From knowledge to action: regarding the engagement of scientific researchers in a context of bioclimatic crisis

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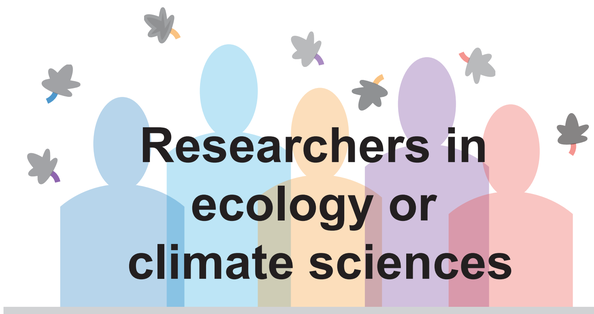
Abstract

Researchers in ecology represent a social group of particular interest in times of bioclimatic crisis. Their work often consists in studying the causes and consequences of environmental change on populations, communities or ecosystems. Their scientific education and occupation provide them with tools and figures to entirely grasp the gravity of human-caused disruptions, placing them at the apex of rational awareness in these topics. Hence, researchers comprise an ideal cohort to question if a proficient scientific understanding of the bioclimatic crisis leads to proportionally-elevated forms of ecological engagement. We discuss why knowledge might not be sufficient for action in this setting and present levers which may underlie their decoupling. Finally, we reflect on the potency of rational thinking to initiate ecological engagement and question what more research may or may not allow.



Apex of rational knowledge in ecology and climate science

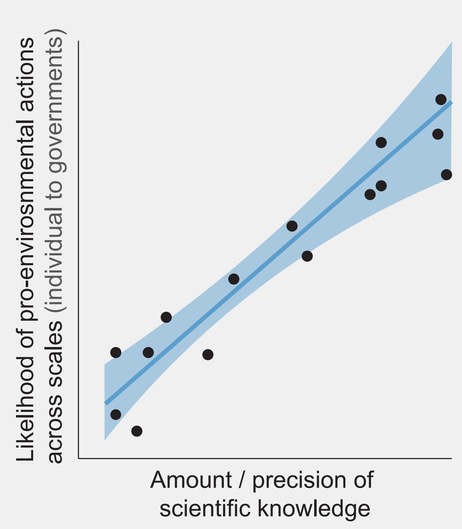
Trained to be critical, some degree of freedom in their schedule, relatively high socioeconomic status.

Is the engagement of ecologists proportional to their knowledge of the gravity of the bioclimatic crisis ?

Knowledge hypothesis

« In order to protect the cryosphere, we must first understand it better and hence increase research funds. »

French National Research Council (CNRS), 24th Nov. 2023



Specific hurdles impeding the engagement of researchers

→ The **paradigm of simplicity** decomposes complexity in fragments (*disjunction*) or unites it in homogenous blocks (*reduction*).

• Reductionism leads to **abstraction,** severing « systems » from their *in situ* environment (*e.g.*, microcosms) : **emotional detachment**.

• Cartesianism forms the basis of **naturalist ontology** (Descola): our inwardness differs from **non-humans**, we do not belong.

« As our knowledge of **isolated segments** and **fragments** is being infinitely refined to microscopic scales, **our ability to link these parts** together and to **materialise them** into rational activities keeps disappearing. Even in the most specialised fields of knowledge, (...), the most conscientious scholar will struggle to keep his head above water. In order to cope with the landslide-like dynamic of **rapid knowledge acquisition**, (...) a hundred new journals have been dedicated to press exerpts ; and now, it has been proposed to publish further extracts from these extracts. »

L. Mumford, *The Myth of the Machine* (1967)

? Is the ubiquitous reductionism of the scientific method an **obstacle** to our **empathy,** or to our ability to **see the whole picture**?

→ Research is « **neutral** », so should be scientists if face of the facts depicting climate change or biodiversity loss.

• **Neutrality** was not presented as such by Weber (1917).

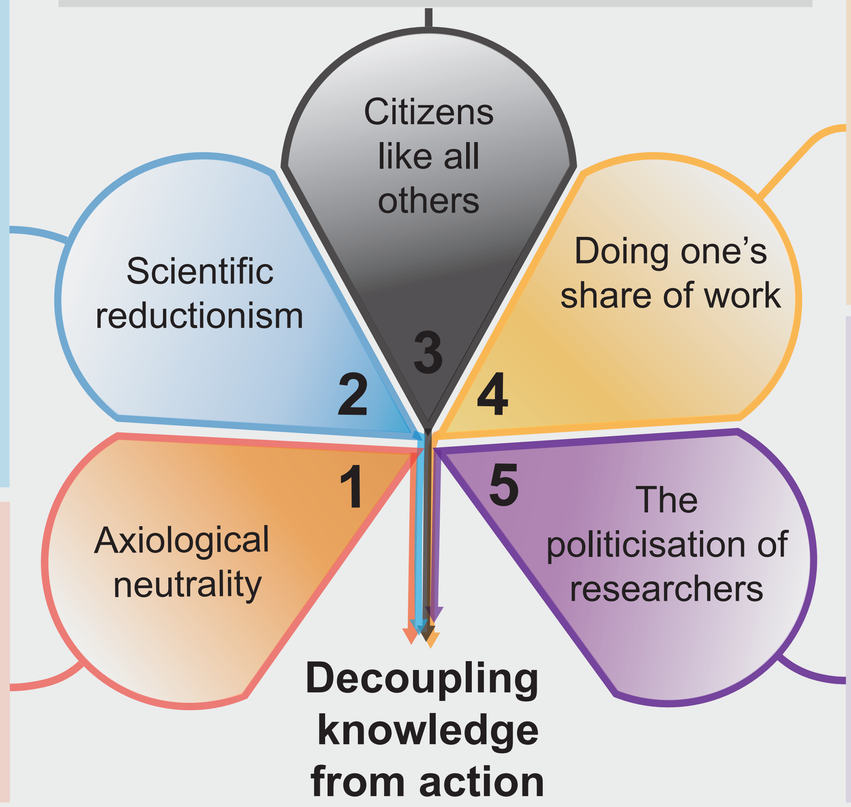
• **Depoliticises** results and objects of study.

• Fear of **conflict** between **expressing one's emotions** and **scientific credibility.**

? Does the **myth of neutrality** create an **alibi for inaction**?

→ Researchers share the **same limits to engagement** as other citizens (*Dragons of inaction*, Gifford (2011); *Discourses of climate delay*, Lamb (2020); e.g., familial duties, sedative entertainment).

? Should we expect a **rational epiphany**, opening the eyes of politicians and citizens if scientists cannot overcome these hurdles ?



→ The single role of scientists is to act as **informers, experts**, accumulating **more knowledge** to guide decision-making and raise awareness.

« Created in 1988 by the World Meteorological Organization and the United Nations Environment Programme, the **objective of the IPCC** is to **provide governments** at all levels with **scientific information** that they can **use to develop climate policies**. »

IPCC website, consulted on Nov. 30th, 2023

• The belief in the **efficacy of science** swallows all forms of engagement : the quest for **knowledge prevails** and **justifies all needs**.

• Pronounced **scientism**: techno-solutionism (*e.g.*, geoengineering).

? After **28 C**onference **O**f the **P**arties, **6 IPCC** reports and **45** years since **Charney's** report (1979), shouldn't we question our beliefs regarding the benefits of more research in our fields?

→ Researchers **do long years** of studying **in academia,** which requires a high degree of **social conformity** with the system.

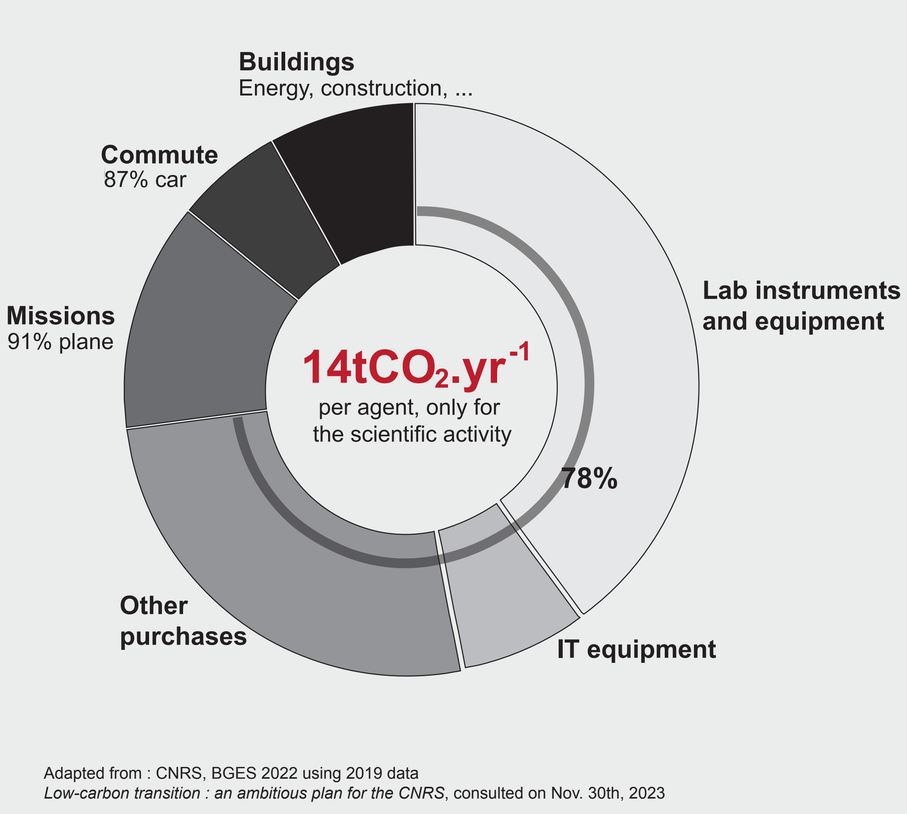
• Generally **obedient**, **well-behaved** students used to **abide by the game's rules.** Academical excellence demands **abnegation** and is sprinkled with **rewards** (*e.g.*, marks, acknowledgement by peers, ceremonies). Does this not **hinder rebellion**?

• Could the current world of research select more for **individualistic, competitive people** devoting little time to collective issues?

• Researchers are **relatively upper-class** and benefit from socio-economical **privileges**, which may be at stake if systemic changes were implemented (*e.g.*, degrowth).

? To what extent are researchers **more committed** when their **social status is at stake** (wages, recruitment policies, etc.)?

The ambivalence of science: knowledge comes at a cost



Adapted from : CNRS, BGES 2022 using 2019 data

Low-carbon transition : an ambitious plan for the CNRS, consulted on Nov. 30th, 2023

Which research and how ? Growing needs for reflexivity on our activity as scientists

I am a researcher in ecology, **(...)**

(...) I believe that **we need more knowledge** to protect ecosystems and raise awareness.

(...) my research is **not aimed at providing solutions**, it is **fundamental**. We should stop making promises (*e.g.*, in grant proposals).

How much time do you **devote,** yourself, **to popularisation**, or thinking about how to do it properly?

Scientific **knowledge** does **not** seem to be **sufficient**, albeit necessary.

We've had **convincing data** accumulating for **more than 50 years**, yet **we lack strong actions** from our governments.

Scientific **research by itself** intrinsically has a negative impact on climate - **knowledge comes at a cost**.

Research always belongs to a **socio-political context**, it does not revolve around itself.

Can we afford to keep **using our energy and curiosity** to improve our **understanding of biological systems** amid a state of grave **emergency**?

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