

GREATER RESPONSIBILITIES, MORE ACCOUNTABILITY

J.F. Kennedy's famous words: "Ask not what your country can do for you but what you can do for your country" was always something of a mystery to me. The subjugation of one self, which lies in the slogan, is simply not the way my generation was brought up to think. I've been able to do what I wanted to – and pretty much everyone else around me seems to have done the same.

However, as far as I can see, an objective reading of the prospects and trends we are facing, very clearly indicates that each of us will have a far greater responsibility towards the common good as we move forward. We will have to subordinate more of our commitment and freedom to our community - even if it won't come easily to us. It's a *necessity*. Unless we substantially reduce our load on the earth, there may not be much community left to be accountable to. It is getting crowded and tighter now and there is less and less room for the kind of free and in-consequential consumption that the richest part of the world has grown used to in recent decades.

Prosperity leads to independence and looser standards

Wealth is often defined as having options. The richer you are, the more different choices you have. Since industrialization our culture has evolved significantly in the direction of individual liberty - and this development is closely linked to the increasing prosperity of society.

When there were hard times, marriage was not necessarily based on love; it was about creating a team. Having a family was a matter of survival, not a lifestyle choice, and consequently, divorce was a rarity in the past. According to the National Danish Statistics, there were 376 divorces in 1901. In 2009 there were 14,695 - equivalent to about a third of all marriages ending in divorce.

Not that many decades ago children lived with their parents until they were married. Before marriage it was simply not possible to find your own accommodation.

The strict social norms of the past served to secure reliability, discipline and commitment to each other, because people were very directly interdependent and reliant on stable relationships.

In his book *The Age of Abundance* the American lawyer Brink Lindsey links our social norms to Maslow's hierarchy of needs: our basic needs are about securing food, shelter, security and reproduction, and if those needs are not met, one can hardly focus on anything else. But in the industrialized world, we have worked ourselves upwards in the hierarchy of needs. For most of us, our basic needs have been met for as long as we can remember. Now we strive for status and influence, and ultimately for self-actualization. As our prosperity has grown, it has allowed us to pursue our own goals, because we are not so directly dependent on others. We will no longer accept having to subject ourselves to rigorous common standards - and we don't have to. We are prosperous and have more options to choose something else - another job, another town, another family. We can do what we please.

There are other ways in which we have been able to transcend our past limitations. In

industrialized countries, the vast majority of us are not exposed to nature's whims in our daily life. We feel no shortage of water, food or firewood. We can basically consume freely, and we have done so, because apparently there has been plenty.

The consumer society is all about convenience; being able to consume without effort, without obligations and without being confronted with the consequences for anything except our wallets.

You could say that the modern, comfortable lifestyle is based on making our dependence on nature and on each other invisible.

The hot water simply flows out of the taps, the room maintains a comfortable temperature, and the waste is automatically taken away. The car is a zone that shields one from reality. You can drive 130 km/h. - or more - without sensing the speed, in silence or rich stereophonic sound, with tempered and filtered air, hot drinks, telephone, video and power steering that eliminates all physical exertion. You only dimly sense the deep hum of the engine. There is no sense of limits; there is enough, simply. No wonder that we find it difficult to see through the consequences of our actions, because countless engineers, designers and craftspeople have worked hard to remove all indications.

The return of necessity

Historically it is unique. We have gone from living with limitations to living without limits. For a long time we have been able to act independently, regardless of the natural foundation and with a minimum of commitments to others. Of course we always knew that we basically depend on what surrounds us, but we haven't thought of the community as a *necessity*. Most don't know if the harvest is good or bad this year or whether there is water scarcity or plenty of water in their area. We are not confronted with that type of questions and we are no longer qualified to answer them. We are beginning, however, to encounter limitations – just as the global consumer society is really getting started, and just as a few more billion people prepare to join the party.

The threats of climate change and lack of resources has been extremely abstract until now. Basically, we have not felt any problems yet – it doesn't really seem serious. To engage in climate issues or trying to shift one's consumption toward a more environmentally friendly way is almost a matter of taste - a style we may choose if we think it suits us best.

But to the extent that we start running into real problems solving our basic needs for food, energy, health and safety, then the ability of individuals to realize themselves will have a lower priority as seen from the community. On our way through the "funnel" of increasing pressure on dwindling resources there will be less room for the individual to unfold and it will become clearer that exaggerated individualism comes at the expense of others. That's why a deterioration of climate and tighter environmental circumstances are closely related to a tightening of social norms – just as the necessity of survival previously put limits on the individual's freedom.

The more our actions are driven by necessity, the more attention there will be on whether the actions of others are beneficial or whether they are helping to limit our options further. It is becoming clearer that we are interdependent, that our destinies are linked and therefore, that we can't all do just as we please.

At least not without paying the true price for it. The problem with our freedom of self-realization through consumption is that it relies on a systematic masking of the real consequences of our actions. We have no idea what we are doing - and therefore we live in a way that could ultimately deprive our self and others of our freedom and opportunities.

True prices, including externalities

The crucial and most important signal that society follows is *price*. The beauty of the price mechanism is that it distributes resources very efficiently: those who benefit most from a resource are willing to pay the most for it - and consequently, resources flow to those who can make best use of them. If something is rare and difficult to obtain, it is usually expensive, and then we try to save on it. If there is plenty of a resource, and it is easy to produce more, the price will be low, and you need not worry about using it.

In principle it is an extremely objective mechanism. But:

In practice, the price structure is a reflection of the attitude to natural resources and social conditions that have characterized development since industrialism. The price structure is one of the key mechanisms that keep us stuck in a logic, which now threatens to undermine civilization.

For prices are not objective. First, they are greatly influenced by government policies, such as taxation and subsidies - and, second, many costs cannot be priced, and therefore they count for nothing. Our actions and consumption carries costs that we do not pay for - or pay only a very small part of. This is the case for our use of many key resources - and the result is that we tend to squander those resources.

Agricultural pollution of the water is a cost to us all, but it is not part of the farmers' accounting, nor is the cost part of the price we pay for food in the supermarket. When we buy a computer, a cellular phone or other electronic goods, we don't pay to have them dismantled and recycled in a responsible way later. When we pay for petrol, it doesn't include payment for the pollution and traffic jams, our driving results in. Nor is there a surcharge for the cost of waging war or trying to keep peace in the Middle East to secure access to oil reserves.

When it's possible buy a plane ticket from Copenhagen to London for less than it costs to take the train to the airport, one of the reasons is that jet fuel is not taxed. Not only does it require a lot of fuel to fly long distances, the exhaust from the planes are released in a part of the atmosphere which is particularly sensitive to contamination. Environmentally, our extensive flying is quite damaging. But with the extremely low prices, it is obvious why air travel is the fastest growing form of transport.

There is also no tax on international shipping fuel, and it is partly for that reason that prices of freight are so low that it pays to ship the components of even very basic goods several times around the world to utilize the cheapest factories. No one pays the bill for the CO₂ emissions this entails.

Economic consequences that are not included in the accounts are called *externalities*. Markets are a form of communication and the problem of externalities is that they distort the signals that we act upon as consumers.

When the cost of using a resource is kept out of the accounts, the system will increase consumption rather than curbing it. If, for example, oil prices are low, there is little motivation to invest in saving energy. If goods that are made from toxic materials and under dubious circumstances are cheap, they will be chosen over more expensive but

healthier products.

Externalities distort the market economy, so it distributes resources based on an accounting that doesn't show the true costs - and thus it creates a risk of ultimately undermining the foundation of the system.

A - large - example: China has in recent decades had an impressive economic growth of around ten percent annually, but that growth has largely happened at the expense of the environment. The ground water table has dropped alarmingly, the air is heavy with pollution from factories and coal plants, the rivers are poisoned, etc. If you subtracted the costs in terms of destroyed nature and human suffering, the Chinese growth would look much smaller.

A report from the UN Environment agency UNEP in 2010 concluded that the environmental damage that humans are causing, is equivalent to 11 percent of global GDP. The report also noted that for several of the largest Danish companies, including Maersk, Carlsberg and the transport and logistics company DSV, the environmental costs in fact exceed the company's earnings.

Taxation is never neutral

If the challenge of the coming years is to act in a more responsible way toward our common foundation of life, then it seems natural to use prices to increase the visibility of the true costs of the ways we use it.

It is a political decision. One can impose obligations on companies forcing them to clean air, recycle old products or to ensure decent working conditions, and thus the cost of mitigating the problems will be drawn into the accounting. In practice, however, you can't put a price on everything. Instead, we need to define general duties and taxes on the types of consumption that we know are problematic. This is exactly what you do with quotas and taxes on CO2 emissions and with "green" taxes on water, heavy cars, pesticides, packaging, etc.

Taxes and duties regulate people's behavior. Taxes distort prices, so some types of consumption become more expensive, and others relatively less expensive than otherwise. In this way taxes are a tools that can be used politically to influence the behavior of people and companies.

We are so accustomed to the current tax structure that we might not think of it as distorting, but in fact the logic behind it dates back to a time when natural resources were abundant and labor was scarce. By choosing what should be taxed, the state helped to boost industrial production. The use of energy, raw materials and transport was stimulated by low taxes or direct price support. At the same time high taxes were put on labor. This created a political background condition for the economy, which encourages industry to increase the productivity of labor by using copious amounts of energy and technology.

Reality today is different, and therefore it would be appropriate to shift the burden of taxation in order to support and accelerate the transition to a society that achieves prosperity with a much lower wear on the natural foundation.

However, there is a great fear of using taxes. It is a classic right wing issue to try to lower taxes, but some taxes inevitably need to be collected in order to finance running the state. Unfortunately, it is as if the dislike of taxes means that one should also renounce the possibility of using taxes as a steering mechanism. As if a tax reform

would be a kind of violation of the neutrality of market forces.

But the market is not neutral. The price structure and tax system reflects the industrial logic of growth and it doesn't expose the true costs of the climate and resource crisis. The consequence is not only that the price structure maintains us in a model that is outdated and harmful. We also miss the ability to mobilize market forces to create a solution.

We will elaborate on how taxes affects the direction in which market forces pull our development in chapter 24

The last to feel the crisis are those who contribute the most to it

Ironically, it is those who are best able to influence the system, which are the last to be confronted with the negative consequences of the way things work now.

The first to actually feel climate change are the poorest. The poorest live in the regions, which are affected most significantly - floods in Bangladesh, drought in Africa, water shortages when the glaciers in the Andes and Himalayas disappear. If you can afford it, you can build dams or in the case of emergency, you can move. You can buy bottled water and import the food you need. But the poorest do not have the same means to mitigate the problems.

The last place where you can pick up the signals of crisis are in air-conditioned conference center, on board an airplane or behind the wheel of an SUV.

The need for - and the threat of - transparency

It is a confusing, abstract and contradictory world we live in. We are bombarded by information and signals, we are affected by and are dependent on far more factors than previously, and even if we would like to do good and behave well, it is extremely hard to see the real consequences of our actions. Where do the products we consume come from? What happens to them when we throw them away? Does it help to sort your waste for recycling? Should you buy CO2 quotas? Should we donate to disaster relief? Is the fish we eat threatened of extinction? Would it be better to eat shrimp instead? Should we switch to a more frugal car or keep an old wreck alive? ... Anyone with a minimal concern about the effects of our consumption can torture themselves with question after question like these.

The good news is that there are many opportunities for making the world more transparent. The continuing trend towards smaller, cheaper and more powerful computers in the coming years will fill our surroundings with a vast number of objects which are fitted with sensors and the ability to communicate with the rest of the network - the *digital force* we touched on in Chapter 2. Networks of all kinds of sensors will give us and our machines an ultra-detailed insight into the state of affairs - whether it be temperature, humidity, energy consumption in buildings, the composition of substances in the atmosphere, measurements of environmental conditions in water streams, an overview of traffic, or data about our own health.

Digital connectivity is making the world more transparent. With the network of computers and sensors, we can much better see the consequences of our own actions in relation to the general situation, continuously and in smallest detail.

Solution: Transparency

The American science fiction writer Bruce Sterling has pointed out that we probably would be quicker to change our behavior if we could see the consequences when we

cause harm more directly - if a smoker could *see* spots spread to the lungs, or alcoholics could *see* how his or her liver eventually is filled with small holes. Similarly, the greenhouse effect would probably seem more urgent if the CO₂ had been visible, so the air became red as the concentration increased – as it has so far, by nearly 40 percent since the beginning of the 1800s.

We have discussed *feedback*, and how a system reacts to the signals it receives about the consequences of its actions. Feedback enables us to learn and react appropriately. Without feedback you are steering blindly. To be an intelligent participant, you need accurate and rapid feedback. Fortunately, the ubiquitous information technologies will help us on that count as well.

In 2007 the Japanese car manufacturer Nissan decided to equip all its cars with a display that continuously shows the mileage that the car is running. The company had compared two cars that were identical, except that one had the continuous readout of consumption, while the second just showed how much gasoline was left in the tank. It turned out that those who drove the model with continuous readout on average drove with a ten percent better fuel economy. Likewise, owners of hybrid cars like the Toyota Prius enthusiastically tell about the special display, which shows whether the car is running on battery or drawing on the gasoline engine, and how it becomes a sport for Prius owners to adjust their driving to make it as efficient as possible. A conclusion could be that people actually want to behave sensibly and try to use their resources effectively if it is simple and uncluttered.

It's obvious to try to create a similar transparency for other types of resource consumption. A display in buildings could show the current consumption of electricity, heat and water, or more extensive labels on consumer goods could show, for example, the amount of fossil fuels spent on the manufacturing of the product - whether it be computers, washing machines, clothes, holiday travel or food.

The American company Timberland, for instance, has started to label their shoes with CO₂ emissions, and the British supermarket chain Tesco has an ambitious program to CO₂-label their foods and detergents. In Sweden, the largest local fast food chain, Max, indicates CO₂ emissions on the menu, so it is clear to customers that the beef in a hamburger leads to over four times more emissions than the meat in a chicken sandwich.

The author Michael Pollan, a prominent figure in the American natural food movement, has suggested that labels on food should show two calorie statements: both of how much nutritional energy your food contains, and of how much energy has gone into producing it. Pollan estimates that it takes about 10 calories of fossil energy to produce and deliver each calorie in the typical American diet.

Much too much to consider

Sure, it can quickly become quite overwhelming and confusing. Any respectable product already has a rash of more or less official labels. There are so many factors to take into account; there are so many products and ingredients to consider. It is not realistic that consumers will take the time or effort to study a detailed life cycle analysis, every time they choose one product over another.

The challenge is to make the information simple and operational. If the costs and the adverse consequences actually were included in the prices, that would obviously be a very easy and effective signal. One could also imagine more technological solutions. Nissan has designed an "eco-pedal" to follow up on their successful attempt to

improve fuel economy by displaying the mileage. If you drive in an uneconomical way, for example by accelerating hard up a hill, the pedal will give a bit of resistance, so you receive a discrete hint that there are good savings to be gained by lifting the foot a bit from the speeder. However, it is only a suggestion: The driver is still free to press the pedal to the floor, if he absolutely wants to.

As mentioned in Chapter 15 on the convergence of the physical and the virtual realms, all products over the next decade or so will probably be marked with a small chip that makes it very easy to download all kinds of information about the product. A likely scenario is that a consumer can scan an item using his cell phone. This identifies the item, so the consumer can download information related to the particular product from the net – in principle just like we click on a link or use Google to search on a topic. If we wish, we will be able to obtain extremely detailed information about a product and the context it occurs in.

In principle, this implies that we will have extremely good tools to understand the consequences of our choices as consumers. For companies wishing to do business by producing in a sustainable way, transparency will help to make it clearer to their customers, what kind of qualities are inherent in the product.

The risk is that consumers tune out because they can't handle the flood of information. The challenge therefore is to make information available in a way so that only what is relevant to the specific situation and the specific user is visible. This should be feasible. We have great designers, a growing understanding of user needs, and a rapidly improving technology to filter and customize information to the individual.

Making a product's qualities and the exact consequences clear to consumers will be an important way in which producers can add value and differentiate themselves from competitors.

And should some manufacturers choose *not* to make the information available, chances are good that the media or the consumers themselves will feel called to expose it.

Efficient resource management - or eco-fascism

Increased transparency also means that others can glean a detailed insight into our lives. Our consumption and our actions can be checked, and we could be held accountable if we exceed the standards which society has set up.

We have a whiff of it already. There are standards for how much cars may pollute, rules about watering lawns, for disposal of waste, and how fast you can drive in your car ... These type of regulation of consumption could well be tightened considerably, depending on the how urgent the environmental problems turn out to be. In some cities - Athens, Beijing - there are restrictions on which days you are allowed to drive your car. Other cities collect road taxes and congestion charges by photographing the license plates on all cars in order to identify whom to send the bill.

Should it become necessary, one could imagine a rationing system that automatically detects whether your consumption of goods, fuel, transport etc., exceeds your personal CO2 quota. When you draw on your credit card, it would not only be your bank account, but your also environmental quota, which was charged.

If our problems turn really bad, the technology for transparency and recording pretty much everything could change character, and become a system for keeping a rather tight grip on each of us.

Information technology can provide us with insight, control and efficiency, and thus it can help us maintain an abundant and comfortable life with a much lower consumption - but technology could also be used to control and direct people's actions very directly.