CLIMATE ACADEMY®
The Scientific Supplement

Chapters Eleven and Twelve

The Psychology of Climate Change

Inability to Act in Support of Climate Change

Summary

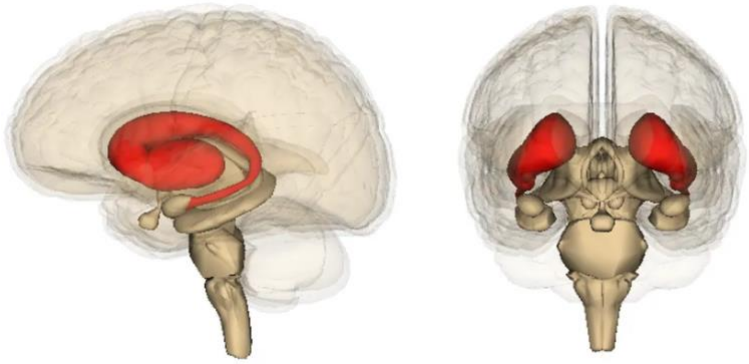
This supplement explores why human beings often fail to respond adequately to climate danger even when the evidence is clear. It draws on neurobiological work, especially Sébastien Bohler's discussion of the striatum, to explain how behaviour can be pulled toward immediate reward, status, comfort and low effort rather than long-term collective interest. The cortex may reason, but the deeper reward systems of the brain often have the final say. By linking climate inaction to dopamine, addiction-like reward circuits and inherited survival drives, the text shows why knowledge alone is not enough to produce action. The problem is not simply ignorance but a mismatch between the scale of the threat and the psychology shaped by evolution. This supports the chapter's wider focus on the psychology of climate change: our brains are brilliant, but they are also biased toward short-term gratification, making disciplined, system-level response to slow-building global risk especially difficult.

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INABILITY TO ACT IN SUPPORT OF THE CLIMATE

Far from explaining the inadequacy of policies and measures to limit global warming, some scientists are trying to analyse the psychological sources that can explain our behaviour in the face of the multiple dangers posed by climate change.

In his books [(1)], neurobiologist Sébastien Bohler details the role of a particular brain structure: the **striatum**.



The striatum is red, the cerebral cortex is in beige [(2)]

The striatum is a particularly well preserved deep nerve structure through vertebrate animal groups, from lamprey to humans. Because it has many dopamine synapses, the striatum is often described as the seat of impulsive behaviours guided by immediate satisfaction. It is indeed dopamine, usually presented as a neurotransmitter of pleasure that is found in the neural circuits of the reward.

Neurobiologists identify five basic instincts essential for the survival of any species and therefore of course for that of the human species:
The search for food, reproduction, the acquisition of domination (power, social status), the lowest expenditure of energy to obtain a result (the least effort) and finally the collection of signals from the environment (information)
Of course, the human brain has been characterised by a global development of all its structures for 7 million years. From 340 cm^3 to 1 400 cm^3 today, the cortex, seat of intelligence and consciousness, has developed particularly. He obviously maintained anatomical links with the striatum.

Drawing on work carried out by Canadian neurobiologists [(3)] on rats who could not get rid of their addiction to the overstimulation of their striatum (i.e. dopamine discharges) despite electroshocks, Sébastien Bohler summarises the interaction between cortex and striatum for a simple formula: 'The cortex offers, the striatum disposes'. Many neurobiologists, however, nuance the role of the striatum by insisting on the intervention of a very wide variety of neuronal circuits in the realisation of complex actions.

The development of our cortex results in consciousness and socialisation. The emergence of ever more sophisticated techniques is also to take into account this hypertrophic structure. Technologies today allow the unlimited relaxation of primitive instincts as evidenced by access to more food (global epidemic of obesity), information, sexuality (pornography), etc.

Such an argument has the merit of seeking the neurobiological foundations of man's inability to act against his instincts. It also paves the way for a possible solution to the problem by educating our brains to value other behaviours such as altruism and sobriety.

(1) Martouzet, D. (2020). Le bug humain. Pourquoi notre cerveau nous pousse à détruire la planète et comment l'empêcher, Sébastien Bohler, Paris, Robert Laffont, 2019.

(2) Vairet, F. (2020b, janvier 6). Le cerveau de l'homme serait paramétré pour ne pas être écolo. Les Echos Start. https://start.lesechos.fr/societe/environnement/le-cerveau-de-lhomme-serait-parametre-pour-ne-pas-etre-ecolo-1175331

(3) Shizgal, P. (2001). Brain Stimulation Reward. *Elsevier eBooks*, 1358-1362. https://doi.org/10.1016/b0-08-043076-7/03550-6

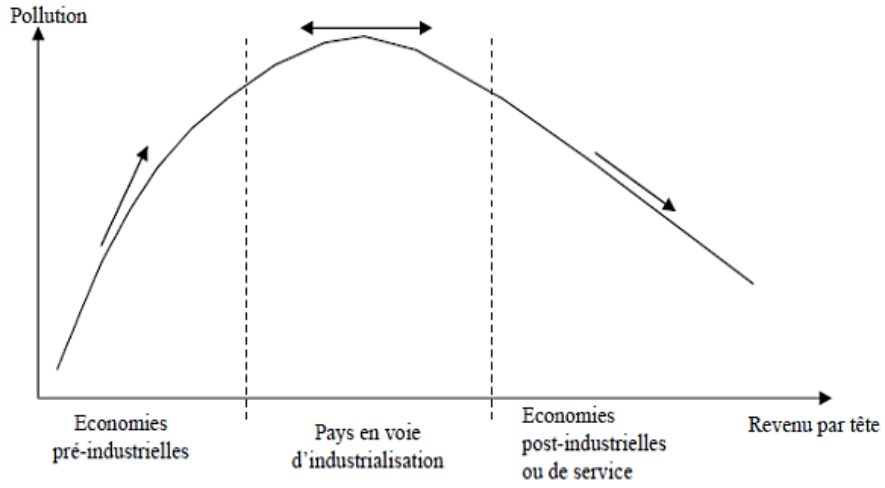
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For this, it is necessary to strengthen our consciousness as Hannah Arendt defines it: 'A silent dialogue of oneself with oneself [...guiding choices towards] the approval or disapproval of [our] like.'

Of course, the sole use of the atavism of our individual neural circuits to explain our global predation on nature amounts to ignoring the political and ideological choices that govern our societies. The latter are directly responsible for our collective behaviours.

For example, as early as 1993 a model diverted from economist **Kuznets**' work on economic development and income emerged. Known today as " **Environmental Kuznets Curve**" EKC, this reverse U graph presents technological development as the cure for environmental pollution. *(Source : école des mines de paris)*

The following succession is carried out for air pollution (fine particles and SO_2) and water pollution (heavy metals and pathogens)



1. In pre-industrial economies the increase in incomes is directly linked to agriculture that degrades the environment. This nevertheless guarantees the sustenance of individuals.
2. In the process of industrialisation, urbanisation and extractives' activities generate significant pollution. However, these are accompanied by an increase in income to reverse the trend.
3. Post-industrial economies can dedicate a share of their income to preserving the environment and reducing the environmental footprint.

This empirical model is attractive because it offers a happy perspective and fits perfectly into today's capitalist economy. It makes it possible to consider economic growth as the source of revenue for states allowing the financing of citizens' environmental requirements.

Unfortunately, a great deal of work carried out over the past 30 years has contradicted this model both in terms of methodology and the theories used.

Thus, this curve has been drawn on a very small basis of local pollutants (global pollutants such as CO_2 are not taken into account) and without integrating developing countries.

Stern and Common in 2001 estimate, for example, considering all countries and the pollutant SO_2, that revenues of US$100,000 would have to be accumulated to reach the tipping point of the curve.

Moreover, globalisation promotes the relocation of pollution as countries develop their economies. Global pollutants whose harmful effect is diffused and shifted over time is not directly perceived by individuals and therefore does not encourage political action.

Finally, Mathis Wachernagel, who helped define the **ecological footprint** irrevocably associates a proportional degradation of it with an increase in income per person.

Finally, it seems interesting to integrate this Kuznets environmental curve into an even broader perspective; those of the great known cognitive biases.

These are also important in understanding the inertia of climate action. The ECK perfectly illustrates the **bias of optimism** which tends to conceive of technical progress as a universal remedy to problems. This same bias, moreover, pushes to minimise problems (bioclimatic) because we are convinced that they will not have the same impact where we live.

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