Favouring the Future
— Exploring individual and collective strategies

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Abstract

Many sustainability issues are characterised by displacement in space and time between cause and effect, culprit and victim. Displacement into the long-term future poses particular challenges for decision-making and governance which tends to be biased towards much shorter time horizons than sustainable development requires. For some issues there are clear win-win situations between short- and long-term priorities, but for many there are considerable trade-offs, not necessarily on a societal level but for certain groups, sectors or even individuals. Several types of institutions at the national and international level need minor or major adjustments to 'favour' the future. In this paper we explore elements of both individual and collective strategies to strengthen decision-making in favour of the future. In the first section we discuss individual decision-making from a bounded rationality perspective, showing that relatively simple strategies used by individual decision-makers, drastically improve decision-making. Then we in turn look at three complementary elements for sustainable decision-making; time horizon (main focus), system thinking and process orientation — to illustrate individual decision-making for the future. In the third section we turn to collective strategies for favouring the future in both global and national governance systems through institutional measures, creating bodies which are explicitly responsible to address long-term problems. Finally, we tie the discussion on individual and collective strategies together, pointing to how intricately linked they are and the need to identify trigger points in the system which enables these strategies to take root and thus support a faster transition to a society where the future has a stronger presence.

1. Introduction

Many of our environmental problems are characterised by displacement in space *and* time between cause and effect, culprit and victim. We are quite familiar with this happening in spatial terms and the injustice it often creates. Most vulnerable groups, individuals, communities and countries that are hardest hit are often those least to blame (UNEP, 2007). The focus of this paper, however, is displacement in time that may or may not involve spatial displacement as well. The displacement in time and how to deal with it has been relatively less subject to analysis.[1]

The issues that are characterised by displacement over long time horizons can be referred to as long-term policy problems. Sprinz (forthcoming) has provided a definition of long-term policy problems as spanning over one generation (25 years).[2] However, problems where the displacement occurs over much shorter and longer time periods than 25 years share similar types of challenges for decision-making. Another categorization of problems, which is directly linked to their dynamics over time, is the following; "Easy" or soft problems are those that can be solved with certain actions that directly contribute to a better outcome over time. For hard problems an action that will contribute to a better outcome in the longer horizon is first leading to an immediate worse outcome, while an action which is bad for the long term outcome is scoring a better evaluation in the short term.[3] It is such hard problems which is the focus of this paper.

Besides the hard and easy problem dichotomy, underlying reasons for why it is so difficult to favour the future in decision making can be found in three domains; values, knowledge and institutions (rules). Together these influence the decision making of individuals. In mainstream models of individual decision making models based on rational choice the inabilities of individuals (both in their personal life and as policy-makers) to make good decisions when faced with complex issues (such as those hard problems of high importance for sustainability) colour the analysis. We instead argue that individuals *are* able to make proper decisions with the aide of relatively simple tools, even in complex systems. We also argue that since culture and the spirit of the times might actually be important, the rising awareness and

[1] But exceptions include e.g. microeconomic analysis of time preferences and normative theories of intergenerational justice.

[2] He also addes several additional criteria for problems to earn this term, such as them being surrounded by considerable uncertainty, and it is not possible to 'solve' them over a couple of legislative periods (Sprinz, forthcoming).

[3] This analysis of easy and hard problems was made by Meadows in a presentation entitled "What is the Real Situation Regarding Climate Change and Oil Depletion" on 8 March 2006.

sense that humans actually can affect the global environment may lead to a potential for favouring the future.

In this paper we explore elements of both individual and collective strategies to strengthen decision-making in favour of the future. In the first section we discuss individual decision-making from a bounded rationality perspective, showing that relatively simple strategies used by individuals as decision-makers are used successfully even regarding decision-making in complex issues. Then we in turn look at three complementary elements for sustainable decision-making to illustrate individual decision-making for the future; time horizon (main focus), systems thinking and process orientation. In section three we turn to collective strategies for favouring the future in both global and national governance systems through institutional measures, creating bodies which are explicitly responsible to address long-term problems. Finally, we tie the discussion on individual and collective strategies together in section four, pointing to how intricately linked they are and the need to identify trigger points in the system which enables these strategies to take root and thus support a faster transition to a society where the future has a stronger presence.

2. Individual strategies

The degradation of the environment is by no means a simple issue – therefore to perform "sustainably" sound decisions as an individual can be perceived as an impossible task, at least in the framework of rational choice theory. Rational choice sees the shortcomings of people who constantly fail to reach the ideal of perfect rationality. Rational choice demands information and computational skills as a basis for making decisions that simply are impossible to achieve, specially trying to look a the future consequences for the environment of our decisions.

Therefore, the individual perspective of this paper parts from the idea that sustainable choices can be made through the framework of simple heuristics as proposed by Bounded Rationality, instead of being impossible to perform from a rational choice perspective. As argued by Herbert Simon, the founder of bounded rationality:

> "Broadly stated, the task is to replace the global rationality of economic man with a kind of rational behaviour that is compatible with the access to information and the computational capacities that are actually possessed by organisms, including man, in the kinds of environments in which such organisms exist." (Simon, 1955).

We suggest that simple heuristics – exemplified here by systems thinking, process rather than goal orientation and above all extended time-horizon – may then help individuals as decision-makers to carry out strategies for "sustainable choice". While Rational choice sees the shortcomings of people who constantly fail to reach the ideal of perfect rationality, bounded rationality sees the abilities and skills people actually have. It is worth to reflect on that individuals and humanity have achieved many extraordinary positive things over its history and are probably capable of even more.

The concepts of ‘sustainable choice’ and ‘sustainable human’ are developed in this paper and defined as applied examples of boundedly rational behaviour. Bounded Rationality and its simple decision-rules will be briefly explained below. Sustainable choice and sustainable human give emphasis to a behavioural pattern that takes into account certain issues that may contribute to the actor’s ability to make sustainable choices. We define sustainable choice as a practice which would not hinder its own opportunities to continue and sustainable human we define as an individual that performs sustainable choices). Besides bounded rationality fundamentals regarding how decisions actually *are* carried out (descriptive) the concept of sustainable choice developed here argues for three strategies that should (normative and tentative) facilitate sustainable decision making; increased time horizon, systemic thinking/understanding, and process rather than goal orientation.

In the next section we give a brief introduction to bounded rationality and its relationship with rational choice theory which is followed by the normative application in the light of the three strategies and bounded rationality referred to as “sustainable choice”.

2.1 The nature of human decision-making according to bounded rationality

According to Herbert Simon and the bounded rationality tradition, minds with limited time, knowledge, and other resources can nevertheless be successful by exploiting structures in their environments. In these real-world cases it is possible that simple and robust heuristics can match or even outperform a specific optimizing strategy.

> “Human rational behaviour…is shaped by a scissors whose blade are the structure of the task environments and the computational capabilities of the actor” (Simon, 1990:7).

In short it tries to weigh in both the individual and the environment, or, one blade being the “cognitive limitations” of actual humans and the other being the “structure of the environment”. The three main features characterize Simon’s original view of bounded rationality are search rules (search for alternatives), stopping rules (satisficing) and decision rules (aspiration adaptation). These three features still seem to be relevant in the development of bounded rationality (Gigerenzer and Selten, 2002).

Firstly, bounded rationality is characterized by simple search rules in the search phase. Secondly, simple stopping rules are also highly relevant regarding bounded rationality. Hebert Simon defined simple stopping rules by the concept of “satisficing” (Gigerenzer and Selten, 2002), it does not have to be perfect, just good enough. Thirdly, after search and stop comes the moment of truth regarding bounded rationality, simple decision rules in a specific context. The study of these conditions is part of the study of ecological, or context depending, rationality (Gigerenzer and Selten, 2002). There are quite a few examples of these at work such as imitation, take the first or best, equal weighting and small sample inferences.

Two dimensions referred to in bounded rationality are emotions and culture (these can be seen in the framework of the three domains values, knowledge and institutions). Emotions can influence all aspects of decision-making; background emotions (when happy remember happy things), task-related emotions and anticipated emotions (for example anticipated regret if one chooses the non-familiar product or else). Humans are probably heavily reliant on cultural transmission and culture affects decision-making. In the language of bounded rationality it can be defined as follows:

> "Cultural transmission capacity allows individuals to shortcut costs of search, experimentation, and data processing algorithms, and instead benefit from the cumulative experience stored in the minds (and observed in the behaviour) of others" (Henrich et al, 2002:344)

Being part of society means having limitations on behaviour, still not many people see being part of society as giving up a lot of things in the same way as being part of social and civil institutions does not. The most sensitive issue is, as Amartya Sen (1999) puts it, what "normal" behaviour in a certain context means. People do abide by institutions/rules probably, mainly because of their current morals and cultural values, depending on how they have been conditioned. Therefore, there might be hope for the force of culture and positive emotional trade-offs in society that increasingly put sustainability as an overarching principle to follow.

2.2 Decision making for a 'sustainable human' rather than a 'rational man'

The three strategies concerning sustainable choice described here are here are increased time horizon, process rather than goal orientation and system thinking. They are intertwined and work parallel with each other; with the ability to extend the time horizon, another kind of systemic thinking that takes into account delays in particular systems can be applied. Process orientation has much to do with a systemic perspective since cause/effect relationships are manifested not straight forward, thus opening for the potential of looking at the system.

2.2.1 Increased Time horizon

Increased time horizon means that the actor weighs in a dimension beyond the here and now in the decision making process to a greater extent than un-sustainable choices. Why increased time horizon? Ulrich Beck in his work regarding what he calls the 'risk society', argues that with modernity comes the ability to plan the future in a way that was impossible earlier, this ability to plan of course causes the tendency to see risks beyond the here and now (Beck, 1992). Therefore sustainable humans' increased time horizon actually might be more out of caution than out of some kind of goodness. Our availability to obtain information is of course another thing that facilitates our ability to keep track of historical and prospective processes and impacts more than earlier. The increased time horizon in sustainable choice would hopefully lead to the ambition of increasing the amount of time an activity can continue making it easier to consider long time trade-offs. This time horizon does not exist independently of the interest of a

sustainable human, it is focused on describing how the individual decision-maker might think in relation to reach the conclusion if a practise is sustainable on a desirable level or not.

2.2.2 Process rather than goal oriented

In science and society adequate processes are assured by procedural rules and regulations of more or less concrete character, from legal procedures to established scientific methods. They have in common that they do not focus on the content, like who did what to whom, or, is this scientific work about this or that, but on *how*. Strangely enough, we give a lot of focus to ends rather than means in our societies, even if the means are what we might disapprove of the most. If an individual wants to rule the world and sets out on a quest to convince others through a democratic process trying to make as much people as possible happy - are the means by which it is performed shadowed by the purely egoistic ends for doing it?

As an individual consumer trying to make a certain purchase the process orientation in relation to sustainability becomes relatively clear. For many people, the issue is not whether to consume or not consume meat, the issue is to try to secure that the process from the farm to the stake on the plate has been carried out in the right sustainable way. The meat might taste the same, but for a sustainable consumer, the process (how it got there) rather than the goal (the actual taste of the meat) is what matters.

With a good method or process any human activity has the potential to be repeated *ad infinitum*, while a goal, when reached, is realized and therefore consumed. The "process issue" is nothing revolutionary, there are more or less formalized and easy to understand process but there always are processes in human activity, individually and institutionally.

2.2.3 Systems Thinking

Understanding a process is essential to understand the development of an issue, but even more so, understanding how different things are systemically interconnected is a theme of its own. To see patterns and see the role of the actors and their actions in a system is essential for being able to check or be informed about if the 'Behaviour Over Time'.[4]

Systems thinking is about individual decision-makers not only extending the scope in time of the consequences of certain decisions – but rather looking sideways at how other problems might surge in the aftermath of a decision, including looking at other spatial scales both smaller and larger (this is a parallel to the strategy of taking a global rather than national perspective in developing indicators, see section 3.3.2). Ecologically speaking, an example of what happens when this is not done would be the

[4] See for example Sterman, 2004 for a good description of this concept essential to systems dynamics) is sustainable or not.

incorporation of new species in Australia to counter the effects of former ones, solving a problem but creating another.

Maybe, in the light of Beck's "Risk Society" and the impact of the environmental movement, through experience we have become increasingly aware about involuntary consequences of our behaviour and reluctant to proceed without thinking systemically.

2.3 The individual as an individual vs. the individual as a policy maker

The three cornerstones of sustainable decision-making processes as suggested above contain three dimensions that are relevant both for people as individual decision makers, as consumers, citizens, voters, travellers and as policy-makers making decisions for others. Here probably some rules of thumb (or simple heuristics) might really be something to abide to. Firstly, we should go beyond your own mandate and generation to ask, what the consequences are for this in the long run – beyond the cynicism "in the long run we are all dead". Secondly, *how* we are going to get to a goal is as important as what we are going to achieve, with out understanding of limitations of different kinds, leaving a decision of 'how' to technocrats might become simply impossible. Paying attention to how the decision-making process is carried out is also relevant. Thirdly, paying attention to the fact that the effects of policy not only have to be seen in the light of the future but also in the light of a system. We may welcome poverty eradication in large parts of the world, at the same time; it is not possible for the world to walk the same path as industrial societies to achieve high living standards. While there is a right for humans to have a good life, the case is not that all humanity must make the same mistakes industrial societies are doing or have done.

3. Collective strategies

The previous section explored individual decision-making in the framework of value systems (as reflected in culture) and decision-making strategies. Here we concentrate our analysis on the collective decision-making processes in society, particularly in the knowledge and institutional domains, which in turn of course are closely linked to individual decision-making. Firstly, we highlight some of the problematic components in knowledge systems, which make it difficult for us to favour the future. Secondly, we look closer at several aspects of institutions in both national and global governance which may constrain decisions for the long term good. Building on this problem analysis we then propose an indicative list of collective strategies for better 'favouring the future' and briefly explore what they could involve.

3.1 Problems in the knowledge system

The inherent uncertainty about long-term impacts of actions taken today we have to live with to a certain extent, but there are still aspects of the type of data we collect and indicators we rely on which we can influence. However, it the type of data, information and knowledge which is collected and compiled for

— often at the request of — (inter)governmental decision-makers are often biased towards short-term horizons. One example of this is that most influential indicators in e.g. national accounts, measure flows rather than stocks in the system. The GDP as the most regarded of all indicators of development refers to the market value of all *the output* produced in a nation in one year. A reliance on flow indicators means that the aggregated impact on the stock of e.g. social, economic or natural capital is ignored (Meadows et al., 2004). The partial invisibility of stock indicators can be seen as a reflection of the underlying assumption that there is complete substitutability between different types of capital which by itself creates a bias against considering carefully the impact on the future or decisions today.

Another limitation of the current information and knowledge system is the predominance of indicators that concern spatially limited areas, often nation states that represent only a small part of the earth system. National economic, social and environmental indicators, even in those cases when they refer to stocks rather than flows, often ignore the impact from activities in one country on its neighbours. Such spatial displacement when it includes impacts on e.g. the natural capital of other countries inevitably is accompanied also by temporal displacement of effects.

A third problem is that data and indicators tend to be narrow in a temporal sense. Indicators are collected at discrete points in time reflecting the state of a variable as a result of historical processes. Many times the number of data points is very small making it difficult to extrapolate any trends towards the future. One example is the EU-wide indicators for sustainable development some of which exist only for three separate years. Even if there is longer time series it is often not possible to compare data points over time because there has been changes in calculations etc. A related problem is that indicator sets can only be developed for known variables, ignoring possible new type of impacts which are previously unknown.

Finally, a more overarching problem is that in many governance contexts there may not be enough resources to collect data and information that would be relevant for more long term planning. This is the case in many developing countries where basic e.g. environmental data, statistics and research are very limited (Karlsson et al., 2007). Furthermore, in inter-governmental organizations (IGOs) there are generally insufficient funds to develop the intelligence for early warning systems of conflict, natural disasters etc.

3.2 Problems in the rule system

Institutions — here used in a broad sense encompassing individual norms, rules, systems of rules and decision-making procedures, which influence individual and collective action — range from social codes of conducts and the forms of family decision-making to national and international laws and rules for elections. Those institutions which are intentionally designed by collective processes constitute a key

element in governance. Governance in general tend to be biased towards much shorter time horizons than sustainable development requires and the particular design of institutions have a share in explaining why this is the case. The design of institutions is of course also a reflection of predominating values in society and is located at the core of the structure-agency debate. There are many candidates for individual rules and systems of rules (institutions) which favour the present more than the future and we narrow our analysis to the following four.

In government the demands of democracy to hold elected bodies to account at regular intervals at local, regional and national levels, usually in four year cycles, has implications for the time horizon of planning and decision-making. While this 'impermeancy of power' creates a system of accountability towards the citizens living now, in situations where long-term problems require unpopular sacrifices (or even only attention) the government may be unwilling address them for fear of not being re-elected. Prominent examples of such issues are infrastructure investment, violent conflict, corruption and climate change (Sprinz, forthcoming).[5] The regular replacement of governments may also be accompanied by changes in senior staff, change of direction or even reversal of earlier policies in the government, all of which makes it difficult to stick with goals (if such exist) adopted for the long term future.

In global governance the UN system with its operational agencies have in many aspects even larger constraints to deal with long term issues than national governments. Their planning horizons tend to be relatively short with a focus on crises management rather than long term prevention. This is a result of, for example, short budget cycles with recurring budget crises due to unreliable income (specially those funds that depend on voluntary donations by governments. Additional financial resources tend to arrive only after a crisis has occurred and hit the public attention. This means, for example, that IGOs often rely heavily on consultants rather than permanent staff which can reduce the in-house capacity and institutional memory and thus the ability to work with longer planning horizons.

The direction of UN organizations is led by member governments which for democratic states may change at regular intervals. There is no global parliament that remains when governments change in the global arena. The continued support for e.g. adopted long term global goals then depends on the degree of consensus on such foreign policy issues across party borders in national parliaments. It is worth

[5] This is not to say that non-democratic regimes with leaders in power over longer time spans (monarchies, dictatorships etc.) have been better at dealing with such problems. They may have had a more favourable institutional setting to do so, but history has surely shown that the kind of long-term planning they did accomplish were often not directed at the well-fare of the people, but rather at building war machines, or building monuments at high sacrifice of lives etc.

to note in this context that the accountability mechanisms for foreign policy positions in relation to a country's citizens are usually weaker and different than for domestic issues. In many countries there is considerably less involvement of the parliament in international and global issues which means that unless there is a strong media and civil society that monitor the governments' positions and performance it is quite easy for a government to quietly change their position on such global goals and/or simply reduce their support to them. Countries are very reluctant to efforts of monitoring the implementation of their commitments towards global goals and targets, a prominent example being the Commission on Sustainable Development where they avoid any type of formal country review although it is the body's mandate to follow-up the implementation of Agenda 21, the JPOI etc.

In the domains of the market, finances and money in general, there are a number of institutions which disfavour the future. Some of the rules are set by the government whilst others are developed in the private sector. Among such institutions are interest rates, the discounting of the future values in accounting practices, the quarterly demand on companies to produce reports on profits etc. We will not discuss these in more detail here.

3.3 Possible strategies for favouring the future

The outline of the challenges in the knowledge and institutional domains give some hints of where strategies to favour the future can be targeted. The collective strategies for favouring the future that are suggested below are very explorative, with no claims of comprehensiveness and with limited empirical grounding. Our objective is to scan the possibilities and provide ideas for future research endeavours.

3.3.1 Adopting collective visions: the inspirational strategy

Clear and unifying visions for the long term future around which broad support can be gathered may serve as inspiration and motivation for both individual and collective actors. Martin Luther King's and Mahatma Gandhi's visions served this purpose and their visions were at least partially realised. With time society seems to be moving from relying on visions from charismatic leaders developing deliberative processes where such visions are formulated. This is why it is a strategy we can be embarked on collectively in societies. We find examples of this in, for example, human rights, sustainable development, climate change etc. At the same time, for a majority of people in the world it is the visions of, for example, a peaceful future emanating from the founding Figures of world religions which serve as a significant source of inspiration. These often include visions of lifestyles centred on something beyond material acquisitions, a global and long-term perspective on humanity's future.

3.3.2 Changing the numbers: the information strategy

Another strategy for expanding the time horizons of societies, including governments, is to target the numbers which it relies on for decision-making which means changing the accounting measures and indicators which they use and in this way make the impact of current decisions on the future more visible. In general this would involve better more long-term data series and research. A more direct way of doing this is through intergenerational accounting which is a method to show what liabilities present societies put on infinite future generations. One approach referred to as Intertemporal Public Liabilities and has been calculated for European and other OECD countries (Sprinz, forthcoming). This measure shows in effect how "sustainable" public financial affairs are.

Another approach is to develop and use more indicators of stocks rather than flows. These would be valuable not only for non-renewable resources but also for the sink-capacity of ecosystems. There are more positive movements in this direction in political circles such as the parallel EU/OECD processes looking for measures 'Beyond GDP' and in research in industrial ecology.[6] The World Bank's work on 'genuine savings' is another contribution in this direction as it attempts to measure "the true rate of savings in an economy after taking into account investments in human capital, depletion of natural resources and damage caused by pollution".[7] Another related way to make the numbers be more relevant for the long term future is to develop global scale indicators which would tell something about the impact on the Earth System and thus concern the total available stocks in a closed system. One well-known example of such a global indicator is the Global Ecological Footprint but many more should be developed not only in the environmental domain but also in the social and economic domains where data collection and indicators are even more bound to national borders.

A third direction is to develop scenarios of alternative futures, including extrapolating as a way of consciously thinking and generating information of what choices today may mean for the future. Such scenarios can be qualitative based on story lines, or quantitative generated by models. The development of scenarios has taken off since the 1970s pioneered by the work of the oil company Shell. In many cases scenario methodology has been applied to environmental issues regarding, exploitation of natural resources. A very good example of how scenario planning can be used to create a road map for the future is the Swedish study "Destination Future: Pathways towards a sustainable transport system" [translated title] (Åkerman, 2000). This is a back-casting study of 2040. Back-casting means that the study starts at a desired end state and then works its way to decisions necessary to take in the present

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[6] See for example http://www.beyond-gdp.eu/.

[7] See http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTEEI/0,,contentMDK:20502388~menuPK:1187778~pagePK:148956~piPK:216618~theSitePK:408050,00.html

3.3.3 Changing the rules of and in governance: the regulatory strategy

The problems in the rule system discussed above were diverse and often deeply rooted in the rules *of* governance but also in the rules and process that are created *in* governance to achieve certain ends. This is really a cluster of sub-strategies addressing different types of institutions at different levels. Some of them are rather obvious solutions, like securing a more stable funding basis for IGOs, but their simplicity does not mean that they will be easily adopted. Other strategies are more intractable. Here we list a mixed basket of a few broader collective strategies.

The first substrategy – the planning strategy - is about goals, targets and time tables. This implies that concrete (possibly but not necessarily measurable) goals or targets to be reached at specific points of time in the future are adopted at various levels of governance.[8] One example of this strategy in the making are the new wave of very ambitious long term goals of CO_2 reductions in a number of European countries (UK, Germany, Sweden etc. expand with details) and a semi-long term more moderate target set by the EU for 2020. There is shortage of long term goals and targets at the global level, many have no target date (achieving human rights etc.), some have targets (such as Education for All by 2000 adopted by 155 governments in 1990).[9] The Convention on Biological Diversity has a target which is not in exact numbers; to significantly reduce the current rate of biodiversity loss at the global, regional and national levels by 2010. Indirectly Agenda 21 is a 100 year action program with a number of targets that should be achieved embedded in the different chapters (UNCED, 1993). The most prominent current set of targets are the Millennium Development Goals (MDGs) which were adopted in 2000 to be achieved by 2015 (United Nations General Assembly, 2000).

If these long term goals served as the continuous guidance for decision-makers and all adopted policies were evaluated in relation to how they contribute to these, they would provide a consistent direction and long-term horizon in decision-making. Regrettably, this is, until now, usually not what happens. National goals usually come in the form of political declarations of one government which may not survive future elections and are then easily forgotten if there is not a broad consensus for them in the parliament, and continuous attention from the media or civil society. Such long term goals are also likely to have limited impact if there are no immediate steps taken towards reaching them, for example with a firm time-table which includes short term sub-targets. For example, research has shown that by far most of the domestic voluntary goals of reducing greenhouse gases made prior to the Kyoto Protocol by Annex

[8] I am here excluding references to those kind of goals which governments adopt to achieve for the period in which they hold power.

[9] See http://www.unesco.org/education/efa/ed_for_all/

I countries were not reached, indeed they were in many cases quietly scrapped (Binder and Tews, 2004).[10] The fate of global long-term goals is probably even bleaker for the reasons above.

The failure to stick to the longer term goals set by governments can thus be tied to shifting public opinions and shifting governments which create the generally short term planning horizons. Nevertheless, there are examples where the planning horizons are considerably longer than election periods and which do require consistency in commitments (such as budgetary allocations from consecutive governments). Among such examples are the R&D support for major industrial developments such as fusion reactors, space exploration, and satellites.[11] Thus, if the motivation is high enough governments are able to plan for the long-term.

The second sub-strategy involves the changing the rules *of* governance. In situations when there are clear adopted long-term goals one strategy to make subsequent decisions support the achievement of those goals is to create decision-making processes and bodies which are detached from the shifting pressures of day to day decision-making. This can be done by creating special bodies whose leaders are appointed on longer terms and who are explicitly independent. One example is the European Central Bank and other national banks with the responsibility for interest rates etc. A variation of this strategy is to ensure that government bodies are charged with implementing adopted long term goals are created across party lines. This could for example imply to have such bodies linked to the parliament rather than the government. A survey done for the German parliament showed that most of the institutions established in European countries to address explicitly sustainability issues were connected to the government rather than the parliament (Ausschusses für Bildung Forschung und Technikfolgenabschätzung, 2003). In Finland the parliament has established a committee for the future, first as a temporary body but since a new constitution in 2000, it is a permanent committee. Its main task is to review the government's report on the future that it is mandated to release at least once each election period.[12] This created a new type of dialogue between the government and the parliament on the core issues in society. The committee of the future also makes statements on issues of other committees which relate to the future, and evaluates issues of technological development and its societal consequences.[13]

A third sub-strategy is to find ways to give a 'voice' to future generations in decision-making. The concept of trusteeship could be an indirect way of doing this if it could be institutionalised. Sand

[10] Binder and Tews (2004) provide an analysis of the possible reasons for the failure of reaching the goals, as well as recommendations for how to improve the use of goals in environmental policy making.

[11] It is interesting to reflect on why space has allowed for such longer time horizons than planning for life here on earth.

[12] The committee is, however, only charged to look at the future of Finland, not the rest of the world.

[13] See http://web.eduskunta.fi/Resource.phx/parliament/committees/future.htx

(2004) outlines the philosophical and legal background for the concept, lays out the model of international environmental trusteeship as centred around the community (as trustor), states (as trustees) and people (as the beneficiaries, this includes people now and in future). He further argues that it has considerable promise for the development of international environmental governance specific deeds, treaties or customary law. Special bodies can be created who take on the trusteeship of environmental resources for future generations. The Commission on Global Governance in 1995 proposed to create a body in the UN system that acts as trustee for the global commons (or rather that the Trusteeship Council that previously acted as trustees for former colonies took on this new mandate) (Commission on Global Governance, 1995). The concept of trusteeship could be expanded towards acting as trustees for future generations and thus be a way to give a voice to those who cannot speak for themselves.

The last sub-strategy is centred on changing the rules *in* governance. This can be done by relying more on certain types of institutions, primarily through the rule of law. In the suite of institutional forms which are available for governments and the international community, there is a significant diversity in the influence they exert although research which includes systematic comparison between the influences of the different forms is scarce. The institutional forms range from voluntary rules to law in the national context and from soft to hard (treaty or customary) law in the international context. It seems clear, however, that it is more time consuming and costly to develop international hard law, and thus also to change it, see e.g. Reinicke and Witte (2000). This character of hard law together with the frequently assumed higher influence of hard law on state behaviour – see .e.g. Kirton and Trebilcock (2004) can, in those cases when ambitious treaties for the protection of environmental resources are adopted with detailed rules for an extended time horizon, give the kind of stable institutional playing field that is required for states and particularly private actors to move into different directions, such as towards a low carbon society. The value of an increased reliance on the rule of law is illustrated by the bad performance of voluntary national climate mitigation targets discussed above. It is also possible to use the rule of law in a very direct way to oblige a more prudent consideration of impacts on the future through adopting rules of intergenerational liability for public decisions of an intergenerational nature. There is an example in the US where this approach is tested in relation to activities of private companies and the future climate impact of their activities on US cities (Sprinz, forthcoming).

4. Favouring the future, together

These institutions within and outside government both reflect dominating values in society but they also help to perpetuate and strengthen them in short term directions. Some of these institutions just mentioned are inherently discriminating against the future (such as interest rates, or short budget cycles); the underlying value among individuals of favouring now instead of tomorrow is embedded. With some

others however, it is not a default outcome, but an outcome of the values permeating society and its elected representatives. For example, short election cycles could have another outcome if either the electorate valued the long-term future and voted for those who share that value *or* those who are elected were not so eager to stay in power by being re-elected, making them averse to decisions which imply sacrifices for the electorate today. Thus, the permeating values of society and of those individuals who hold power strongly influence the impact of these institutions.

The collective strategies cannot be pursued unless people around the world expand their time-horizons in decision-making (UNEP, 2007). There is a need for building a stronger culture of responsibility to act which needs to be built on global solidarity for present and future generations (UNEP, 2007). This can be supported through various measures including education (Dubois and Trabelsi, 2007) but also through designing institutions that strengthen such encompassing aspirations and commitments (Tan, 2005). This means that there is a strong tie of reciprocity or mutual reinforcement between individual and collective strategies for expanding the time horizon for decision-making. Collective strategies which develop the right "incentives, tools and processes" (Meadows et al., 2004) are essential but they in turn require individual leaders that have the personal motivation to favour the future and think in terms of systems and processes. Here it may be of value to consider the inspirational strategy in a broader context, and also looking at educational programmes and the concern for the future which they encompass (or not).

One of the challenges is that many of the long-term environmental problems we are facing are of such severity, because we are coming closer to the planet's limits and/or there are risks of irreversibility due to processes of exponential growth in drivers, that we need to address these urgently within a very short time frame in order to avoid some of the worst consequences (Meadows et al., 2004). On the positive side we can hope that more and more individuals choose to think as sustainable humans, opting for more sustainable decision-makers and industrial processes as they make their decisions.

Clearly, it will be difficult to change time-horizons of decision-making within a short time span if we only wait for voters and consumes to change their priorities. The regulatory strategy and the visionary leadership of decision-making bodies are essential and maybe even desired by people on an individual basis. We should not forget that decision-makers are individuals who make choices, many times guided by simple rules and gut-feelings that can be surprisingly accurate. The rules of thumb regarding increasing time horizon, thinking systemically and focusing on the process rather than the goal, may be of help when sustainable policies are created.

References

Ausschusses für Bildung Forschung und Technikfolgenabschätzung, 2003. Sachstandsbericht – Langzeit- und Querschnittsfragen in europäischen Regierungen und Parlamenten. Deutscher Bundestag, Berlin.

Beck, U., 1992. Risk Society:Towards a New Modernity. Sage, London.

Binder, M., Tews, K., 2004. Goal Formulation and Goal Achievement in National Climate Change Policies in Annex-I Countries. Freie Universität Berlin, Environment Policy Research Centre, Berlin, pp.42.

Commission on Global Governance, 1995. Our Global Neighbourhood: The Report of the Commission on Global Governance. Oxford University Press, Oxford.

Dubois, J.-L., Trabelsi, M., 2007. Social Sustainability in Pre- and Post-Conflict Situations: Capability Development of Appropriate Life-Skills. International Journal of Social Economics 34, (1/2), 53-65.

Gigerenzer, G., Selten, G., eds. 2002. Bounded Rationality - An Adaptive Toolbox. MIT Press. Cambridge, USA.

Henrich et al, 2002. What is the role of culture in Bounded Rationality? In: Gigerenzer, G. and Selten, G. (Eds.), Bounded Rationality - An Adaptive Toolbox, MIT Press, Cambridge, USA, pp. 343-357.

Karlsson, S.I., Srebotnjak, T., Gonzales, P., 2007. Understanding the North-South Knowledge Divide and its Implications for Policy: A Quantitative Analysis of the Generation of Scientific Knowledge in the Environmental Sciences. Environmental Science & Policy 10, 668-684.

Kirton, J.J., Trebilcock, M.J., 2004. Introduction: Hard Choices and Soft Law in Sustainable Global Governance. In: Kirton, J.J. and Trebilcock, M.J. (Eds.), Hard Choices, Soft Law: Voluntary Standards in Global Trade, Environment and Social Governance, Ashgate, Bodmin, Cornwall, pp. 3-29.

Meadows, D., Randers, J., Meadows, D., 2004. Limits to Growth. The 30-Year Update. Chelsea Green Publishing Company, White River Junction, Vermont.

Reinicke, W.H., Witte, J.M., 2000. Interdependence, Globalization, and Sovereignty: The Role of Non-binding International Legal Accords. In: Shelton, D. (Eds.), Commitment and Compliance. The Role of Non-Binding Norms in the International Legal System, Oxford University Press, Oxford, pp. 76-100.

Sand, P.H., 2004. Sovereignty Bounded: Public Trusteeship for Common Pool Resources? Global Environmental Politics 4, (1), 47-71.

Sen, A.K., 1999. Development as Freedom. Oxford University Press, New York.

Simon, H.A., 1955. A Behavioral Model of Rational Choice. Quarterly Journal of Economics 69, (1), 99-118.

———, 1990. Invariants of Human Behaviour. Annual Review of Psychology 41, 1-19.

Sprinz, D., forthcoming. Long-Term Policy Problems: Definition, Origin, and Responses. In: Wayman, F., Williamson, P. and Bueno de Mesquita, B. (Eds.), Prediction: Breakthrough in Science, Markets, and Politics, The University of Michigan Press, Ann Arbor, MI, pp.

Tan, K.-C., 2005. Boundary Making and Equal Concern. In: Barry, C. and Pogge, T.W. (Eds.), Global Institutions and Responsibilities: Achieving Global Justice, Blackwell Publishing, Oxford, pp. 48-64.

UNCED, 1993. Report of the United Nations Conference on Environment and Development. Rio de Janeiro, 3-14 June 1992. A/CONF.151/26.Rev.1. United Nations, New York.

UNEP, 2007. Global Environment Outlook 4. Environment for Development. United Nations Environment Programme, Nairobi.

United Nations General Assembly, 2000. Resolution Adopted by the General Assembly: 55/2. United Nations Millennium Declaration. A/RES/55/2. United Nations, New York.

Åkerman, J. et al, 2000. Destination Framtiden – vägar mot ett bärkraftigt transportsystem. Forskningsgruppen för miljöstrategiska studier, Fritzes Förlag, Stockholm.