polarizing societal debates. The resulting incrementalism and localism may turn out to be catastrophic in its failure to deal with large-scale global problems such as climate change, eutrophication, acidification (of oceans) and depletion of resources, such as water, minerals and fossil fuels.

5.5. Regionalism and populism

In the lower right SM-worldview the physical-individualistic and the materialistic-regional values and beliefs dominate. Diversity and pluralism focus on the desire for personal autonomy, self-fulfillment and other forms of self-expression [38]. The signs of overshoot in this SM-worldview in the lower-right quadrant are visible in the form of extreme hedonism and

consumerism and the cynicism about other aspirations than the pursuit of individual material goals. Disintegration of states is to be expected in this process, because states increasingly lack the legitimacy to formulate and implement societal goals in an ever more complex and interconnected world. Examples of such trends towards local autonomy and diversity are the falling apart of the former USSR and of former Yugoslavia, and the separatist movements in Catalonia in Spain and Flanders in Belgium. Xenophobic, right wing groups oppose immigration as well as science as representations of the left hand side worldviews. In a hostile world gated communities and self-sufficiency are the last guarantees for physical well-being.

5.6. Financial-crisis

The present financial-economic system is also a perversion of the SM-worldview in which egoistic interests are merged with an outspoken materialistic value orientation. Capitalism has become more outspoken with a tendency to reverse ends and means. The financial system becomes an end in itself, where ownership of economic production facilities such as listed companies, is misused for speculation and private gains. The overemphasis on the production factor labor at the extreme left orientation in state communism has been replaced by the equally one-sided emphasis on the production factor capital at the extreme right hand side position. The result is a *financial crisis* which forms an actual threat for societal sustainability.

Subjective Idealism has its perversions as well, for example as spiritism at the end of the Romantic period around 1900 and more in general in the form of sects through the ages. However, given the individualist and non-materialist orientations, these caricatures did not result in sustainability problems.

6. Dynamics within worldviews

Value orientations which are typical for the respective worldviews tend to become more outspoken at first and over-emphasized and exaggerated later on. Once the societal movement behind it gets momentum, there is a tendency to overshoot: the worldview becomes its own caricature and sensible values and ideas turn so extreme that the values of the opposing worldviews are no longer respected. Ends and means are interchanged. An important question is whether the dynamic mechanisms behind these dramatic changes can be understood. We propose to distinguish at least three such mechanisms behind the centrifugal movement from the centre:

- *Identification-pull*. Individuals move to one of the corners to identify themselves with certain convictions and associated social roles and material and immaterial (psychological, institutional) benefits. The search for identity may have material and immaterial roots and reflects a deep psychological need. In the words of Jung [39] 'man a so unaware of himself, that he attaches to anything which can offer him some grip'. Once certain positions of status, power and money are reached, there is a strong tendency to legitimate these on the basis of the worldview. In the periphery the individual is subject to the church, the state, science or to his own (selfish) ego. In the present individualistic-materialistic-dominated situation, for instance, he might identify himself which his material achievements such as his car or his job. To maintain his ego he then necessarily has 'to keep up with the Jones'. Such a centrifugal 'reference drift' contributes to the exaggeration of the characteristic values of the already dominating worldview and its subsequent degeneration into its own caricature. This then leads to obsession with individual possession.
- *Responsibility-push*. The second centrifugal force is when individual people opt for one of the four quadrants in an attempt to flee from the centre with its existential demands. As pointed out by Fromm [40], the individual fears the freedom inherent to the centre of the worldview diagram, where he himself has to take full responsibility for his existence. This fear pushes him away from the centre. Subsequently he can opt for an identity which he can borrow from one of the worldviews in the periphery and which gives a feeling of belonging.
- *Reinforcement*. As pointed out by Castells [41] a newly emerging worldview is legitimizing itself by the introduction and consolidation of institutions that extend and rationalize their domination over the social actors. Power is maintained by articulation of the initial value orientations which where still part of the integral worldview. Authorities, who are part of these institutions, reinforce the process towards one-sidedness. Castells distinguishes a resistance and a project identity, which fit into the worldview dynamics. Resistance identity is interpreted to represent the values of the previous worldview and project identity seeks the societal transformation on its way to the upcoming worldview. The media in their old and new appearances support the centrifugal effects whenever attention is paid primarily to extreme views rather than to their reconciliation.

Also the forces driving the present *economic system* are centrifugal. In order to maintain full employment for a growing population in the face of an ongoing increase in labor productivity by automation of production processes, total economic output has to grow. Capital searches all over the globe for the highest returns, intensifying the processes of wealth accumulation in the hands of few and resource appropriation and marginalization of many. The values of consumer capitalism take precedence over ethical concerns about loss of community and non-materialist values. Consumption in the materialistic worldviews is driven by the lack of realization of idealistic-values, resulting in 'preference drift'. People strive after romantic subjective idealistic values by buying new consumptive goods, which are discarded as soon as it becomes clear that these (material) goods cannot satisfy idealistic values [42].

7. Macro history

The historical sequence in which the perversions of the respective worldviews have occurred suggest a counter-clockwise successive domination of worldviews, as depicted in Fig. 5. Although such a structural pattern is not a prerequisite for the central thesis of this paper, it might indicate the direction of societal change. Following earlier macro historic studies [43] a counter-clockwise development starting in the upper right subjective idealistic (SI-)worldview and ending in the lower right 'Post-Modernist' (SM-)worldview is seen as a meaningful interpretation of the last two millennia. Complementary to the dynamical behavior within worldviews, the behavior between worldviews adds to the plausibility of such a temporal succession.

Sorokin considers the SI-worldview a reaction to the decline of the preceding Roman sensate culture which was dominated by the lower right worldview with its passive sensate mentality of 'Carpe diem'. As more and more individual people were inspired by early Christianity its influence grew, as well as the need for organization and institution. The 14th century Arab thinker Ibn Khaldun stated that an inspired human group may initially have a large collective solidarity or *asabiya* and a subsequent capacity for collective action. Referring to Khaldun, the ecologist-historian Turchin [44] finds in the historical accounts of the rise of Christianity, as well as other religions, evidence that this collective action takes the form of an autocatalytic process. An initially small but inspired population with a small territory and 'ethnic momentum' has great solidarity among its adherents and their shared conviction gives them the willpower to convince and eventually conquer other peoples and expand. In the process, their ideas become more widespread and consolidated and claim to be universal – at which point the AI-worldview has become dominant. It is striking that the corresponding value in the original survey (Fig. 2) was 'giving', representing the drive to 'give' to, or force one's ideas upon other people.

The 'asabiya' of the early Christians transformed them sometimes with violent change from a sect into an official and dominant religion, the Roman Catholic Church; subjective idealism was replaced by absolute idealism. The new universal truth of science left little or no room for diversity or dissent either. This provoked an increasing number of conflicts between the institutional religious beliefs (Church) and the empirical reality and logical deductions as observed and deduced with senses and ratio (Science). The life of Galileo Galilei is one of the best-known illustrations. Finally science had become the new authority, as indicated in Fig. 5. The shift from the upper left absolute idealistic quadrant (Middle Ages) to the lower left absolute materialistic worldview occurred somewhere between the Renaissance (1500) and the beginning of the Enlightenment period (1650) and initiated the period of *Modernism* and the industrial revolution.

In reaction to the Industrial Revolution and the rational and materialistic Modernism fuelling it, there was a temporary movement back to the spiritual and subjective value orientations ('feelings') of the upper right worldview in the form of the 19th century Romanticism. Culture was dominated by the values which are typical for subjective idealism, which came to expression in visual arts and in music. However, at the beginning of the 20th century this movement gradually had to give in to a countermovement from the opposite absolute materialistic (AM-)worldview. Initiated by a group of positivist scientists called the Wiener Kreis, the overripe spiritual and subjective values were replaced by the objective materialist rationalism of the Modernist AM-worldview in a social action–reaction mechanism and the original (counter-clockwise) course of history was resumed.

This domination of the opposing worldview on the century scale is super-imposed on the millennium fluctuation as described in Fig. 5. Such action–reaction mechanisms most likely occur over a whole (spectral-) range of higher frequencies, even on the time scale of decades. The pattern of higher frequencies super-imposed on (dominating) lower frequencies can be understood as similar to the turbulence spectra of fast flowing fluids (such as water and air).

The increasing materialistic orientation triggered at the same time a more individualistic attitude. Many material goods are rivalrous (in an economic sense) and thus provoke individual appropriation, corresponding to the value of 'taking' in the survey results in the lowest part of Fig. 2. This implied that already at the transition from the absolute idealistic to the
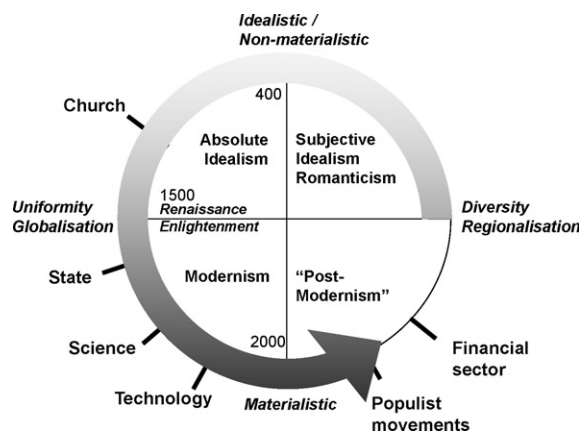

Fig. 5. Macro history and dominating authorities.

Modernist worldview during the Enlightenment, the value orientations begin to shift to the lower right worldview which can be seen as 'post-modernist'. This mechanism additionally clarifies the circular nature of the overarching integral worldview; as soon as a given worldview starts to dominate, the shift to the next worldview has begun.

Following Hegel, also Fukuyama [45] concludes that the development has to reach its final stage in the Post Modern (SM-)worldview in which the hedonistic physical well-being and safety are the only values left, leaving nothing else to fight for; 'the end of history'. Both Sorokin and Turchin gave implicit suggestions for this transition pattern, which is also related to Holling's adaptive cycle [46]. As indicated by Inayatullah [47] in all these studies the fourth phase 'is a chaotic stage where reality is not fixed at a particular point'. Sorokin [20] expects that finally 'a new charisma will lead western culture out of the crisis of atomization of values' through a new transition to the upper right subjective idealistic worldview. This then compares to the previous round where the sensate Graeco-Roman culture ended through the emergence of Christianity (in the upper right worldview).

Herewith both Sorokin and more general the 'theory' of a counter-clockwise cycle would suggest or predict a further development in the direction of the initial upper right subjective idealistic (SI-)worldview. Recent developments indeed confirm such a prediction. The early signs of this orientation can be seen in the anti-globalization movements, the renewed interest for spiritual values and most recently the popularity of 'transition towns', in which autarky on the local scale is pursued.

This macro historical description is based on mechanisms of mutual interactions of worldviews within a certain cultural system. This then leaves the question of the relation of the western culture to other global scale cultures. In 'The Easternization of the West', Campbell [48] describes how the modernist value orientation of the west with its universal truth assumption, is overripe and eroded. It brings him to the conclusion 'that the West has to turn to the (values of) the East, because there is no other way to go'. He suggests the Post Modernism value orientation with its pluriform truth assumption to correspond to eastern values. Although beyond the scope of the present paper, another hypothesis could be that global cultures are part of the same macro historical pattern, balancing each other at opposing positions in the integral worldview. This then holds the promise that global sustainability finally will be reached by reconciling, integrating and thus balancing presently one sided global cultures.

8. Ethical framework, human dignity and freedom

The problem of societal discontinuities and sustainability appears to be the outcome of overshoot and collapse of human value orientations. Given the processes described in Section 6, due to centrifugal forces the dominating worldviews shift gradually over time in the direction of the periphery. Combined with the macro historic understanding that the historical development can be seen as a circular movement around a certain 'centre', the pattern arises in which the increasingly widening historical cycles result in overshoot, collapse and loss of sustainability. In 'The Second Coming' the Irish poet William Butler Yeats [49] describes this process in the metaphor of the falconer (in the centre) and the falcon, flying in widening circles (gyres) around him:

> Turning and turning in the widening gyre
> The falcon cannot hear the falconer;
> Things fall apart; the centre cannot hold;
>
> Mere anarchy is loosed upon the world,
> The blood-dimmed tide is loosed, and everywhere
> The ceremony of innocence is drowned;
> The best lack all conviction, while the worst
> Are full of passionate intensity.

Apparently continuity and sustainability only can be maintained as long as 'the falcon can hear the falconer', as long as the 'centrifugal forces' ('the worst, who are full of passionate intensity') are compensated by 'centripetal' forces (of 'the best'). It follows that centrifugal forces can be seen as negative. On the other hand, centripetal forces will counterbalance the centrifugal ones and can be seen as positive or 'good'. They bridge the opposites, for example through understanding of the need to maintain a balance by empathy, compassion or 'love' in the broader meaning. It should be noted that centripetal forces in one worldview might be centrifugal ones in another, as depicted in Fig. 6. What is 'good' within one worldview is 'bad' within another.

The integral worldview thus offers an ethical framework which is at the core of many religions and cultures. In Christianity, an important root of the western civilization, the two greatest commandments are (Matthew 22 and Marc 12): 'You shall love the Lord your God with all your heart and with all your soul and with all your mind. This is the great and first commandment. And a second is *like it*: 'You shall love your neighbor as yourself'. The two commandments which explicitly are described of equal weight ('like it') correspond respectively to the vertical and horizontal axis of both the Celtic cross [50] and the integral worldview. Also in Islam this is the central message as Prophet Muhammad said: 'None of you has faith until you love for your brother what you love for yourself' (Sahih Bukhari, Kitab al-Iman, Hadith no. 13). More general the message with respect to the horizontal axis is known as the golden rule or ethics of reciprocity, which already was mentioned with respect to the maxims of Kant. The message is to develop centripetal forces, in particular 'love' in the wider sense of the word, as the essential force countervailing the centrifugal forces.
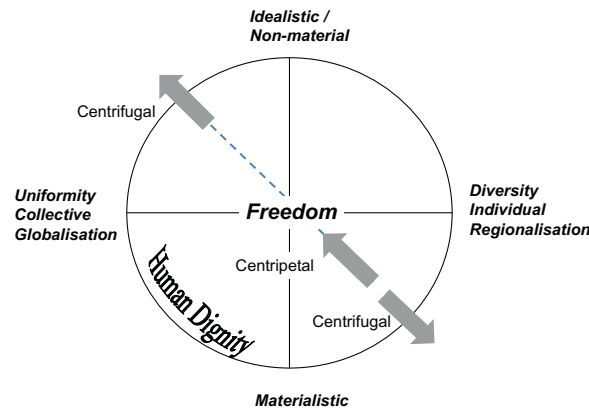
Fig. 6. The integral worldview as ethical framework and representation of human dignity; centrifugal and centripetal forces.

In doing so, the dominating value orientations remain within a certain distance from the centre of the integral worldview. Within this domain, value orientations in one of the individual worldviews or quadrants are not that extreme or one sided that respect for opposing value orientations is lost. This area within the circular boundary of the integral worldview thus defines 'human dignity'. Within that circle the separation between opposing orientations remains small enough to maintain coherence between these orientations and to avoid one sidedness. To quote Jung [51]; 'But when the separation is carried out so far that the complementary opposite is lost sight of, and the blackness of the whiteness, the evil of the good, the depth of the heights, and so on, is no longer seen, the result is one-sidedness, which then is compensated from the unconsciousness without our help'. The latter means that the unconsciousness and uncontrolled forces outside the circle cause discontinuities and catastrophes. It should be noted that the opposite of such a 'bad' orientation at an extreme position outside the circle, is not a 'good' one at the other side, but another 'bad'; the 'good' is in between, somewhere in the middle [52].

Herewith the definition of the 'integral worldview', as discussed in chapter 3, can be taken one step further. The integral worldview, which its earlier discussed circular nature, is restricted to value orientations within the circular domain of 'human dignity' in Fig. 6. It describes the typically human value orientations to the extent that they 'integrate' these values, that is to say strengthen the mutual cohesion between these values.

Staying away from the periphery means that individuals or societies are no longer determined by the one-sided identifications, either by the ego or the collective, or by 'heaven' or by 'earth'. This implies that in the centre, at the largest possible distance from the periphery, real 'freedom' is realized. This clarifies why Hegel [17] saw 'freedom' as the ultimate result of the macro historic process in which 'die Weltgeist' is brought into expression. It also clarifies that this position is not another ideology; it is just the other way round. It stays away from the earlier ideologies and utopia's which are the manifold expressions of the periphery as the forebodes of catastrophe. The search for the (centre of) the integral worldview is a process in which man and society are liberated from these ideologies.

9. Sustainability and its policy implications

In a sustainable society, overshoot and collapse should be avoided and all four worldviews can be expressed more or less within the boundaries of the integral worldview (Fig. 3). Development is sustainable if some balance between material and immaterial and between individualist and collective values can be maintained. In this definition sustainable development is identical to maintaining 'human dignity', where human dignity coincides with the adjusted definition of the integral worldview. In contrast with the individual worldviews, the integral worldview to a large extent is time-invariant. Herewith the Brundtland-paradox between (competitive satisfaction of) the needs of the present and those of the future generations is solved. Present and future needs coincide with the realization of human dignity as defined here. In the unique case that present and future needs both refer to the thus defined and articulated notion of human dignity, the intergenerational question in the sustainability problem is solved.

This implies that the present ecological crisis only can be solved by shifting the present domination of the extreme Postmodernist worldview to the centre of the integral worldview. Such a shift should not result in an overreaction towards one of the other worldviews. One-sided domination of another individual worldview will not be a solution. One sidedness of the region-oriented worldviews on the right hand side is inadequate as regionalization hampers modernization and the subsequent demographic transition which in many regions still has to take place. Further population growth forms a threat to sustainability. Renewed domination of the globalizing lower left absolute materialistic worldview would cause an enormous further increase of environmental impacts given the high economic growth fueled by material consumption. Reinstatement of the upper left 'global governance' worldview depends heavily on global participation and can only be successful with global institutions and regulations. These run the risk of becoming ineffective due to bureaucracy and corruption.

This exactly follows the suggestion of Sardar [53] 'not to return to old exclusivities and determinisms, but to make the transition to a new kind of adaptability and flexibility in which every perspective and worldview participates in seeking solutions to our collective problems'. Indeed no single one-sided worldview can generate a sustainable world.

Nevertheless, in the inevitable situation of nine to ten billion people in the middle of the century, the shift to less materialistic value orientations and corresponding consumption patterns might temporarily surpass the earth carrying capacity. In the left hand side globalization worldviews, the world population is expected to decline after 2050. On this longer term, a societal development which stays within its own boundaries of human dignity is also expected to stay within the boundaries of the physical earth (Rockstrom [54]).

A final but important question remains: who determines the nature and position of the integral worldview and the subsequent ethical frame of reference. Although social surveys, philosophical notions and historical experiences lead to a rather consistent pattern, socialists might argue some shift to the left, while capitalists might favor a shift to the right. Habermas [55] argues that a more or less common understanding of the integral worldview, corresponding to what he calls 'societal cohesion', is the ultimate objective of democracy. This understanding is always preliminary and should be discussed continuously. It might be argued that this discussion should be without any restriction and without any claims for offence possible. However, once there is a reasonable consensus about the nature and position of the integral worldview, strong centrifugal shifts might be detected and discouraged in a much earlier phase. The reversal of ends and means in the financial sector, occurring in the current Postmodern worldview, is an example.

Practical sustainability policies thus can be derived from the systematical integration of opposing values in the integral worldview. Such an agenda addresses the balance between public-private responsibilities, between global and regional production and trade patterns, stimulates the balance between material and cultural consumption, legitimizes policies based on both technological fix and behavioral change and mobilizes both the feminine and the masculine qualities in society. The agenda has implications for the organization of government, in abandoning the antagonism of majority governments, in order to devote the available energy to problem solving, rather than continuous political power play. It finally has consequences for the financial-economical system, given the conclusion that legitimate value creation only can be realized for the values within the integral worldview, and thus the domain of human dignity. For many current economical activities, such as the creation of money out of money, this is not the case.

10. Conclusion

Sustainability is synonymous with human dignity. Development is sustainable if the democratic policy process is driven by an integral worldview, which is continuously recalibrated in open public debate. A civilization apparently not only requires a democratic system, but also an explicit integral worldview. This integral worldview was derived from societal enquiries, philosophical insights and evaluation of the historical process over the past millennia. In this integral worldview, a fundamental and typically human balance has to be maintained between material and immaterial value orientations and between individual and collectivity oriented value orientations. In stead of remaining implicit, these values and worldviews should become as explicit as possible. That would allow politicians to recognize and timely compensate the centrifugal forces, which polarize the public debate, reinforce one-sidedness, turn worldviews into their perverted extremes and result in catastrophes as so often happened in the past.

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