

Let's stop the manipulation of science

Around a hundred scientists ask Europe and the international community to act against endocrine disrupting chemicals. They condemn the use of strategies for manufacturing doubt employed by industries in the climate change battle.

LE MONDE | 29.11.2016 à 07h05 • Mis à jour le 29.11.2016 à 16h45





OLIVIER BONHOMME

For decades now, science has come under attack whenever its discoveries raised questions about commercial activities and vested interests. Scientific evidence has been willfully distorted by individuals denying the science and actors sponsored by industry interests creating the false impression of a controversy. This manufacturing of doubt has delayed protective actions, with dangerous consequences for the health of people and the environment.

- **Vous pouvez également lire cette tribune en français en cliquant ici** (idees/article/2016/11/29/halte-a-la-manipulation-de-la-science_5039860_3232.html)

The “manufacturers of doubt” work across several areas, including the tobacco and petrochemical industries, and the agro-chemical sector. The petrochemical industry alone is the source of thousands of toxic chemicals and contributes to the massive increase in atmospheric carbon dioxide that drives climate change.

The battle for climate protection entered a new era with the 2015 Paris Agreement, bitterly opposed by skeptics despite widespread consensus among climate scientists committed to working for the public interest. A similar battle is raging over the need to reduce exposures to endocrine disrupting chemicals. The European Commission is about to implement the first regulation for endocrine disruptors in the world. While many other governments have also expressed concern about endocrine disruptors, regulations for these chemicals are missing altogether.

Never before have we faced a higher burden of hormonal diseases, such as cancers of the breast, testes, ovaries and prostate, compromised brain development, diabetes, obesity, non-descending testes, malformations of the penis, and poor semen quality. The overwhelming majority of scientists actively engaged in researching the causes of these worrying health trends agree that several factors are involved, among them chemicals capable of interfering with our hormone systems.

Several learned scientific societies have pointed out that these chemicals, called endocrine disruptors, pose a global health threat. Among them are flame retardants in furniture and electronic equipment, plasticisers in plastic items and in personal care products, and pesticides found as

residues in our food. They can interfere with normal hormones during critical periods of development, in pregnancy or in puberty, when our bodies are particularly sensitive.

It is not possible to deal with this growing disease burden by providing better medical treatments, partly because there is no treatment, partly because the health effects are irreparable. We also have limited options to reduce our personal exposures by avoiding certain consumer items. Most endocrine disruptors reach our bodies via food that is contaminated with these chemicals.

A key option for stemming the rise of hormonal diseases is by preventing chemical exposures through more effective regulation. But plans to draw up such regulations in the European Union (EU) are opposed vigorously by scientists with strong links to industrial interests, leading to the appearance of a lack of scientific consensus where no scientific controversy exists. The same strategy was used by the tobacco industry, and it has contaminated the debate, confused the public and undermined efforts by politicians and decision makers to develop and adopt more effective regulations.

Both the debates on climate change and endocrine disruptors have suffered from the distortion of the evidence by industrially sponsored actors.

Many scientists believe that their objectivity and neutrality might be undermined if we publicly express views on political issues and engage in political debates. It would indeed be worrying if any of our political opinions clouded our scientific judgment. But it is those who deny the science who are allowing their politics to cloud their judgment. The result is irreparable harm. The obfuscation of science regarding tobacco cost tens of millions of lives. We should not make this same mistake again.

We believe it is no longer acceptable to remain silent. As scientists we have an obligation to participate in the debate and to inform the public.

We see it as our responsibility to express the implications of our work for society and for future generations and to draw attention to the serious risks we face. The stakes are high, and political action to stem exposures to endocrine disruptors and to the consequences of greenhouse gases emissions is urgently needed.

As endocrine disruption and climate change scientists we have joined forces because many of the actions needed to reduce the burden of endocrine disruptors will also help in the fight against climate change. Most man-made chemicals are derived from fossil fuel by-products manufactured by the petrochemical industry. In reducing the amounts of oil refining we will also diminish the production of by-products that drive plastics and plasticizers. These chemicals compromise male reproductive health and contribute to cancer risks. By reducing the reliance on fossil fuels and encouraging alternative energies we will not only drive down greenhouse gases but also restrict the emissions of mercury. Mercury is a contaminant of coal and, through emissions into the air and accumulation in fish, reaches our bodies and compromises brain development.

Although many governments have expressed the political will to deal with greenhouse gases, the translation of scientific knowledge about climate change into effective policy has been blocked, in part through the use of disinformation to confuse the public and our leaders. Governments are already late.

It is important that we do not repeat these mistakes for endocrine disruptors, and learn from the experiences of climate scientists and the public health community.

The European Commission has the opportunity to decide on regulatory instruments for endocrine disruptors that will set new standards worldwide and protect us from ill-effects. However, we are concerned that the regulatory options proposed by the European Commission fall well short of what is needed to protect us and future generations. They set a level of proof for the identification of endocrine disruptors much higher than for other hazardous substances, such as cancer-causing substances – in practice, this will make it very difficult for any substance to be recognized as an endocrine disruptor in the EU.

Urgent action in both policy areas is needed. We therefore call for the development and implementation of effective measures that address both endocrine disrupting chemicals and climate change in a coordinated fashion. An effective way of achieving this would be by creating an organization within the United Nations with the same international standing and charge as the Intergovernmental Panel on Climate Change. This body would review the science to be used by decision makers in the public interest and would protect our science from the influence of vested interests.

We owe this to the generations that have to live in the future.

The primatory signatories of this article are : **Andreas Kortenkamp**, Brunel University (UK); **Barbara Demeneix**, CNRS/Muséum national d'histoire naturelle (France); **Rémy Slama**, Inserm, University Grenoble-Alpes (France); **Edouard Bard**, Collège de France (France); **Ake Bergman**, Swetox Research Center (Sweden); **Paul R. Ehrlich**, Stanford University (USA); **Philippe Grandjean**, Harvard Chan School of Public Health (USA); **Michael Mann**, Penn State University (USA); **John P. Myers**, Carnegie Mellon University (USA); **Naomi Oreskes**, Harvard University, Cambridge (USA); **Eric Rignot**, University of California (USA); **Niels Eric Skakkebaek**, Rigshospitalet (Denmark); **Thomas Stocker**, University of Bern (Switzerland); **Kevin Trenberth**, National Centre for Atmospheric Research (USA); **Jean-Pascal van Ypersele**, Université catholique de Louvain (Belgium); **Carl Wunsch**, Massachusetts Institute of Technology (USA); **R. Thomas Zoeller**, University of Massachusetts, Amherst (USA).

The other signatories are

Ernesto Alfaro-Moreno, Swetox Research Center (Sweden); Anna Maria Andersson, Rigshospitalet (Denmark); Natalie Aneck-Hahn, University of Pretoria (South Africa); Patrik Andersson, Umeå University (Sweden); Michael Antoniou, King's College (UK); Thomas Backhaus, University of Gothenburg (Sweden); Robert Barouki, Université Paris-Descartes (France); Alice Baynes, Brunel University (UK); Bruce Blumberg, University of California, Irvine (USA); Carl-Gustaf Bornehag, Karlstad University (Sweden); Riana Bornman, University of Pretoria (South Africa); Jean-Pierre Bourguignon, University of Liège (Belgium); François Brion, Ineris (France); Marie-Christine Chagnon, Inserm (France); Sofie Christiansen, Technical University of Denmark (Denmark); Terry Collins, Carnegie Mellon University (USA); Sylvaine Cordier (emeritus), IRSET, University of Rennes (France); Xavier Coumol, Université Paris-Descartes (France); Susana Cristobal, Linköping University (Sweden); Pauliina Damdimopoulou, Karolinska Institute Hospital (Sweden); Steve Easterbrook, University of Toronto (Canada); Sibylle Ermler, Brunel University (UK);

Professor Silvia Fasano, University of Campania - Luigi Vanvitelli (Italy); Michael Faust, F+B Environmental Consulting (Germany); Marieta Fernandez, University of Granada (Spain); Jean-Baptiste Fini, CNRS/ Muséum national d'histoire naturelle (France); Steven G. Gilbert, Institute of Neurotoxicology & Neurological Disorders (USA); Andrea Gore, University of Texas, (USA); Eric Guilyardi, University of Reading (UK); Åsa Gustafsson, Swetox Research Center (Sweden); John Harte, University of California, Berkeley, (USA); Terry Hassold, Washington State University (USA); Tyrone Hayes, University of California, Berkeley, (USA); Shuk-Mei Ho, University of Cincinnati (USA); Patricia Hunt, Washington State University (USA); Olivier Kah, University of Rennes (France); Harvey Karp, University of Southern California (USA); Tina Kold Jensen, University of South Denmark (Denmark); Henrik Kylin, Linköping University (Sweden); Susan Jobling, Brunel University (UK); Maria Jönsson, Uppsala University (Sweden); Sheldon Krinsky, Tufts University (USA); Bruce Lanphear, Simon Fraser University (Canada); Juliette Legler, Brunel University (UK); Yves Levi, Université Paris Sud (France); Olwenn Martin, Brunel University London (UK); Angel Nadal, Universidad Miguel Hernández (Spain); Nicolas Olea, University of Granada (Spain); Peter Orris, University of Illinois (USA); David Ozonoff, Boston University (USA); Martine Perrot-Applanat, Inserm (France); Jean-Marc Porcher, Ineris (France); Christopher Portier, Thun (Switzerland); Gail Prins, University of Illinois (USA); Henning Rodhe, Stockholm University (Sweden); Edwin J. Routledge, Brunel University (UK); Christina Rudén, Stockholm University (Sweden); Joan Ruderman, Harvard Medical School (USA); Joelle Ruegg, Karolinska Institute (Sweden); Martin Scholze, Brunel University (UK); Elisabete Silva, Brunel University (UK); Niels Eric Skakkebaek, Rigshospitalet (Denmark); Olle Söder, Karolinska Institute (Sweden); Carlos Sonnenschein, Tufts University (USA); Ana Soto, Tufts University (USA); Shanna Swann, Icahn School of Medicine (USA); Giuseppe Testa, University of Milan (Italy); Jorma Toppari, University of Turku (Finland); Leo Trasande, New York University (USA); Diana Ürge-Vorsatz, Central European University (Hungary); Daniel Vaiman, Inserm (France); Laura Vandenberg, University of Massachusetts (USA); Anne Marie Vinggaard, Technical University of Denmark (Denmark); Fred vom Saal, University of Missouri (USA); Jean-Pascal van Ypersele, Université catholique de Louvain (Belgium); Bernard Weiss, University of Rochester (USA); Wade Welshons, University of Missouri (USA); Tracey Woodruff, University of California (USA).