

Three strategies towards sustainability: Script for the introduction

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Since the mid 1970s, human consumption of natural resources has exceeded the Earth's capacity to regenerate them. More precisely, a part of humanity – the global consuming class – consumes more than the earth is able to provide. This has a number of ecological consequences including climate change, loss of biodiversity, acidification of the oceans, deforestation, desertification and growing scarcity of fresh water and many other resources, all of which pose a threat to life on Earth. In addition, these ecological problems lead to social crises such as resource conflicts and wars, mass migrations, famine and disease.

In light of these ecological and social crises, we are faced with the question of how these problems can be resolved.

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Currently, 3 main strategies for the resolution of these ecological (and consequently social) problems are being discussed and tested. These strategies can be classified into 2 approaches:

One side of the discussion assumes that it is possible to decouple economic production and economic growth from environmental impact. In other words, it is possible for us to continue to enjoy economic growth while reducing our environmental impact (reducing resource consumption and saturation of sinks, for example with CO₂).

This approach relies primarily on new technologies aimed at achieving this goal, such as energy-efficient appliances which use less power, renewable energy, filters to reduce polluting emissions, recycling, etc.

This school of thought assumes that it is possible to reconcile continued economic growth with sustainability, with the help of technological progress.

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This approach is known as decoupling. Let us take a closer look at this concept.

A distinction can be drawn between relative and absolute decoupling.

The following is an example of relative decoupling: the transport capacity of airline Lufthansa has risen steadily in recent decades, specifically by 328% between 1991 and 2011. In the same time frame, its fuel consumption has grown at the more moderate rate of 188%. The yellow and black lines are growing further and further apart. Fuel consumption per transport kilometre has fallen, resulting in relative decoupling.

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The following graph provides another example of relative decoupling describing not just air travel operators, but every country and therefore every economy in the world.

The ecological efforts of the last 30 years (1980 to 2010 on the graph), primarily thanks to massive increases in energy efficiency, expansion of renewable energy, recycling, etc., have reduced resource consumption and CO₂ emissions per USD of GDP, resulting in slight relative decoupling – the green (energy consumption) and brown (CO₂ emissions) graphs are not growing as fast as the blue graph (GDP).

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The approach which assumes we can continue to grow while reducing our environmental impact is often referred to as “green growth”, “sustainable growth”, “qualitative growth” or “green new deal”.

This approach encompasses two of the three strategies mentioned:

efficiency and consistency. Both apply to the production process, calling for changes in the way in which goods and services are produced.

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What do we mean by efficiency?

Efficiency refers to the ratio between benefit and expenditure. The aim here is to continue to produce the same things (benefit) as before, but with greater efficiency in terms of use of raw materials and emission of pollutants (expenditure).

As a result of technological innovation, machines and appliances have increasingly high levels of environmental efficiency. An example: the insulation in a passive house means that less heating is required to maintain the same room temperature, resulting in lower energy consumption.

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The second strategy is called consistency. This strategy also applies to the production process, seeking to produce in an entirely different way – specifically, following the example of nature.

In nature there is no unusable waste – everything is reused in a closed loop. When rotting fruit falls from a tree, in time it is transformed back into earth, and therefore into nutrients for all kinds of living creatures.

The same ideal is pursued in production: when a product has outlived its usefulness, it should either be biodegradable/compostable, or completely recycled and reused as a raw material for a new product. This results in a closed loop system whereby materials always remain in the cycle rather than landing on the rubbish heap.

Going back to our heating example, consistent heating is fuelled not by oil, but for instance by wood pellets. As wood is a renewable raw material which constantly regrows, the resource is not lost from the cycle.

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Both strategies make a great deal of sense, but have so far only resulted in relative decoupling, as shown in the graph. This means that while the consumption of raw materials has fallen in relation to GDP growth, in absolute terms it is still rising. This is the case both in the Lufthansa example and in the graph representing the global economy.

However, what we need is absolute decoupling – a real reduction in the consumption of resources. Absolute decoupling corresponds to an absolute reduction of our environmental impact, as shown in the graph “absolute decoupling”, which points downwards.

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The amount of resources currently used by humanity corresponds to 1.5 planets. This means that the Earth needs 1 year and six months to replace what humanity consumes in a single year. Moderate scenarios from the various UN organisations which predict population and consumption growth and a further increase in crop yields suggest that by 2030 it would take two planets to provide the resources we will consume. As we only have one planet at our disposal, we must reduce our resource consumption in absolute terms, as shown by the yellow line in the graph. We need absolute decoupling.

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The situation is the same for CO₂.

The Intergovernmental Panel on Climate Change, the most important international committee of climate researchers, predicts that global warming of over 2 degrees Celsius would cause climate change to spiral out of control. In order to remain below the 2-degree threshold (i.e. to prevent global warming of more than 2 degrees), industrialised nations would have to reduce their carbon emissions by around 80-90 percent in the period from 2000 to 2050. More ambitious targets such as the 1.5-degree threshold called for by many scientists and especially vulnerable populations such as the inhabitants of small island states would involve even greater challenges. Such populations are a clear example of the social consequences of environmental problems.

Here too, absolute rather than relative decoupling is needed – an actual reduction in the amount of CO₂ and other greenhouse gases emitted.

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This is where a second approach comes into play, based on the assumption that while efficiency and consistency are important and necessary strategies in pursuit of a sustainable economy, they are in themselves not sufficient, as they have so far only led to relative decoupling.

This approach calls for changes in patterns of consumption and demand on the part of consumers, specifically, a reduction in consumption.

Concepts aimed at “post-growth” embody this approach.

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This third strategy is called sufficiency.

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The goal of sufficiency is to reduce our environmental impact by consuming less, and therefore producing less.

The idea is to buy fewer things, shifting the focus from owning things to using them.

In our heating example, this could involve heating a room less and putting on a warm jumper instead. Another example is carsharing: several people share a car instead of each of them owning their own.

Sufficiency should not simply be regarded in a negative light, as “doing without”. Some advocates of the approach see it as liberation from our constant desire for more, from the thousands of self-fulfilment choices which are constantly presented to us in a consumer society, taking up our time and energy.

Sources:

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