

The Great Objection and its Confutation

-- Why we cannot solve any problems on Earth before hgoing to space --

By Alberto Cavallo

Original version written in 2009, reviewed by the author in May 2020

(from the old Technologies of the Frontier website)

Whenever you speak about human presence in space to a general audience, and quite often when you talk with specialists as well, you have to hear the Great Objection: "Before going to space we have to solve our problems here on the Earth".

As soon as you reason about it you understand that the Objection is in fact a general dialectic scheme, which consists in changing the topic, pretending that the alternative is more important and urgent and so avoiding to reply to what the speaker has said. In short, it is a sort of quite-another-ism: "The problem is quite another, the cause is quite another...".

But the Objection is Great, because too many people use it and take it for good, therefore we must face it at once and make people understand that the truth is exactly the opposite: if we don't go to space and we don't do it quickly, we are destined to a bad future here on the Earth. The reason is that the Earth has a finite size, to live all well we need economic growth and already now its resources are not enough, then we have to look for resources elsewhere – that is in the immense universe out there!

Now, there are some basic points to be understood about the "problems of the world". The first one is that a steady state does not exist, it is an illusion: things always change, nothing remains unchanged, starting from ourselves who individually grow and develop first and then, alas, become old. Therefore everything either grows or decreases, either we go towards the better or to the worse – and of course these two conditions alternate among themselves with ages of development and of recession.

In economy, welfare is always associated to growth. Stagnation only exists as a transition between growth and decrease, but it is enough to cause poverty. This was explained by Adam Smith in "The Wealth of Nations" (1776) and no one ever managed to demonstrate the opposite – even Karl Marx shared this concept. It is simple: if there is no economic growth, the majority of the people has no possibility to improve their conditions, and then they stay trapped in poverty – a typical condition in the early Middle Ages.

On the other side the recurrent financial crises bring back to everybody's attention the fallacy of the idea that economy is not based on work and physical production. All activities that are not based on true work are subject to sudden vaporization at the moment when reckoning is required or simply someone stops believing – which is the same after all. If the stock exchange becomes a game of chance, sooner or later someone will ask to see the cards. The only source of wealth is human labour, and the only source of welfare extended to everyone and not limited to a minority is economic growth.

The current situation caused by the COVID-19 pandemic is showing very well how fragile our global economic system is and how a single small thing, seeming so insignificant at the beginning, can disrupt it and cause a new global crisis. By the way, a pandemic of some kind with severe effects for the whole world was not at all unexpected: scientists have been warning about it for many years, at least since the SARS and MERS episodes, and even the

entertainment industry produced movies like *Pandemic* (2007) and *Contagion* (2011) where everything was described more or less like it is actually happening now. Population and economic growth in a limited space also creates the conditions for the spread of infectious illnesses, as history tells us: how many times developing civilizations were hit by plagues? As population density and ease of travel increase, so does the diffusion of infections.

Coming back to the main point, true economic growth, based on human labour, cannot happen indefinitely in a closed world in which, moreover, the population is growing. We must be clear: “solving the problems of the world” means to give a comfortable standard of living to ALL the human beings, who now are going to be 8 billions and more. It is not true that by sharing the current wealth (or what remains of it after the financial crisis) among all without making it grow everybody would be well, on the contrary everybody would be very BAD. On the other side we cannot tell a billion of Indians and a billion and a half of Chinese that they have no right to a comfortable life because the resources of the Earth would not be enough, and therefore only Europeans, Americans and the Japanese may live comfortably by some right of priority. Even without population growth, sustainable development does not exist, because even now the resources do not suffice to “solve the problems of the world”.

If we stay within the limits of a closed world, the only way to survive is to stop development and then to invert it, because steady states don't exist: that means demographic and economic decrease. The consequence is that **the majority of humankind shall live worse and worse**. *Decrease* can be *happy* only for a privileged minority able to impose it to everybody else by preserving for themselves the welfare that shall not be allowed to all. Let's say more: **decrease can be implemented only by imposing it by force**, because the majority of people want wealth and not poverty for themselves and their children.

The management of limited resources without any hope of growth means therefore the generalization of poverty through violence.

The management of limited resources through the generalization of poverty can be achieved by two kinds of political regimes:

1. monopolistic capitalism
2. totalitarianism

Scarce goods can be kept in the hands of the oligarchs in the form of private property – think of the privatization of vital resources like water that transnational companies are pursuing all over the world, or of the private oil companies and in general of neocolonialistic exploitation of so many poor nations by the developed world.

As an alternative there can be state control, which must be necessarily exercised in an authoritarian way, through regulations and limitations and then suppression of freedom – a solution favoured by environmentalist movements having their ideological roots in communist totalitarianism.

Scarcity of resources and its management are motivation and instrument of suppression of freedom and physical oppression.

The only way out is removing scarcity. But we cannot solve the problem indefinitely by finding new resources on the Earth and exploiting the known ones more efficiently, because there are limits to both possibilities. The facts that the Earth has a definite size and the laws of physics don't allow absolute efficiency (second principle of thermodynamics) forbid us to

escape from the catastrophe of the limitation of resources without looking somewhere else.

Searching for resources out of the Earth requires the industrialization of space. If we don't do it we won't solve the problems of the Earth. If we wait for having solved the problems of the Earth before going to space, we deny ourselves the the only way to solve them and we go towards the collapse of the closed world! By opening up our world we can have true growth and save the Earth. Energy and raw materials are available in huge quantities just out there, if only we decide to set ourselves up to go and catch them – and use them directly in space, without loading the Earth further with the undesirable effects of industrial activity. At the beginning there will be new economic and technical development allowing us to live better on the Earth while some people already live in space to make it work, then we can consider populating space massively – it will happen spontaneously along with development. But it takes time, resources are already lacking, so we must start at once. With a small fraction of the immense wealth that the nations are pouring to fill up the abyss of the world financial system, or of the huge military budgets of the great powers, it is possible to activate the development of space. **If for instance the USA dedicated 15% of the defense budget to peaceful space activities they would finance every year the equivalent of the whole Apollo moon program!** Even with a smaller investment they would achieve in a few years much more security – by ensuring energy and raw materials availability – than by maintaining aircraft carriers and combat troops which are useless, as we all could verify, against terrorism but are necessary to keep military control of oil and gas extraction areas – in sight of the management by violence of the scarcity we are going to face.

I will never stop underlining that space development is much cheaper and more effective than the military in creating security in a world with an impending resource crisis. And one is the way to freedom and welfare for everybody, the other is the way to poverty and oppression.

The original version was made in 2009

The article was revised by the author in May 2020