Sanitary safety or plastic pollution, is the choice really necessary?

Abstract:
Plastics have been on top of the political agenda in Europe and across the world to reduce plastic leakage and pollution. However, the COVID-19 pandemic has severely disrupted plastic reduction policies at the regional and national levels and induced significant changes in plastic waste management with potential for negative impacts in the environment and human health. This paper provides an overview of plastic policies and discusses the reasons given for plastic pollution. In the 1950s, it was the ideal solution to save the housewife’s time and to promote low-quality, short-lived and “cheap” products, this aspect being very relative, as the regular purchase of the same objects has a hidden cost that is poorly understood by the consumer. Change of communication strategy today: single-use is good for your health! This approach is not based on any serious scientific publication, only on the increasing principle of sanitary geometry precaution. It is quite remarkable to see that it is applied very quickly in the event of a possible increase in sales, but not at all when it comes to removing heavy metals from the composition of plastics used in the manufacture of children’s toys.

There is an urgent and important need to reconsider priorities. Concretely, the only serious scientific publications on the persistence of Covid-19 on surfaces indicate that, for high viral loads deposited on sterile surfaces, the survival of viruses is very low and does not exceed 24 to 48 hours. At this stage, the viral load is very low, as is also the risk of contamination. On everyday surfaces, covered with various microbes, bacteria and other non-pathogenic viruses, the survival rate of Covid-19 has not been established. But according to a 1950 principle of microbrial safety, it is strongly reduced compared to sterile surfaces. The switch to single-use was therefore entirely unsuitable for bags, cutlery, diapers… but was only the result of a strategy of opportunism. The analysis of the population is not technical: considering that the transmission of Covid-19 is through the objects, how do the manufacturers of these single-use objects assure their customers that they are sterile or at least free of viral contamination (except for products sold with the sterile certificate, for hospitals, for example)? There may be risk employees on the production lines, in distribution… and many of these products are imported from countries that are highly impacted by the epidemic, such as China, for example. In many cases, it is the new regulations imposed on manufacturers and traders that have precipitated these choices.

The generalized use of plastic disposable equipment to the entire population has considerably increased the use of single-use plastics. Masks and gloves have been produced in very large series on a short life cycle basis using inexpensive materials, as a matter of urgency. The masks are therefore mainly made of PP, and are unable to withstand long-term use. No reusable washable solutions have previously hit the market, usually made of synthetic materials. The authors of this article indicate that the best filtration efficiency is provided by surgical type masks, which should not be worn for more than 3 hours. This filtration capacity is linked to the porosity of the weave. This cannot be guaranteed after washing. Most masks are therefore mainly made of PP and disposable with a minimum daily consumption. Re-usable washable solutions have gradually entered the market, usually made of natural materials, but this is sometimes impossible, and potentially carrying virus, the integral disposable suit would be more appropriate or the complete absence of interaction. The positive side of this global experiment is that scientists will have data on the chronic inhalation of microplastics and their additives. Is the benefit of protection commensurate with the risk to individual health?

There was an urgent and important need to reconsider priorities. The evolution of plastics production is exponential and any delay of a few years in implementing protective measures risks leading to irreversible situations at the ecosystem level. It is known that the disruption of natural ecosystems invariably leads to the outbreak of epidemics with a potential global impact at the global level. It should be noted that it is not the epidemic vector that poses a problem, but also the level of natural resistance of animals and human beings in a polluted environment. It is known that, in this case, the level of immunity is very low and that the much diminished natural resistance is conducive to the spread of disease. This indirect effect is largely underestimated.