

Perverse Safety

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On the 13th March 2006, 6 patients from England were injected with TGN1412, an experimental antibody. Within hours, all 6 were suffering multiple organ failure due to a “cytokine storm” [1], a massive positive feedback loop of the immune system. A friend of one patient famously described his swollen head as looking like the elephant man. This has prompted calls for tighter control on drug trials. A lawyer for two of the patients called for a “wholesale review into the MHRA [Medicines and Healthcare products Regulatory Agency]” [2].

But there is a serious danger that too much emphasis on risk reduction and risk elimination could produce worse outcomes overall. It is already a 10-15 year process to get a drug from the laboratory to market. Adding to that time by tougher controls on drug safety could save many lives, but would certainly cost a great many more by denying treatments that work to the sick. It is always better to be safe than sorry, but nature does not often give us that choice. Every year there are 2.6 million new HIV/AIDS infections and 1.8 million deaths [3]. A one year delay producing an effective treatment for HIV/AIDS would be a health disaster nearly two hundred times worse than the most dramatic and memorable failed drug, Thalidomide, which affected 10,000 children [4].

A proper public understanding of risk requires that we are not often faced with the choice of taking or avoiding the risky option, but rather a choice between two dangers. When we seek to do something good, failing to do it is also a cost that should be added to our analysis. It may be the easiest option to spend a lot of time and resource on maximising safety, but when failure to complete the job has a real cost, it is rarely wise to do so.

In the field of climate change, real action is necessary. If we allow the desire for safety to turn us away from building nuclear power stations, the result will be clear. An analysis of the Barsebäck nuclear power station in Sweden concluded that closing it to avoid the risk of meltdown resulted in hundreds more deaths every year due to the pollution from coal-fired power stations [5]. This is even before the effect of CO₂ is taken into account. It is easy to argue, as Roland Nelles wrote in Spiegel “After Fukushima, [nuclear fission]

can no longer be viewed as a viable energy source for the future”. But does an analysis of these dangers really show that the risks of nuclear power are greater than the known and continual dangers of the only currently viable alternatives?

“ **Too much emphasis on risk reduction and risk elimination could produce worse outcomes overall** ”

In the EU, 25 deaths occur for every TWh (billion kilowatt hours) of coal power produced [5]. Worldwide, this is 161 deaths [6]. For nuclear power, however, there are only 0.69 deaths per TWh in the EU. Radioactive waste may be dangerous, but to open coal-fired plants rather than nuclear fission plants in response to this danger is perverse safety. Coal-fired power stations are still predicted to cause more cancer deaths even once buried nuclear waste is taken into account [7]. If your country is not suited to vast scale wind, hydroelectric or geothermal energy generation then the default option may not be as safe as the danger you are turning from.

As our scientific civilisation becomes more powerful more and more good comes within our grasp. We have already eliminated smallpox from our planet forever. The next century could see us eliminate many other diseases. We have caused dramatic shifts in the world’s climate. The next century could see us adapt to these changes or reverse them. As what we are trying to do becomes more important, we must remind ourselves of the importance of not being distracted from our goal. It is generally far better to be safe than sorry - but if nature doesn’t give you that choice, it’s often better to succeed than fail. ■

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References

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