

Man a Machine and Society



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Abstract

The idea of likening man to a machine is a picture of thought – une image imaginaire – or a make belief of how the author of L'homme Machine a imaginé de comparer l'homme à une machine, that is, how he came to compare man to a machine. The idea was expanded later by an economic historian who compared a country to a 'flying machine' by analysing what is needed to make it 'flight-worthy'. In the present article society – for example South African society – is likened to an aircraft too. Like a 'flying machine' there have to be a number of systems in place to make society 'life-worthy' or viable. If anyone of those systems should become dysfunctional society, like an aircraft, may disintegrate and eventually crash.

Man a machine?

The title is partly taken from the book *L'homme Machine*, by Offray de la Mettre (1774), translated to *Man a Machine* by G.C. Bussey (1912). At the time it was published the book caused quite a commotion, because it likened man to a machine, a mindless object without heart and soul.

Rather it is the other way round: A machine invented, engineered and constructed by man has something human about it, as an extension of man. Man prefers to be likened to God, and therefore to be almost godlike, adorned with powers to control heaven and earth (Matt. 28: 18). But then man is overestimating himself, for however hard he may try he will never attain that position despite all the (material; political) power he may seem to possess.

A country compared to a flying machine

It may not be surprising that it was Walt W. Rostow, an economic historian at the Massachusetts Institute of Technology (MIT), who made the same kind of comparison. In his book *The Stages of Economic Growth* (1962) he also likens man to a machine, with the only difference that he compares a developing country to a flying machine.

As is well-known an aircraft will first have to travel a certain distance on the runway before it can get airborne. Once airborne the aeroplane should be able to sustain its flight, because now it is entirely on its own. It will have to gather speed and change into a self-sustaining flight to reach an altitude where flying is safe and will experience the least air resistance.

For an aircraft to be flightworthy it will have to be solidly constructed by engineers and technicians to meet all the requirements set by engineering science and the laws of nature. This implies that a lot of study and research must have preceded the construction of a flightworthy aircraft. If construction is not sufficiently robust to withstand the vicissitudes of atmospheric conditions the aircraft could crash with all the terrible consequences for crew, passengers and relatives.

A flying machine - an aircraft - to be flightworthy, is supported by a number of essential systems, like a navigation and steering system (pilot), a wing system (front and aft), a power system (engines and fuel), a landing and braking system, a carrying capacity for both passengers and luggage, and probably many more. All these systems together constitute an order, that is a framework or setting in which they co-operate to make the aircraft flightworthy.

The poor countries of 'yesteryear' managed to restructure the social, economic and technological relationships that were impeding their development.

Society and machine

In this section society (e.g. South African society) is likened to a flying machine.

First, it may be in order to enlarge a little on the concept society. Social welfare (or wellbeing) is something that resides in the human mind, and social welfare (which includes economic welfare) refers to the welfares of individuals who together constitute

a society. Thus, welfare or happiness does not refer to a society conceived as an organic whole and having its own mind, but welfare can be defined as the aggregate of all the utilities (or satisfactions) obtained by individuals constituting a society. For example, economic welfare is the ratio (or tension, i.e. the mental or emotional strain) between needs felt and the means required to satisfying them. In economics this is called relative scarcity (Meyer, 2007).

Each year the United Nations Organisation publishes a "happiness index" for each of its member-countries showing which countries, in descending order, have been able to attain a certain level of happiness. Highest on the list is Norway, Denmark 2, Ireland 3, Switzerland 4, Netherlands 6, Canada 7, Australia 9, USA 14, Germany 16, UK 19, Russia 49. The unhappiest countries are: Rwanda 151, Syria 152, Tanzania 153, and Burundi 154 (UN Happiness Report 2017, A Survey of 155 countries.)

In section 2 reference is made to Rostow (1962) who compares the historical stages in the development of countries to a flying machine. He also emphasises that the historical stages-of-growth are a limited way of looking at the sequence of modern history. The stages have been designed to dramatize not merely the uniformities in the sequence of modernisation, but also the uniqueness of each nation's experience.

Present-day developing countries are unique in that many of them are still looking for the right kind of structural changes to take place within their society. The poor countries of 'yesteryear' managed to restructure the social, economic and technological relationships that were impeding their development.

Present-age less developed countries (LDCs), however, find the introduction of this kind of change in their social and economic framework an extremely difficult task. It is this inability to accommodate the required structural change that is holding these countries back. To this day many LDCs cannot initiate and/or sustain high levels of rapid growth because they often don't have those institutions which can

create and foster a technology that is based on their own resource endowments and which can cope with their high rates of population increase (Singer & Ansari, 1977; Zimmerman, 1964).

Rostow distinguishes between five stages through which a country will have to proceed before it will finally achieve sustainable growth. In the latter phase it continues to develop on its own accord. These stages are: (1) the traditional society, (2) the preconditions for take-off, (3) the take-off, (4) the drive to maturity, and (5) the age of high mass-consumption.

Stage three, the take-off, is the great watershed in the life of a modern society. It is the interval when the old blocks and resistances to steady growth are finally overcome and the forces making for economic development and progress expand and begin to dominate society.

In the same way as an aeroplane needs to be 'flightworthy' to take off into a self-sustainable flight, a society also needs to be 'life worthy', or viable, i.e. capable of obtaining the desired level of prosperity and happiness for its inhabitants.

A society, like an aircraft, also needs to be supported by a number of systems which in combination should lead to a successful and self-sustainable order with the capacity to reach its destination and make a safe landing. The most important systems probably are:

- the political (the executive or government, parliament and law-making, government administration, etc.),
- the judiciary
- the maintenance of law and order (police, etc.)
- the social (family welfare, etc.)
- transport (roads, harbours, airports)
- the educational (schools, universities)
- the health care
- the economic
- the monetary
- the cultural (arts and sciences)
- communication (printed media, radio and TV, electronic media)
- recreation (sports, music, cinema)
- the military (land and sea)
- the religious (the Church in its various denominations)

And so forth

It appears that society is a very complex 'machine' requiring a great variety of systems to create order and make it viable. Any one of the above systems is crucial for the successful performance of society with regard to changing it into self-sustaining development.

Sustainable development

In 1988 the World Commission on Environment and Development chaired by Gro Harlem Brundtland published a report titled *Our Common Future* (Brundtland, 1988) in which it proposed the following concept of sustainable development:

In the same way as an aeroplane needs to be 'flightworthy' to take off into a self-sustainable flight, a society also needs to be 'life worthy', or viable, i.e. capable of obtaining the desired level of prosperity and happiness for its inhabitants.

Humanity has the ability to make development sustainable; to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.

'Sustainable development' has been rather vaguely defined as a set of conditions based on the requirement that the natural stock of capital should not decrease over time. This definition is mainly applied to the problems of developing countries. Natural resource assets comprise *inter alia* soil, groundwater and various other natural conditions (Pearce, Barbier and Markandya (2010)). It is obvious that natural resource assets only do not suffice in the definition, but that 'societal' assets (the systems needed to create order in human society) are equally important conditions for sustainable development.

When several credit rating institutions like Moody's and Standard and Poor's recently downgraded South Africa to junk status they meant to issue the simple warning that it is living beyond its means; it spends more than it earns.

If only one of the above mentioned systems should be dysfunctional and not performing well it will lead to its disintegration and might cause it to 'crash' eventually.

Like an aircraft, society also has to pass through various stages of development before it can obtain sustainable growth in order to achieve progress and prosperity. The verb obtain (rather than attain) is used to refer to development in which change is not automatic, but that change is the result of sacrifice, which is the price to be paid to obtain it. In order for a society to advance, scarce resources have to be employed (and

sacrificed) in exchange for the production of a great variety of goods and services needed to satisfy all the wants and desires of consumers. However, if the price a society must pay to obtain them is higher than the cost needed to produce them it is an indication that scarce resources are being wasted. The price then is not 'right', it is not conveying the right message in relation to its scarcity.

In this context it is important to realise that prices result from exchange and this, in turn, leads to the emergence of a network of value relationships which has an independent existence. These value relationships find their expression in terms of money which is the price at which goods and services are exchanged. If prices do not reflect relative scarcities and are not 'right', the entire economy may become distorted, and this is not sustainable either. Very often prices are distorted due to monopoly power, government interference, misinformation through advertising, and, generally, 'strange' consumer behaviour and simply ignorance (Meyer, 1984, 1990).

Similar to the sturdy structure of an aircraft's ability to withstand the vicissitudes of atmospheric conditions, a society should also be robustly structured in order to withstand the regular occurrence of recessions and depressions of many kinds: natural, political, social, economic, religious, and international (Witteveen, 1956).

Junk status

Following Rostow (1962), to liken society to an aircraft may also be regarded as an attempt to *dramatize* and reveal the processes that lie at its foundation.

When several credit rating institutions like *Moody's* and *Standard and Poor's* recently downgraded South Africa to junk status they meant to issue the simple warning that it is living beyond its means; it spends more than it earns. Most of its material and immaterial means are not being productively employed or may even be wasted.

The country's resources are being squandered; not used well enough to create the wealth and progress needed to convince investors to have confidence in its future development.

In an article by Welsh (2000) titled *Why South Africa is different* (from Zimbabwe) he was still optimistic, likewise *The Economist* did not include South Africa among the hopeless. Could he still be optimistic today?

A 'solution of sorts' to this inability to draw local and foreign investment might be for the government to create ('print') the needed money itself through the banking system. This is what non-viable countries sometimes do thereby creating more problems than they already have. The consequences of that kind of policy are legion: increasing rates of inflation, taxation and unemployment.

If therefore South Africa is not sufficiently viable ('flightworthy') to grow, it will not be able to attract loans from and investments by people who can and do save and are also willing to invest in this country. These loans are needed to pay off the huge national debt plus interest as this has been accumulating over the years (Meyer, 2016). Foreign investment is needed when South Africa cannot generate the savings itself or when these savings are being taxed away.

Conclusion

Like an aircraft without enough fuel to reach its destination a country may also disintegrate and fail to make a success of its 'drive to maturity'.

At present the different groups of like-minded people, sections, movements, factions and parties in South African society, all with their own value systems, are pulling in different directions with no clear idea of where they are going. Some politicians say: If only society could be 'transformed' - changed - all will be well. "Changed" in what way? Do they mean in the way of structural change to make development sustainable? This is what is needed and is holding South Africa back like some other developing countries. Society will have to make the necessary adjustments with regard to finding a *modus vivendi* to make it viable and start the drive to maturity.

Knowledge might give insight which is not to be equated with wisdom. Wisdom knows how to do it in a different way. Perhaps this is the time when the religious system - the Churches - must set the route and show the way forward to a common destination, the land of hope and opportunities for all.

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