



Enhancing Research
Understanding through Media

REPORT: CONTROVERSIAL TOPICS
REPRESENTED IN MEDIA



Climate Change Scepticism

SUB-REPORT

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1. Definition of topic and period of analysis

Climate change and climate change scepticism in 2019 and 2020.

2. General Introduction

Climate change has been and continues to be one of the foremost subjects in media coverage as far as scientific subjects are concerned. Climate change is impacting ecosystems and societies worldwide. Controversy initially arose over the question whether climate change was indeed increasingly observable in the past few decades, if this was a new phenomenon or just a normal thing to happen – like we have witnessed over very long periods of time in the earth’s history – and to what extent – if at all – humans played a role in this, especially as far as global warming is concerned. A recent report from the American Geophysical Union sums up the on-going process:

“Over the past century, as a result of burning fossil fuels and other human activities, atmospheric concentrations of greenhouse gases, including CO₂, methane, nitrous oxide, and halocarbons—have risen to levels unprecedented in at least the last 800,000 years. Extensive observations document that the global average surface temperature in the atmosphere and ocean has increased by about 1°C (1.8°F) from 1880 to 2018. The current decade is now the hottest in the history of modern civilization. Based on extensive scientific evidence, it is extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century. There is no alternative explanation supported by convincing evidence.” (AGU, 2019)

Scientific findings have put pressure on political and economic decision-makers. At international level, the Intergovernmental Panel for Climate Change (IPCC) was called into existence to monitor on-going processes and change and to provide state-of-the-art explanations as well as models of what might happen in the future, impacting the outcomes of such major international meetings as the *Paris Climate Conference* in 2015 and its protocol. At the same time, critical views about climate change and its supposedly man-made causes as well as impact continue to be voiced by some scientists (though rarely from the fields of environmental science and climatology) and a variety of political and economic stakeholders, as well as some independent writers and essayists, the central issue being mainly now not whether current global warming is man-made, but to what extent human activities, notably the burning of fossil fuels, accelerate the process. From these remarks, then, derives the question – and difficulty – of how to recognise a particular type of climate-change related, especially climate-sceptic, discourse and/or opinion since dissimulation, disingenuity in treating facts and the use of labels to tarnish the image of others are frequent strategies employed, as we will see from the analysis below, while reputation of the media covering the subject is also an important criterion to appreciate content. In terms of methodology, the spectrum of different types of articles needs to be looked at, that-is-to-say, the genre of an article plays an important role (news, feature, opinion and comments column, blog etc.) and the media in which it was published, as well as the tendency of “labelling” discourse in relation to climate change scepticism. The methodology is based on a series of items that were pre-determined by the

ERUM consortium in view of achieving the project's objectives and the specific intellectual output this sub-report contributes to.

The subject is of major interest since the degree to which the need for urgent action is admitted or not influences policy-making at local, regional, national and international level, for instance scheduling of closing down coal-mining activities and power stations using non-renewable fossil fuel, CO₂ emissions caused by industrial activities and transport etcetera. The range of views one may come across in this debate varies from those convinced about the negative, man-made impact of climate change and feeling alarmed about it, called “warmists”, “alarmists” and even “doomists” in their most radical variant, those who defend a more moderate view usually referred to as “climate realists” to those who have doubts about or do not accept the idea of man-made climate change, known as “climate sceptics” and “climate deniers” in their most extreme form. Discussions draw to a variable degree on scientific data to sustain arguments, at times quoting studies that fit the argument and leaving out others, at others voicing less rigorously scientifically based views. The problem of mis- or disinformation is therefore frequently at the core of these debates which are even driven by certain economic interests – be it in favour of fossil fuel-friendly policies or the contrary, as we will see.

In France, these debates have been ongoing for some twenty years. A notable milestone was an article published in 2006 by former Education Minister and renowned physicist Claude Allègre in the magazine *L'Express* questioning man-made global warming. One of the foremost French climatologists, Jean Jouzel then was part of the team receiving the Nobel Peace Prize in 2007. One of Jouzel's best-known students, Valérie Masson-Delmotte has since then become one of the leading French climatologists, co-chair of IPCC's working group I and a frequent participant in public debates taking up strong positions against climate scepticism. Scientists voicing such sceptical positions in France and elsewhere are less and less frequent to express themselves and rarely given full scope in mainstream media. Such positions tend to be directly voiced through websites of associations that have been founded by them or organisations and institutes, notably in the United States, clearly driven by or supporting particular economic interests. The most notorious example in France is scientist and former French minister Claude Allègre's highly controversial book entitled *L'Imposture climatique ou la fausse écologie* from 2010 (*Climatic Fraud or False Ecology*). Allègre was accused by a number of leading climatologists to have drawn on approximations and even outright lies to build up his argument. In the UK, the astrophysicist Piers Corbyn has become a controversial public figure, claiming that man's contribution to global warming is minimal. In another vein, organisations such as the *Heartland Institute* sponsor climate-sceptic positions. The potential of the topic for controversy, therefore, and the associated risk of mis- or disinformation, or at least misleading ways of presenting data and a case, is remarkably high and ideally suited for the scope of ERUM.

3. Desk Research

The best starting-point for collecting scientifically-rigorous information about climate change are no doubt the reports of the IPCC¹, the Intergovernmental Panel on Climate Change being “the United Nation’s body for assessing the science related to climate change”. Members of IPCC count among the best-known and most-respected international experts on climate change. Its three working groups examine “the physical science underpinning past, present, and future climate change” (WG I), assess “the vulnerability of socio-economic systems to climate change, negative and positive consequences of climate change and options for adapting to it” (WG II) and focus on “climate change mitigation, assessing methods for reducing greenhouse gas emissions, and removing greenhouse gases from the atmosphere” (WG III). The IPCC regularly publishes assessment reports and additional documents such as the special report *Global Warming of 1,5 °C*. In the summary for policymakers of this report dated October 6th, 2018 (IPCC, 2018), the first section provides scientifically-robust information to understand global warming of 1,5 °C, explaining notably that

“human activities are estimated to have caused approximately 1,0 °C of global warming above pre-industrial levels, with a **likely** range of 0,8 °C to 1,2 °C. Global warming is **likely** to reach 1,5 °C between 2030 and 2052 if it continues to increase at the current rate. (**high confidence**)”. [note the indications of probability]

Secondly,

“warming from anthropogenic emissions from the pre-industrial period to the present will persist for centuries to millennia and will continue to cause further long-term changes in the climate system, such as sea level rise, with associated impacts (**high confidence**), but these emissions alone are **unlikely** to cause global warming of 1,5 °C (**medium confidence**).”

Thirdly,

“climate-related risks for natural and human systems are higher for global warming of 1,5 °C than at present, but lower than 2°C (**high confidence**). These risks depend on the magnitude and rate of warming, geographic location, levels of development and vulnerability, and on the choices and implementation of adaptation and mitigation options (**high confidence**).”

The summary also insists on the possibilities of mitigation in its conclusion. Point D.7 notably affirms:

“Strengthening the capacities for climate action of national and sub-national authorities, civil society, the private sector, indigenous peoples and local communities can support the implementation of ambitious actions implied by limiting global warming to 1,5 °C (**high confidence**). International cooperation can provide an enabling environment for this to be achieved in all countries and for all people, in the context of sustainable development. International cooperation is a critical enabler for developing countries and vulnerable regions (**high confidence**).” (IPCC, 2018)

¹ see <https://www.ipcc.ch>

Such scientific findings and recommendations voiced by a broad platform of leading specialists sponsored by the United Nations are likely to have a significant impact on policymaking worldwide, especially as far as economic and social policies are concerned. The potential or pretended extra cost of such action is one of the key points at stake in discussions about climate-friendly action. Many discussions do not revolve around essentialist questions of whether or not there is a man-made impact on climate change – extreme views excepted – but focus on the degree to which on-going change is harmful and how urgent actions should be taken, the means that should be employed and whether this should occur at national and/or international level.

Apart from its own reports, the IPCC also provides links to other expert organisations such as the World Meteorological Organisation, “the United National’s authoritative voice on weather, climate and water” according to a statement on WMO’s website. In its report about the climate in 2018, one may find some hard facts useful to bear in mind when reading this sub-report:

“2018 is on course to be the fourth warmest year on record. This means that the past four years – 2015, 2016, 2017 AND 2018 – taken together are the four warmest years on record”; “Levels of carbon dioxide concentrations continued to increase in 2018. (...) Increasing levels of greenhouse gases in the atmosphere are key drivers of climate change”; “Mean global Mean Sea Level for the period from January to July 2018 has been 2 to 3 mm higher than for the equivalent period in 2017”; “(...) For each three-month period in 2018, the ocean heat content in the upper 700 m and upper 2000 m were either the highest or second highest on record”; “In the past decade, the oceans absorbed around 25 % of anthropogenic carbon dioxide emissions”; “Arctic sea-ice extent was well below average through 2018 and was at record-low levels for the first two months of the year”; “Antarctic sea-ice extent was also well below average throughout 2018.” (WMO, 2018)

In the case of Arctic sea-ice extent, a very recent article, dated April 17th, 2020, published by *Geophysical Research Letters*, states in its plain language summary that “in most simulations, the Arctic Ocean becomes practically sea-ice free (sea-ice area < 1 million km²) in September for the first time before the year 2050” (Notz et al., 2020). This would mean that the albedo effect of the Arctic Ocean is no longer working, the sun’s radiation being absorbed by and warming the water, rather than reflecting and rejecting sun rays.

One could add scientific publications of the members of IPCC and their outreach work, for instance Valérie Masson-Delmotte’s book *Climat: le vrai et le faux* (2011) and Valéry Laramée de Tannenbergs’s book *Agir pour le climat: Entre éthique et profit*, prefaced by Masson-Delmotte (2019). “Communication about the climate invariably turns out to be a matter of passion rather than reason”, Valérie Masson-Delmotte observes “some use alarmism, fear or guilt; ecological ‘virtue’ is a selling device; others deny scientific facts in the name of conspiracy theories.” (2011, n.p. – our translation). But the facts are there, as Valéry Lamarée de Tanneberg remarks:

“the global mean temperature is rising by 0,2 °C per decade, as the IPCC has shown. The nine hottest years are all posterior to 2004; and they all beat the sad record of 1988. (...) Since the 18th century, global warming of anthropic origin is close to 1 °C.

Regional variations excepted, the rise of temperatures in the Arctic is twice to three times more rapid than elsewhere.” (2019, n.p. – our translation)

Amongst the many English-language publications one can mention notably Gavin Schmidt et al.'s *Climate Change: Picturing the Science* (2009), Michael Mann's and Tom Toles' *The Madhouse Effect: How Climate Change Denial Is Threatening Our Planet, Destroying Our Politics, and Driving Us Crazy* (2016) or the more journalistic writings of Naomi Klein such as *This Changes Everything: Capitalism vs The Climate* (2014). The websites of highly-respected institutes engaged in climatological and sustainability studies can also be cited in this context: for example, the environmental studies program at the University of Colorado Boulder, the two principal environmental science and atmosphere physics laboratories of UVSQ/Université Paris-Saclay LATMOS and LSCE (the lab Valérie Masson-Delmotte is a member of), the Potsdam Institute for Climate Impact Research, the Rachel Carson Centre at Ludwig-Maximilians-University in Munich, etcetera.

To underscore the research question outlined above, let us look at some more observations from internationally renowned climatologists about the current dilemma human societies and their decisions-makers are facing: On the one hand, the scientific facts are there, but on the other, the reluctance to implement appropriate policies to counteract or at least hem the impact of climate change remains strong and is largely driven by economic interest refusing to take into consideration long-term environmental goals, not to say imperative action. Thus, Valérie Masson-Delmotte notes in her preface to Lamarée de Tannenberg's book (2019, n.p.) that “scientists do their job to produce new knowledge which they evaluate according to rigorous methods and which they then communicate to governments. Still, despite the creation of IPCC 30 years ago, greenhouse gas emissions continue to rise worldwide.” Appropriate measures are still a far cry from what would be needed according to scientists. As to the media, Michael E. Mann hints at one of the central problems at stake here in a blog dated January 29th, 2020, referring to a recent commentary published in *Nature* relayed somewhat misleadingly, according to Mann, by the *BBC*:

“A new commentary in the journal *Nature* by Zeke Hausfather and Glen Peters is making the rounds today. The commentary is similar in content and outlook to a previous piece written by Hausfather on the website of the ‘Breakthrough Institute’ a month ago, arguing that ‘business as usual’ burning of fossil fuels will likely only lead to 3C warming, rather than the considerably higher range of 3-5C warming typically cited based on past IPCC projections. The latter piece was relied upon heavily in a recent *Wall Street Journal* op-ed by Breakthrough Institute founder Ted Norhaus that is highly dismissive of the need for rapid reduction in global carbon emissions. The new piece has predictably led to some distorted headlines, for example this one by the *BBC*: ‘Climate change: Worst emissions scenario ‘misleading’’, which, itself, is ironically rather misleading.” (2020)

Misleading is a useful term to guide us through the analysis of the material selected here since it represents possibly the most subdued form of pointing to a number of problems in the articles discussed below. Be that as it may, the central issue is the apparent dichotomy between available, rigorously researched and pondered scientific knowledge about climate change and

its impact, especially as far as global warming and sea level rise are concerned, and the way in which data is interpreted by different actors for a variety of purposes, the media playing an essential role in communicating about knowledge and voicing opinion. As to the latter, it has become customary to classify views and their holders according to five fairly loose categories in relation to the notion of climate change scepticism: climate change doomerism (*BBC News*, March 16th, 2020), climate change alarmism (*Forbes*, December 4th, 2020), climate change relativism (*JIEC*, November 28th, 2019), climate change scepticism (*Reporterre*, November 28th, 2019) and climate change deniers (*BBC News*, March 16th, 2020). Doomerism, a term referring to the opinion or attitude of “climate change doomists” corresponds to the idea that even radical action cannot impede climate change, alarmism tends to consider that the consequences will be extremely dangerous for humans if radical action is not taken. Climate change realism tries to accommodate the need for action and economic interest by steering a middle course, highly recommending some more or less substantial action and somehow implicitly suggesting that humans can still keep the situation under control. Climate change scepticism includes quite a variety of views differing in kind as to the questioning of the idea of radical change and even the validity of scientific data. Climate change deniers are an increasingly rare species these days, if one may put the issue this way, though some voices continue to question the very idea of climate change accelerated by human activities.

4. General information about the sample

A total of 300 articles have been screened and 30 retained for analysis: 20 articles from French-language media, five from English-speaking and five from German-speaking media (see list of articles in Appendix I). It is not possible to state outright that any article in particular is misrepresenting the subject but it is important to stress that several articles express personal opinions which may be considered controversial, misinforming or at least misleading by others. Basically, the material can be divided as follows: there are seven articles denouncing/openly criticising the climate change sceptic opinions of others, seven pieces actually expressing climate change sceptic views, two that can be defined as climate realist opinion and five as climate alarmist; three articles report on climate-friendly action and six provide information about climate change research.

Concerning the French-language material, the articles have been taken from 19 French and one Mauritian media; four from the magazine *Le Point*, three from the news portal *Reporterre*, two from the magazine *Revue des 2 Mondes* and from the French edition of *Geo*, all the other media have been drawn on only once; the English-language articles stem from three U.S. publications (*Forbes*, *RealEstateMarkets* and the *New Yorker*), one Canadian (*Vice*) and one British (*BBC News*); the German-language pieces are taken from four German media (*Der Spiegel*, *Tagesschau*, *MDR* and *DW*), as well as one Swiss (*Neue Zürcher Zeitung*).

The criteria for choosing the articles were the following: The articles that were taken into account all had to stem from mainstream media; linguistic variety was imposed from the start with at least five articles in English, but five more pieces in German were added to introduce still greater linguistic diversity.

The length of the articles varies (depending whether they include illustrations or not): Five articles of one to three pages; 15 articles of four to six pages; five articles of seven to nine pages; four pieces of 10 to 15 pages; one article of 26 pages. Varying length was chosen on purpose to demonstrate that the size of an article is likely to impact the presentation (short news, feature article, reportage, editorial, long comment/opinion column etcetera).

As regards opinion, it was also imperative to take into consideration a broad spectrum of views while remaining within the sphere of mainstream media. The desk research revealed that views from the extreme ends of the typology (doomerism and climate change denial) are only rarely published in mainstream media. Such opinions tend to be voiced on the highly prolific number of special climate-sceptic or doomerism websites that have been set up in many different countries. Concerning mainstream opinions, it was also important to bear in mind the type of media (daily, weekly, monthly, online only etcetera), its political outlook or ethics (conservative, centre, centre-left, environmentally engaged etcetera), its circulation and the “genre” of the article. Regarding this last category, there are 11 articles dealing with climate change related news (mainly scientific research results but also climate-friendly action reflecting research), 11 pieces are opinion/commentary column articles, six are investigating opinion and two can be described as fact-checking articles.

As to the scope of the articles, out of the 20 French-language pieces, six are focused on national themes, among the English-speaking articles, one U.S. piece is mainly concerned with U.S. interests.

Once again, one outcome of this research is that one can find hardly any obvious attempt to misinform in mainstream media about the subject though the spectrum of opinion may vary from climate change denial (very rare these days) to climate doomerism (another extreme position that is fairly seldom to be found). The way in which rigorous scientific research results may be used by authors and the media is of course another matter (see below) and opinions within the categories outlined above vary in degree.

5. Authorship

Variety of authorship was an important criterion as pointed out above. Not surprisingly, then, we note considerable differences of opinion recognisable in general terms according to the typology suggested above. In terms of profession, 16 authors are journalists, seven are freelance commentators/essayists or politicians, five articles were published anonymously, either by the editors of the media or a press agency like AFP, two were written by scientists (see list of authors in Appendix II). The voicing of point-of-view depends partly on the “genre” or type of article. In an opinion piece, this is naturally what one expects. The fact-checking and informative articles tend to be neutral in terms of personal opinion though it is understood that the media/authors share the opinion that climate change and global warming in particular are partly man-made. This is also the case of the investigative articles, which tend to denounce climate scepticism. Some of the authors are well-known media personalities at national level (Valérie Toranian, Antoine Bueno, Max Falque), in case of one or two Anglophone authors even at international level (Jonathan Franzen and Michael Shellenberger).

The question of authorship also needs to be considered in relation to the media where the piece was published in, the title of the article and its “genre”. A full list of the articles with translations of titles into English can be found in Appendix III. The 30 articles were published by a number of very well-known daily newspapers (*France Soir*, *Libération*, *Neue Zürcher Zeitung*), weekly or monthly magazines (*Le Point*, *Der Spiegel*), some major news portals (*Médiapart*, *Reporterre*), news services of broadcasting companies (*BBC News*, *Tagesschau*) as well as specialised media (*Les Echos*, *Forbes*, *Real Clear Markets*) and two intellectual/cultural magazines (*Revue des Deux Mondes*, *New Yorker*). Titles tend to be either informative, possibly raising a question (17 in total) or provocative (13). Examples of the former include “Bezos promises that Amazon will help to fight climate change” (*Geo*, September 19th, 2019), “Global warming: one person in three has doubts about the responsibility of humans” (*L’Express*, November 29th, 2019), “Did Nasa state that climate change was not caused by humans?” (*Libération*, October 25th, 2019); and of the latter: “Is global warming a ‘lure’? François Gervais’s climate sceptic fraud” (*France Soir*, January 15th, 2019), “Greta Thunberg or the tyranny of well-meaning ecology” (*BIZweek*, n.d.) and “Paul Krugman is a Global Warming Alarmist. Don’t Be Like Him” (*Real Clear Markets*, January 16th, 2020). As to the genre, some articles are fact-checking pieces, a fairly recent rubric that is becoming a permanent feature of a number of newspapers including for example *Libération* in France. Climatologist François Gervais’ article in *France Soir* is an example of scientific fact-checking, revealing misinformation in someone else’s writings and denouncing that person’s principal affirmations. The other fact-checking pieces were written by journalists. Several articles are using factual argumentation to drive home their point, as the article “Is there real climate education in France?” (*Le Point*, October 5th, 2019), written by a climatologist, illustrates. Other pieces may be considered more problematic when it comes to their argument. Though the blog “From global warming to the sixth extinction: it’s an ecocide” (*Médiapart*, May 8th, 2019) was published by a highly respectable news portal, *Médiapart*, the piece is very engaged in tone, not to say activist. Admittedly, the portal sometimes makes staggering claims to denounce scandals. It is also true that a blog is only voicing the opinion of the author and not of the journal though it is rare to see a media publish an opinion contrary to its own convictions (exceptions exist though). In other cases, it is easier for a reader, even a non-specialist, to realise that someone is voicing views which are not mainstream and that might be based on hasty judgment, as in the piece “Greta Thunberg or the tyranny of well-meaning ecology” (*BIZweek*, n.d.) where brevity also struggles to muster enough elements to convince the reader. The situation is more complex when we look at long articles (ten pages and more) by a well-known author or a writer who clearly has relevant credentials and who might be spreading misleading views by over- or under-interpreting scientific knowledge, simplifying data to the point that a reader cannot correctly apprehend the case or including only some facts and avoiding others. Michael Shellenberger’s long opinion piece “The reasons why catastrophist affirmations about climate are wrong” (*Le Point*, December 9th, 2019) is an interesting example, counter-balanced by Antoine Bueno’s opinion column “Catastrophist affirmations about climate are not altogether wrong” (*Le Point*, December 12th, 2019), both published by the same magazine *Le Point* clearly wishing to stage a debate and to encourage discussion. Jonathan Franzen’s article is an exception in this respect since an internationally-acclaimed writer is drawing on his fame to voice provocative ideas in view of impacting mainstream American opinion, published by a highly-respected magazine, the *New Yorker*, that he has been a regular contributor to for many years. Finally, there are several pieces published anonymously because they represent items

taken on by the media from a news agency (AFP). In that case, the question of personal opinion does not appear relevant and the authorship remains collective, the (high) reputation of the press agency presumably working as a guarantee for quality and accurate description.

Authorship is of course an essential aspect in appreciating the quality of an article. In the case of climate change debates, some background knowledge is required to dispose of external references against which to read a particular piece. As illustrated above, the website of UN bodies like IPCC or the WMO provide a lot of reliable, scientifically sound information that is being updated on a regular basis. Once a reader becomes more familiar with the topic and the most prominent voices of public debate, it becomes easier to spot the arguments and to relate them to the climate scepticism typology outlined above. The other criteria of our analysis naturally complement this method.

6. Style of language

If one tries to categorise the articles in terms of style, one could consider 15 articles to be factual and two more pieces to be both factual but also polemical, the latter category fitting also four other pieces. Six items clearly voice an opinion but do so in a restrained and argumentative manner, the remaining three could be considered “engaged” writing in the sense of defending a particular political point-of-view. Having made this observation it is important to note that quite a few terms that a newcomer to the field is not likely to be familiar with appear in the articles. This may concern technical metaphors like *Hothouse Earth* (also known as *greenhouse earth* – periods when there are no continental glaciers and high levels of carbon dioxide and other greenhouse gases such as water and methane), *tipping point* (in climate change studies this refers to thresholds beyond which large changes in the climate system occur), *domino-effect* (referring to potential environmental collapses that can amplify each other) etcetera. Other unusual words or even neologisms can be more easily understood in reference to the typology we proposed above. The expression *climate scepticism* comes up repeatedly and could be seen as reflecting our central problem that is how such attitudes influence the voicing of an opinion. The list of words to be found in the 30 articles includes of course the terms *climate scepticism* and *climate sceptic*, but also more marked expressions such as *climate doomers* (BBC News, March 16th, 2020), *climate negationists* (JIEC, November 28th, 2019), *climate alarmists* (Forbes, December 4th, 2019) and the like. A joint initiative by several French media taken into account within this analysis (articles published by *Reporterre*, *Bastamag* and *JIEC*) tries to classify the attitude of industrial leaders to climate change in the following way: *climate-optimists*, *climate-relativists*, *climate-hypocrites* and *climate-frauders*, the last term in this list being no doubt an allusion to Claude Allègre’s controversial book *L’imposture climatique* (Climatic fraud) referred to above (2010). A highly mediatised figure like Greta Thunberg is called “a guru of the apocalypse” in one French article (*BIZweek*, 2019). Similarly, some articles speak of “apocalyptic declarations” and “catastrophist affirmations” (originally in French – our translation). Linked to this, there is the term *collapsology*. Tending in the opposite direction, we notice the phrase “climate sceptic ambush”, one French author pleading for what he calls “reasonable catastrophism” (*Le Point*, December 12th, 2019 – our translation).

At a more general level, the expression of related attitudes is accused by some authors as corresponding to “extremist rhetoric” or “apocalyptic rhetoric”, or attitudes of “ecocide” and

“eco-anxiety”. Several articles use polemical wordings in their title, such as “(...) the tyranny of well-meaning ecology” (*BIZweek*, n.d.) or “Paul Krugman is a Global Warming Alarmist. Don’t Be Like Him” (*Real Clear Markets*, January 16th, 2020). The most common metaphors and labels are the terms to classify climate-change related opinion: Denial and deniers, scepticism and sceptics, realism and realists, alarmism and alarmists, warmism and warmists, doomism and doomists. Only one article does not use the term climate change but speaks of “climate disorder”. Polemical articles tend to draw more systematically on provocative terms than more modestly stated points-of-view. Factual pieces mainly do not use such expressions and remain relatively jargon-free though newcomers might not know off-hand what *carbon neutrality* may refer to, let alone a neologism like *disanthropocentralising*. Such linguistic “creativity” is, however, characteristic of journalistic writing, media adapting their forms of expression rapidly to describe new phenomena and to reflect the way in which they are referred to by others. The coining of new expressions is one of the adaptation strategies of media if one may put it this way. Since climate change debates invariably also involve ethics, that is to what extent it is – or is not – acceptable to pollute, it is hardly surprising that a typology of attitudes has emerged from the debate.

7. Visualisation

Some articles do not draw on visualisation at all, others do so in various ways. Altogether, the total number of images is 65. Six articles use no visualisation (due partly, presumably, to the column they are published in). The other pieces use varying numbers and types of visual material which can be summed up as follows:

- scientific graphs: 17
- depicting demonstrators: six
- scientists at work: five
- Greta Thunberg: three
- other well-known personalities: nine
- images of the author: three
- caricature/drawing: two
- other: 15 (e.g. firefighters at work in Australia, climate change related images)

The scientific graphs are mostly meant to elucidate phenomena and to help readers understand what is at stake more easily. This is notably the case in the article “Pour le climat, il y aura 'un avant et un après coronavirus” (*Reporterre*, March 17th, 2020) about atmospheric pollution, a phenomenon illustrated by two visuals showing atmospheric pollution in China in January and February 2020, as well as four visuals on carbon monoxide levels in the atmosphere concerning China and Italy prepared by a researcher from the French LATMOS laboratory who is well known for his research on China and a photograph showing air pollution in China to help the reader visualise the problems discussed by the author. In the article “Domino-Effekt bereits in Gang gesetzt. Anstieg des Meeresspiegels nicht mehr zu stoppen” (*Mitteldeutscher Rundfunk*, December 12th, 2019), focusing on scientific research, the media chose to add photographs to illustrate the content, presented with the following captions: “Thwaites Glacier in Antarctica ‘calving’ continuously”, “Thwaites Glacier: beneath which a huge void space is growing; it is supposed to be 10 kilometres long and four kilometres wide according to scientists of NASA’s

Jet Propulsion Laboratory (JPL) in the learned journal *Science Advances*, “The line between ice on the ground and floating ice shelves is called grounding line”.

Another strategy can be seen in the Swiss article (*Neue Zürcher Zeitung*, March 27th, 2019) presenting graphs and photos: several figures and graphs to illustrate what the climatologists are talking about with the following headings/themes: “In the past century, temperatures in the northern hemisphere have risen sharply”, a visual explaining the process of CO₂ emissions into the atmosphere and their impact on the Earth, “the summer semester 2018 was the hottest ever in Switzerland since measures started”, “CO₂ emissions per capita are comparatively low in Switzerland”, “Temperatures are rising – deviation from mean temperatures in the world for the period 1961-1990”, “The air becomes cleaner” and photographs of the two climatologists interviewed.

In a number of cases, photographs illustrate content: For example, in one piece a series of photographs of celebrities at the top of the article with the caption “Climate alarmism may be contributing to rising anxiety and depression among teenagers” (*Forbes*, December 4th, 2019), another photo showing mothers and their children demonstrating, holding a banner with the slogan “Climate change kills children” and the caption “Psychologists around the world say climate alarmism is creating anxiety among children” (*Forbes*, December 4th, 2019), a table entitled “Tech Change Outweighs Climate Change in Food Production” and another photo showing Emma Thompson and others during a demonstration (*Forbes*, December 4th, 2019). In a reportage about people fearing climate disaster and preparing themselves for more autonomy in terms of food production (*BBC News*, March 16th, 2020), four photographs show Rachel Ingram, the person the article focuses on principally (herself, her greenhouse, a child – presumably her daughter – a view of a tag indicating the name of a plant). Other articles contain photographs of people they allude to, Greta Thunberg, notably, industrial leaders, celebrities, scientists etcetera.

In some cases, photographs are used to add extra meaning to the article without being specifically referred to by the author. For instance, the French piece “Les affirmations catastrophistes sur le climat ne sont pas si fausses” (*Le Point*, December 12th, 2020) is accompanied by a photograph showing a placard during a manifestation with a hand-drawn picture of the globe, six red-coloured hearts and the slogan (in French) “Protect my earth”; in the Swiss article “‘Klimahysterie!’, ‘Klimapropaganda!’ – was Klimaforscher zu den häufigsten Argumenten von Skeptikern sagen” (*Neue Zürcher Zeitung*, March 27th, 2019) one finds a photograph of young people sitting on a square, presumably in Zurich, with a sign “Stop CO₂”.

Caricatures may also be used in rare cases. The one striking example we found is a drawing showing three characters: The “climatesceptic”, the “climatecynic” and the “idiot” (*Reporterre*, November 28th, 2019). Given the wording and the nature of the drawing, we are obviously within a polemical framework here as far as rhetoric is concerned. This is also the case in an article showing photographs of the president of the Peugeot group and a far-right member of the European parliament with climate-sceptic labels attached to their names by the media.

All in all, it can be noted that portraits of the author remain exceptional. Greta Thunberg appears several times and clearly functions as an icon. Some other personalities are shown to illustrate the combat in favour of climate-friendly action; the same remark is valid for the

images of demonstrators. Visualisation is used in the vast majority of cases (four out of five), the articles most clearly based on or presenting scientific research results tend to draw more systematically on scientific visualisation though readers should be aware of the fact that the presence of a scientific chart in an article is not a guarantee for what is stated in the text is accurate. Given the wealth of scientific data and visualisation thereof available in open access mode, it is easy to draw on such material for an article and to operate in a highly selective mode that may be misleading. In one case, an article published by a particular media in response to another piece published by the same magazine sets out to demonstrate how the other article contains numerous flaws and misleading information (*Le Point*, December 9th, 2019; *Le Point*, December 12th, 2019). Admittedly, both were published as statements that do not engage the magazine itself.

8. Controversy

This is where we come to the crux of the matter since most of the problems detected are connected to the fact that the subject we are focusing on – climate change scepticism – is a very controversial issue itself. In two notable cases, the claims of another author are more or less systematically examined and considered to be misleading. The first example concerns the ideas of a retired physicist, François Gervais, who defines himself as climate-realist, while others call him climate-sceptic. Bréon observes: “François Gervais represents science, his discourse resembles scientific discourse, he uses scientific references. All of this may cheat a non-initiated audience. His book *L’Urgence climatique est un leurre* (Climate urgency is a lure) is full of nonsense and even lies.” (*France Soir*, January 15th, 2019 – our translation). Here we are in the realm of investigative scientific journalism practised by scientists themselves, a sphere of scientists’ outreach activities they engage in with increasing intensity, including some climatologists mentioned above, and illustrated notably by the portal *theconversation.com* which publishes articles by academics. Such scientists are worried by the potential threat of misleading articles published by other scientists gaining undue public attention which may impact environmental policies, and, it is true, climate change related research funding. The second example is the essayist Michael Shellenberger, reread and criticised by Antoine Bueno, both pieces having been published by *Le Point*. Shellenberger discusses what he calls “apocalyptic predictions” about climate change, global warming and sea-level rise in particular, and the supposed threat of humanity disappearing altogether, defending his own point-of-view clearly expressed towards the end of the piece pleading in favour of a moderate stance: “Happily, there is a plenty of middle ground between climate apocalypse and climate denial” (2019). Shellenberger’s article was originally published by *Forbes* and is indicated on the magazine’s website as having received 709.745 views. Bueno affirms that Shellenberger’s article is full of false statements, some of them almost as manifest as those of the “collapsologues” Shellenberger denounces himself. This means, Bueno argues, that we need to be worried again and perhaps forever, leading to the remark: “the quest of responsible ecologism requires more restraint” (*Le Point*, December 12th, 2019). Bueno opines that the central idea of Shellenberger’s article can be summed up in one phrase: “global warming will only have a marginal impact on humanity”, an opinion judged “delirious” by Bueno. The latter’s own conclusion is to observe that “while collapse is probably a fable, climate change does represent a considerable danger”. The problem here is less one of presenting “fake news” than

misinterpreting data or offering misleading readings of available material that then lead to conclusions which others contest. The only way to avoid falling victim to such misleading rhetoric is of course to engage with several opinions on a given matter.

In other cases, the polemical tone chosen by an author may introduce another problem: excessive wording, which may be used as a strategy to alert opinion. In the blog found on *Médiapart*, this is clearly the author's choice:

“we have to tell and retell certain facts so that everyone knows about them and has understood them, we have to dynamite a certain number of preconceived views which refrain us from focusing on what is really at stake, we have to rip apart mechanisms of sabotage against resistance and civil disobedience, we have to limit damage and to prepare ourselves as best we can for what is unavoidable. In brief, to act. Act quickly and well. There is no more time for hesitating.” (*Médiapart*, May 8th, 2019 – our translation)

In a rather different vein, the article published in Mauritius speaks about what the author calls the “collective hysteria of warmists” (*BIZweek*, n.d.), a generalisation sufficiently excessive in tone to cause suspicion amongst readers. To accuse warmists of hysteria, and even a collective attitude judged as largely excessive, is of course an exaggerated way of putting things that is not sustained by any resemblance of proof in the piece concerned.

Other articles are concerned with fact-checking, for instance claims that NASA would have stated climate change is not caused by humans which are revealed to be erroneous and which have finally been dismissed by a NASA statement (*Libération*, October 25th, 2019); or the presentation of controversial opinions. Concerning the latter, one article tries to demonstrate how *climate-negationism* has changed and become more discreet without disappearing altogether, the paper accusing a number of public figures (intellectuals, journalists etcetera) of spreading climate scepticism under cover of the principle of plurality of opinion (*JIEC*, November 28th, 2019). Another article sums up controversial opinions about climate change in France at national and regional level, arguing that there tends to be a fairly broad consensus at national level that climate change is a serious problem and that something needs to be done about it, whereas politicians continue to voice climate sceptic opinions at regional level, especially politicians from the far-right (*Reporterre*, November 28th, 2019). A third example is the article denouncing the attitudes of multinational groups to climate change judged “hypocritical”, accusing and categorising managers of the companies discussed as “climate-frauders” or “climate-hypocrites” (*JIEC*, November 28th, 2019 – our translation). Similarly, another article analyses the seemingly surprising alliance of certain industrial groups and environmental activists to claim stricter environment-protection policies. In his conclusion, the author calls for new environmental policies which would be “realist, efficient, and independent of big corporations and greenish-Bohemian but well-off-mediatised extremism” (*La Revue des deux mondes*, February, 2020 – our translation). In these last two cases, the controversy is not directly related to climate change data but to the attitudes stakeholders have or adapt to react to knowledge produced by scientists. Indeed, strong climate scepticism is no longer shared by many scientists themselves, but continues to be voiced by some powerful stakeholders, unless they hide their point-of-view by striking unexpected alliances as suggested by the last case.

Finally, to counteract misleading interpretations of climate change and its impact, some authors and media adapt the strategy of presenting hard facts and/or having them discussed by scientists. In one case, the article tries to provide five principal elements presented as facts that should convince anyone – economic and financial decision-makers in particular – that it is urgent to act as the title and the enhanced subtitle/caption suggest outright: “Record high temperatures, multiplication of meteorological catastrophes, melting of ice, nature in decline: proof of the devastating impact of human activities on the planet accumulates, witnessing the urgent need to act in particular against climatic disorder.” (*Les Echos*, December 2nd, 2019 – our translation). The most controversial point in this case is not the question of whether one should act but how urgent it is to act. In the case of the Swiss article, the newspaper explains its viewpoint and methodology right from the start: “Climate change is controversial, not from a scientific point-of-view, but among parts of the population. We have collected the most common arguments used by climate sceptics and presented them to two climatologists” (*Neue Zürcher Zeitung*, March 27th, 2019 – our translation). A third choice consists in simply reporting on scientific data. The example chosen here, the article “Antarctique: Un raid scientifique en terre hostile pour lever une grande inconnue du changement climatique” (*20 Minutes*, January 23rd, 2020), may come as a bit of surprise, given the media concerned: the article informs readers about a Franco-Italian expedition to Antarctica in view of solving a major research question that has not been sufficiently addressed so far: How does Antarctica react to global warming? The fact that such an article features in *20 Minutes*, a daily news outlet focusing on rather short and non-committal articles, may come as a surprise to those who accuse the journal of being populist. Alternatively, it could be argued that the paper also tries to draw in an environmentally-concerned or even engaged readership by including such factual reporting, since climate change is a “seller” given the high public interest in the issue.

Depending on the nature of the article, the author’s own position and readiness to engage in multi-perspective discussion of a subject, as well as the line taken by the media concerned, plurality of views is more or less guaranteed. For the reader, multi-perspective evocation of the subject is an essential indicator to avoid being misled by one-sided reporting on the questions at stake, especially in relation to such controversial issues as the scenarios of climate change and its impact in decades to come, as well as the kind and degree of mediation stakeholders and society at large should decide on.

9. Use of evidence-based research/science

The use of scientific evidence varies enormously, spanning from climatologists themselves writing and drawing on their own results or those of colleagues whose work they are perfectly familiar with, to essayists and journalists relying on scientific research, others echoing what they have read elsewhere in the media and those who simply voice opinions without trying to base themselves on any verifiable data. To sum up the use of evidence-based research, one can divide the 30 articles as follows: Two articles were written by a scientist; 17 articles are well-researched, drawing on scientific and other relevant expert views; nine articles make rather loose use of evidence; two articles do not draw at all on such evidence.

In the first case, scientists express themselves as climate change experts, though they do tend to refer to other scientific sources to back up what they are saying. Reports by the IPCC and

other international bodies are generally taken to be an absolutely reliable source unless a polemical author sets out to attack them frontally, not a very convincing strategy at this point in time, though, given the very high reputation of IPCC having produced rigorous results for three decades. One short piece thus refutes the erroneous application of a scientific principle to what NASA allegedly stated (*Libération*, October 25th, 2019), another produces research results announced by recognised scientific experts. However, such reports may be mobilised also to build up an argument, as in the case of Michael Shellenberger referring to the IPCC but attacked by Bueno for having made misleading use of such material. Still, Shellenberger does refer to a number of scientific reports (*International Energy Agency, IPCC via The Atlantic, Nature*) and well-known experts on the subject (*Forbes*, December 4th, 2019). This may not correspond to strict academic methods of referencing but then again, articles published in mainstream media are not expected to proceed this way with as much rigour as academic publications to keep content intelligible to non-initiated readers. In this given example, reference to the IPCC via *The Atlantic* and *Nature* is taken as sufficient proof, *Nature* having of course the reputation of publishing only cutting-edge research of the most ground-breaking kind.

In conclusion, slightly more than half of the articles can be defined as well researched, roughly one third as making fairly vague use of scientific research. Scientists themselves rarely tend to be authors of mainstream media articles but their results and interpretation of material and the situation are quite frequently reflected by articles, that-is-to-say they function as authorities in the context of the article.

10. Use of Links

Most articles provide links – one third both to scientific and journalistic writing. Nine articles provide no links whatsoever though two of these pieces contain excerpts from interviews. The results can be summed up in the following way: seven articles without any links; two without links but interviewees quoted; four provide links to scientific articles; eight to journalistic writing; nine contain links to both scientific and journalistic writing. However, only in a few pieces would it be fair to say that links are systematically provided. Most of the time, links appear as the author sees fit to refer to or sustain a particular point. The international bodies and periodicals that are most frequently referred to are the IPCC and *Nature*. Some media simply refer to other relevant articles published by them.

11. Missing facts

In some cases, misleading treatment of a subject may be denounced by an article, without necessarily stating the case in detail (*Le Point*, December 9th, 2019; *Le Point*, December 12th, 2019), while others are clearly engaged in fact-checking trying to demonstrate where somebody went wrong in their analysis, willingly or not (concerning deliberate misorientation or even apparent “scientific fraud” see Bréon’s critique of François Gervais’ views in the article “Le réchauffement climatique, “un leurre”? L'escroquerie climatosceptique de François Gervais”). Another problem that arises is superficial discussion of scientific results, in one given case, for instance, the figures of CO₂ emissions are depicted as a summary. Similarly, in another piece, a highly-selective approach pretends that a question – whether one has any reason to

be alarmist or not about climate change – can be treated in brief (*Real Clear Markets*, January 16th, 2020). In another case, the article’s conclusion suggests that climate change is galloping but no figures are provided (*Reporterre*, November 28th, 2019). In another, statistics are produced but no indication of the source is included (*Bastamag*, November 28th, 2019), and in yet another certain predictions by scientists are judged to be “apocalyptic” without showing how those experts arrived at such predictions (*Le Point*, December 9th, 2019). In one article, an expert opinion is mobilised to denounce the claims of another scientist, that is climatologist Michael Mann qualifying an article by another scientist as “pseudo-scientific nonsense” though the same article also refers to an Australian expert who suggests that the controversial claims of the scientist may be just ahead of their time (*BBC News*, March 16th, 2020).

Another problem is linked to the question whether one does well or not in leaving out the fallacious arguments of the other, or, to put it in bolder terms, whether the discussion of controversial, let alone “fake” news contributes to their spreading. Hence in one case, the article does not pretend to do anything else than to sum up a scientific report. Thus, it would be hard to reproach the author with leaving out facts, unless one believes that journalists need to systematically list arguments and counterarguments (in this case the rejection of the principle of “tipping moments”). Finally, in one subjective column we note the premise that five “hard” scientific facts are sufficient to make the author’s point about the climate crisis being globally more menacing than the current “corona crisis”.

In conclusion, out of the 30 pieces, 14 to 15 appear problematic in the sense of being clearly “one-sided” or rather insufficient in their treatment of the question, not allowing the reader to be aware of counterarguments. It is to be noted also once again, that some authors (none of the articles studied here though) and media have stated that they do not want to contribute to the spreading of erroneous ideas about climate change by repeating fallacious or fraudulent arguments, be it to denounce them.

12. Conclusion

The first general conclusion consists in observing that the articles published in the mainstream media analysed here can hardly be accused of deliberate, let alone systematic mis- or disinformation, though half of the articles do need to be considered to be problematic in some respects as far as reporting about climate change and climate change scepticism is concerned. The problem is mainly one of rather selective, in some cases even highly-selective approaches to the subject, depending on which opinion one wishes to express and the problem of interpreting the wealth of scientific material and expert opinion that is available.

In some cases, the very format of the article may be considered problematic. A media pretending to provide sufficient information in a few sentences to allow decision-makers to determine which action (or not) they should take may not seem very reputable, at least not from a scientific point-of-view. Over the years, discussions about climate change have led to different labelling: from climate change denial, via climate scepticism and climate realism to climate alarmism and even doomism. This may be helpful to readers who are not very familiar with the topic but labels can, of course, be easily misused or, rather, it is easy to call someone something they are not necessarily, especially when the space available to do so is very limited.

This would then be a case, perhaps, not of mis- or disinformation, but rather a question of misleading the reader – the biggest potential threat we have come across in our analysis.

The other major obstacle to clear treatment of the subject is disingenuity: Facts are simply not mentioned or interpreted in a particular way for the purpose of proofing the argument. Hence, some pieces draw on expert opinion and even visualisation thereof in a way that could be termed “pseudo-scientific” (that-is-to-say the scientific evidence provided only partially illustrates or supports the arguments, evidence contradicting or at least qualifying the positions voiced is not presented). As to so-called “junk science” (that is unproven hypotheses presented as scientific facts), we have not come across such examples in the mainstream media analysed here. This may possibly be explained by the fact that most of them aim at a certain level of accuracy, excluding the publication of ideas which science does not sustain. Once again, the problem is more one of commenting on and interpreting the material available. Media could of course systematically draw on the opinion of established and well-respected climatologists but as we have seen above, this is far from always being the case. Admittedly, some articles make a point of denouncing opinions, oddly termed “arguments” in very serious articles that are unmistakably based on either wrong understandings of scientific facts or the refusal to acknowledge them.

Furthermore, we have seen that many articles draw on scientific knowledge in a direct or indirect way but helping readers to orient themselves by providing links is far from systematic. Interestingly enough, the dividing line is not necessarily to be found between so-called “quality papers” and more popular media, since in one case, an article published by the latter turned out to be well-researched (*20 Minutes*), whereas some well-established journals may at times be tempted to publish articles of opinion that are not necessarily based on sound investigation of a topic (see Shellenberger’s piece and Bueno’s critique thereof (*Le Point*, December 9th, 2019; *Le Point*, December 12th, 2020).

In brief, to get a comprehensive view of the subject and the debates it sparks, readers need to invest considerable time and show some real sense of perseverance, depending also on which media they tend to consult. In some cases, they would certainly have to change habits (for instance those wishing to receive ready and hard facts in brief format) and be prepared to engage over a longer period of time with the subject to get a fuller grasp of what is at stake and opinions thereon.

Learning and teaching strategies

The best starting point to inform oneself about climate change and its impact on human societies are no doubt the reports of the IPCC and other international expert bodies. Admittedly, this sort of reading is not to the liking of everyone or at least not a habit for many readers. The frequency and ways of referring to expert opinion might be a first criterion for readers trying to steer their way across this material, a remark valid for any topic of societal interest. It is also necessary to be aware of strategies of what we can call misorientation: at the most basic level, of course, to realise what sort of opinion one is reading; at a more advanced stage, what the interest – be it political, economic, social, or a mix – behind that opinion might be. To what extent an author referring to a number of scientific sources is likely to be deliberately leaving out others is difficult to determine. It might be lacking expertise after all

that caused the writer not to mention counter examples, though long features in mainstream media would of course be expected to strive for some sort of balance to be convincing.

As to learning and teaching strategies, it would seem advisable to consult both expert opinion on a topic and a variety of media and types of articles: investigative journalism, fact-checking articles, opinion etc. Concerning the latter, it seems imperative to read several opinions from the broad political spectrum to be in a position to identify who interprets the material how and for what purpose. Some books have also been published recently to help readers get an overview of the debates linked to climate change as Dessler's guide for example (Dessler, 2019).

Finally, it is important to note that scientists have launched their own initiatives to communicate accurate knowledge to the general public through their own portals, such as *The Conversation*, for instance, and that science and environment journalists have done the same. In France, one can notably mention JIEC (Investigation journalists about ecology and the climate). A lot of accurate and reliable information is available in the media, but readers may not always know of or even suspect their existence unless they have tried to actively search for them.

References

- AGU. (2019). *Society Must Address the Growing Climate Crisis Now*. https://www.agu.org/-/media/Files/Share-and-Advocate-for-Science/Position-Statements/Society_Must_Address_the_Growing_Climate_Crisis_Now_2019.pdf
- Allègre, C. (2010). *L'Imposture climatique ou la fausse écologie*. Plon.
- Dessler, A. E. (2019). *The Science and Politics of Global Climate Change: A Guide to the Debate*. Cambridge University Press.
- IPCC. (2018). *Global Warming of 1.5°C. Summary for Policy Makers*. <https://www.ipcc.ch/sr15/chapter/spm/>
- Klein, N. (2015). *This Changes Everything: Capitalism vs The Climate*. Penguin.
- Laramée de Tannenberg, V. (2019). *Agir pour le climat: Entre éthique et profit*. Buchet/Chastel.
- Mann, M. E. (2020). *The story about the 'Business as usual' story is misleading*. <https://michaelmann.net/content/story-about-'business-usual'-story-misleading>
- Mann, M. E. & Toles, T. (2016). *The Madhouse Effect: How Climate Change Denial Is Threatening Our Planet, Destroying Our Politics, and Driving Us Crazy*. Columbia University Press.
- Masson-Delmotte, V. (2011). *Climat: le vrai le faux*. Le Pommier.
- Notz, D., et al. (2020). Arctic Sea Ice in CMIP6. *Geophysical Research Letters*, 47(10), e2019GL086749. <https://doi.org/10.1029/2019GL086749>
- Schmidt, G., Wolfe, J., Downie, D.L., & Valicenti, L. (2009). *Climate Change: Picturing the Science*. Norton.
- Shellenberger, M. (2019, November 25). Why Apocalyptic Claims About Climate Change Are Wrong. *Forbes*, <https://www.forbes.com/sites/michaelshellenberger/2019/11/25/why-everything-they-say-about-climate-change-is-wrong/#6eb5da7c12d6>
- WMO. (2018). *The State of the Global Climate in 2018*. <https://wmo.maps.arcgis.com/apps/Cascade/index.html?appid=855267a7dd394825aa8e9025e024f163>

Articles included in the analysis

French articles *(in chronological order)*

- Bréon, F.-M. (2019, January 15). Le réchauffement climatique, "un leurre"? L'escroquerie climatosceptique de François Gervais. France Soir, <http://www.francesoir.fr/societe-science-tech/le-rechauffement-climatique-un-leurre-escroquerie-climatosceptique-de-francois-gervais>
- Seignobosc, S. (2019, May 8). Du réchauffement climatique à la sixième extinction: l'écocide. Médiapart, <https://blogs.mediapart.fr/sarah-seignobosc/blog/020519/du-rechauffement-climatique-la-sixieme-extinction-lecocide>
- Toranian, V. (2019, May 13). Vidéo clash, manip et réchauffement climatique. La Revue des deux mondes, <https://www.revuedesdeuxmondes.fr/video-clash-manip-et-rechauffement-climatique-claire-nouvian-coule-a-pic/>
- Lenoir, J.-P. (2019). Climat politique: Greta Thunberg ou la tyrannie de l'écologie bien-pensante. BIZweek, <http://bizweek.mu/fr/info/climat-politique-greta-thunberg-ou-la-tyrannie-de-lecologie-bien-pensante>
- N.A. (2019, September 19). Bezos promet qu'Amazon aidera à accélérer la lutte contre le changement climatique. Geo, <https://www.geo.fr/environnement/bezos-veut-aider-a-remplir-les-objectifs-de-laccord-de-paris-197616>
- Léna, P. (2019, October 5). Y a-t-il une véritable éducation au climat en France ? Si nos élèves savent que "a Terre se réchauffe", rares sont ceux auxquels ont été expliqués les phénomènes en jeu, les faits et le consensus scientifique. Le Point, https://www.lepoint.fr/environnement/y-a-t-il-une-veritable-education-au-climat-en-france-05-10-2019-2339514_1927.php
- Mouillot, P. (2019, October 25). Des climatosceptiques font-ils partie des experts entendus par le Conseil supérieur des programmes? Libération, https://www.liberation.fr/checknews/2019/10/25/des-climatosceptiques-font-ils-partie-des-experts-entendus-par-le-conseil-superieur-des-programmes_1759063
- Leboucq, F. (2019, October 25). La Nasa a-t-elle dit que le changement climatique n'était pas dû à l'homme? Libération, https://www.liberation.fr/planete/2019/10/25/la-nasa-a-t-elle-dit-que-le-changement-climatique-n-etait-pas-du-a-l-homme_1759815
- Kokabi, A.-R. (2019, November 28). Le climatoscepticisme reste présent dans la classe politique. Reporterre, <https://reporterre.net/Le-climatoscepticisme-reste-present-dans-la-classe-politique>
- Chapelle, S. (2019, November 28). Climato-Faussaire: Réchauffement climatique: ces multinationales, patrons ou agences de com' qui brillent par leur hypocrisie. Bastamag, <https://www.bastamag.net/Giec-climat-climatosceptique-PDG-multinationales-CAC40-greenwashing>
- Gueugneau, C. (2019, November 28). En France, les climatosceptiques bougent encore. JIEC, <http://jiec.fr/?p=775>
- N.A. (2019, November 29). Réchauffement climatique: une personne sur trois doute de la responsabilité de l'homme. L'Express, https://www.lexpress.fr/actualite/societe/environnement/rechauffement-climatique-une-personne-sur-trois-doute-de-la-responsabilite-de-l-homme_2109330.html
- N.A. (2019, December 2). COP 25 : cinq preuves que le dérèglement climatique est déjà là. Les Echos, https://www.lesechos.fr/industrie-services/energie-environnement/cop-25-cinq-preuves-que-le-dereglement-climatique-est-deja-la-1152924#utm_source=newsletter&utm_medium=email&utm_campaign=re_redaction-20191202

- Shellenberger, M. (2019, December 9). Pourquoi les affirmations catastrophistes sur le climat sont fausses. Le Point, https://www.lepoint.fr/postillon/tribune-pourquoi-les-affirmations-catastrophistes-sur-le-climat-sont-fausses-09-12-2019-2352107_3961.php
- Bueno, A. (2019, December 12). Les affirmations catastrophistes sur le climat ne sont pas si fausses. Le Point, https://www.lepoint.fr/postillon/les-affirmations-catastrophistes-sur-le-climat-ne-sont-pas-si-fausses-12-12-2019-2352869_3961.php
- Falque, M. (2020, February). Écolos, grand capital... même combat? La Revue des deux mondes, <https://www.revuedesdeuxmondes.fr/article-revue/ecolos-grand-capital-meme-combat/>
- N.A. (2020, January 16). YouTube oriente ses usagers vers des vidéos niant le changement climatique, accuse une ONG. Geo, <https://www.geo.fr/environnement/youtube-oriente-ses-usagers-vers-des-vidéos-niant-le-changement-climatique-accuse-une-ong-199499>
- Pouliquen, F. (2020, January 23). Antarctique: Un raid scientifique en terre hostile pour lever une grande inconnue du changement climatique. 20 Minutes, <https://www.20minutes.fr/planete/2702039-20200123-antarctique-raid-scientifique-terre-hostile-lever-grande-inconnue-changement-climatique>
- Lewino, F. (2020, March 10). Coronavirus : le réchauffement climatique a-t-il favorisé l'épidémie ? Le Point, https://www.lepoint.fr/sante/coronavirus-le-rechauffement-climatique-a-t-il-favorise-l-epidemie-09-03-2020-2366375_40.php
- D'Allens, G. (2020, March 17). Pour le climat, il y "aura un avant et un après coronavirus". Reporterre, <https://reporterre.net/Pour-le-climat-il-y-aura-un-avant-et-un-apres-coronavirus>

German articles *(in chronological order)*

- Dettwiler, G. (2019, March 27). "Klimahysterie!", "Klimapropaganda!" – was Klimaforscher zu den häufigsten Argumenten von Skeptikern sagen. Neue Zürcher Zeitung, <https://www.nzz.ch/wissenschaft/klimawandel-forscher-antworten-auf-die-argumente-von-skeptikern-ld.1468011>
- N.A. (2019, December 12). Domino-Effekt bereits in Gang gesetzt. Anstieg des Meeresspiegels nicht mehr zu stoppen. Mitteldeutscher Rundfunk, <https://www.mdr.de/wissen/antworten/kippelement-domino-effekt-antarktis-gletscher-klimawandel-meeresspiegel-steigt-100.html>
- Bodewein, L. (2020, February 26). Eine unheilige Allianz. Tagesschau, <https://www.tagesschau.de/ausland/australien-murdoch-klima-101.html>
- Stöcker, C. (2020, March 8). Corona-vs. Klimakrise: Zweierlei Mass. Der Spiegel, <https://www.spiegel.de/wissenschaft/mensch/coronavirus-vs-klimakrise-zweierlei-mass-aber-warum-a-b22c0a9a-5f58-4a9d-894e-7b1fcb34d9cb>
- Kuebler, M. (2020, March 30). Corona-Konjunkturprogramme bieten Chance für Kampf gegen Klimawandel. Deutsche Welle, <https://www.dw.com/de/corona-konjunkturprogramme-bieten-chance-für-kampf-gegen-klimawandel/a-52928071>

International articles [Articles in English] *(in chronological order)*

- Franzen, J. (2019, September 8). What if we stopped pretending. The New Yorker, <https://www.newyorker.com/culture/cultural-comment/what-if-we-stopped-pretending>
- Nafeez, A. (2019, November 22). The Collapse of Civilization May Have Already Begun. Vice, https://www.vice.com/en_us/article/8xwygg/the-collapse-of-civilization-may-have-already-begun

Shellenberger, M. (2019, December 4). Why Climate Alarmism Hurts Us All. Forbes, <https://www.forbes.com/sites/michaelshellenberger/2019/12/04/why-climate-alarmism-hurts-us-all/#3c23331336d8>

Simon, D. (2020, January 16). Paul Krugman Is a Global Warming Alarmist. Don't Be Like Him. Real Clear Markets, https://www.realclearmarkets.com/articles/2020/01/16/paul_krugman_is_a_global_warming_alarmist_dont_be_like_him__104041.html

Hunter, J. (2020, March 16). The 'climate doomers' preparing for society to fall apart. BBC News, https://www.bbc.com/news/stories-51857722?intlink_from_url=https://www.bbc.com/news/topics/cmj34zmwm1zt/climate-change&link_location=live-reporting-story

ANNEX I – List of authors (articles)

- Ahmed, Nafeez: according to his website, Nafeez Mosaddeq Ahmed is an award-winning 20-year investigative journalist and interdisciplinary academic specialising in international security and complex systems theory
- Bodewein, Lena: is a journalist representing the first German television channel ADR in South East Asia, at Singapore
- Bréon, François-Marie: is a climatologist and vice-director of the LSCE research laboratory in France
- Bueno, Antoine: is a writer and author of essays, participating also in programmes on the French radio and TV; the article presents him as the “chargé de mission”, expert for sustainable development at the French Senate
- Chapelle, Sophie: journalist for the news website *Basta !* and the NGO *Observatoire des multinationals*
- d’Allens, Gaspard: worked initially as speech writer for a French minister before he became an environmentally engaged journalist; has been working for *Reporterre* since 2019
- Dettwiler, Gabriela: is a social media journalist for *Neue Zürcher Zeitung*
- Falque, Max: is a graduate of *Sciences Po Paris*; consultant and author of many books on environmental policies
- Franzen, Jonathan: is an internationally acclaimed novelist; contributor to the *New Yorker* since 1994
- Gueugneau, Christophe: is a journalist working for *Médiapart*
- Hunter, Jack: is a journalism trainee at *BBC News*
- Kokabi, Alexandre-Reza: is a journalist working for the online newspaper *Reporterre*, le quotidien de l’écologie (the daily about ecology)
- Kuebler, Martin: is a freelance journalist working for *Deutsche Welle* since 2010
- Leboucq, Fabien: is a journalist working for the newspaper *Libération* specifying on *LinkedIn* that he publishes fact-checking articles for the *Check News* section of *Libération*
- Léna, Pierre: is a distinguished French astrophysicist born in 1937
- Lenoir, Jean Pierre: is a journalist and author based on Mauritius; has contributed several articles of opinion to the Mauritian weekly *BIZweek*
- Lewino, Frédéric: is a journalist and writer; author of feature articles on the environment and science for the magazine
- Moullot, Pauline: is a journalist working for the newspaper *Libération* specifying on *LinkedIn* that her domains are health and well-being as well as general journalism
- Pouliquen, Fabrice: is a journalist working for *20 Minutes* since 2014, in charge of the “environment” and science section since 2017
- Seignobosc, Sarah: is presented on the website of *Médiapart* as an “autrice” (authoress), actress and stage director
- Shellenberger, Michael: is an American author; founder of what the journal calls the think-tank “Environmental Progress”, presented at the end of the article as having been named a “Environment Hero” by *Time magazine* in 2008 and considering himself as a pragmatic ecologist and pro-nuclear
- Simon, David: is a lawyer in Chicago according to *RealClearMarkets*
- Stöcker, Christian: is a journalist writing for *Der Spiegel*, formerly in charge of the journal’s “digital world” section; Professor of Digital Communication at the Hamburg University of Applied Sciences since 2016
- Toranian, Valérie: is a journalist; director of the review since 2014

ANNEX II - Titles of articles and their translation into English where appropriate & remarks about the media they were published by and the genre of the article

Bréon, F.-M. (2019, January 15). Is global warming a 'lure'? François Gervais's climatesceptic fraud ['Le réchauffement climatique, "un leurre"? L'escroquerie climatosceptique de François Gervais']. France Soir, <http://www.francesoir.fr/societe-science-tech/le-rechauffement-climatique-un-leurre-escroquerie-climatosceptique-de-francois-gervais>

France Soir is a well-known popular newspaper founded in 1944, which went online completely in 2014; the article is fact-checking, revealing misinformation in someone else's writings and denouncing its principal affirmations (5p., some ads).

Seignobosc, S. (2019, May 8). From global warming to the sixth extinction: it's an ecocide ['Du réchauffement climatique à la sixième extinction: l'écocide']. Médiapart, <https://blogs.mediapart.fr/sarah-seignobosc/blog/020519/du-rechauffement-climatique-la-sixieme-extinction-lecocide>

Médiapart is one of the principal French online journals; it presents itself as having the ambition to be a journalistic reference based on four keywords: quality, independence, pertinence and to be exclusive + investigation and debates; the blog is very engaged, not to say activist (15p., no illustrations)

Toranian, V. (2019, May 13). Video clash, manipulation and global warming: Claire Nouvian sinking like a stone ['Vidéo clash, manip et réchauffement climatique']. La Revue des deux mondes, <https://www.revuedesdeuxmondes.fr/video-clash-manip-et-rechauffement-climatique-claire-nouvian-coule-a-pic/>

Revue des dDeux mMondes is a monthly intellectual review founded in 1829 and one of the principal for a in France for political, societal and cultural debates (6p., no illustrations)

Lenoir, J.-P. (2019). Climate policy: Greta Thunberg or the tyranny of well-meaning ecology ['Climat politique: Greta Thunberg ou la tyrannie de l'écologie bien-pensante']. BIZweek, <http://bizweek.mu/fr/info/climat-politique-greta-thunberg-ou-la-tyrannie-de-lecologie-bien-pensante>

BIZweek is a Mauritian online weekly; the article voices a personal opinion (half a page in the journal=2p.)

N.A. (2019, September 19). Bezos promises that Amazon will help to fight climate change ['Bezos promet qu'Amazon aidera à accélérer la lutte contre le changement climatique']. Geo, <https://www.geo.fr/environnement/bezos-veut-aider-a-remplir-les-objectifs-de-laccord-de-paris-197616>

Press release by AFP published by Geo.fr; Geo.fr is the French edition of the well-known magazine; AFP is the principal, highly-respected French news agency; the article is informative and presumably reprinted by Geo because the review assumes its readers to be interested in climate change-related topics (8p. including illustrations and ads)

Léna, P. (2019, October 5). Is there real climate education in France? ['Y a-t-il une véritable éducation au climat en France? Si nos élèves savent que "a Terre se réchauffe", rares sont ceux auxquels ont été expliqués les phénomènes en jeu, les faits et le consensus

scientifique’]. Le Point, https://www.lepoint.fr/environnement/y-a-t-il-une-veritable-education-au-climat-en-france-05-10-2019-2339514_1927.php

Le Point is a French weekly magazine founded in 1972 (about 300 000 copies distributed); factual argumentation to support the idea that “climate change” should be taught more systematically to all French pupils (6p. incl. one illustration and one video)

Mouillot, P. (2019, October 25). Are climate-sceptics called in as experts to be audited by the Superior Council of School Programmes? [‘Des climatosceptiques font-ils partie des experts entendus par le Conseil supérieur des programmes?’]. Libération,

https://www.liberation.fr/checknews/2019/10/25/des-climatosceptiques-font-ils-partie-des-experts-entendus-par-le-conseil-superieur-des-programmes_1759063

Libération is a French daily centre-left newspaper, founded in 1973, (distribution over 70 000 copies), the article was published in section entitled “Check News” (4p. incl. one illustration and some ads)

Leboucq, F. (2019, October 25). Did Nasa state that climate change was not caused by humans? [‘La Nasa a-t-elle dit que le changement climatique n’était pas dû à l’homme?’].

Libération, https://www.liberation.fr/planete/2019/10/25/la-nasa-a-t-elle-dit-que-le-changement-climatique-n-etait-pas-du-a-l-homme_1759815

Libération (see comments above, no. 7), short fact-checking piece (1p., no illustration)

Kokabi, A.-R. (2019, November 28). Climatescepticism remains present among politicians [‘Le climatoscepticisme reste présent dans la classe politique’]. Reporterre,

<https://reporterre.net/Le-climatoscepticisme-reste-present-dans-la-classe-politique>

Reporterre is an independent daily online founded in 2007 and principally dedicated to the subject of ecology (the website announced 25 000 daily visits in 2019); the article is one in a series of four on climate-scepticism amongst French politicians; this particular contribution provides an overview, affirming in the end that CO₂ emissions are galloping (6p. incl. one illustration)

Chapelle, S. (2019, November 28). Global warming: those multinational companies, managers and communications agencies which distinguish themselves by their hypocrisy [‘Climato-Faussaire: Réchauffement climatique: ces multinationales, patrons ou agences de com’ qui brillent par leur hypocrisie’]. Bastamag, <https://www.bastamag.net/Giec-climat-climatosceptique-PDG-multinationales-CAC40-greenwashing>

Basta ! is an online news media publishing economic, social and environmental news founded in 2008; piece of investigation journalism (11p. incl. illustrations)

Gueugneau, C. (2019, November 28). In France, climate-sceptics are still active [‘En France, les climatosceptiques bougent encore’]. JIEC, <http://jiec.fr/?p=775>

JIEC is a news website dedicated to investigative journalism on the climate and ecology associating the media Basta !, Médiapart, Politis, Revue Projet and Reporterre; (9p. incl. illustrations)

N.A. (2019, November 29). Global warming: one person in three has doubts about the responsibility of humans [‘Réchauffement climatique: une personne sur trois doute de la responsabilité de l’homme’]. L’Express,

https://www.lexpress.fr/actualite/societe/environnement/rechauffement-climatique-une-personne-sur-trois-doute-de-la-responsabilite-de-l-homme_2109330.html

L’Express is a weekly magazine founded in 1953 (distribution 200 000 copies), originally centre-left but now often wants to be seen as being above partisan opinion; summary of survey results (4p. including captions)

N.A. (2019, December 2). COP 25: five elements which prove that climatic disorder has already occurred [‘COP 25 : cinq preuves que le dérèglement climatique est déjà là’]. Echos, https://www.lesechos.fr/industrie-services/energie-environnement/cop-25-cinq-preuves-que-le-dereglement-climatique-est-deja-la-1152924#utm_source=newsletter&utm_medium=email&utm_campaign=re_redaction-20191202

Les Echos is a daily publishing economic and financial news, founded in 1908 (distribution 132 000 in 2019), of liberal opinion; some facts for economic and financial decision-makers to be aware of the urgent need to act against climate change according to the daily (7p. incl. one illustration)

Shellenberger, M. (2019, December 9). TRIBUNE: The reasons why catastrophist affirmations about the climate are wrong [‘Pourquoi les affirmations catastrophistes sur le climat sont fausses’]. Le Point, https://www.lepoint.fr/postillon/tribune-pourquoi-les-affirmations-catastrophistes-sur-le-climat-sont-fausses-09-12-2019-2352107_3961.php
Le Point (see article no. 6); the article is part of the opinions and comments column; the original English text was published by Forbes (see above), partly as a reaction to an article published in Vice that features in this sub-report as article no. 21 (9p. incl. illustrations)

Bueno, A. (2019, December 12). Catastrophist affirmations about the climate are not altogether wrong [‘Les affirmations catastrophistes sur le climat ne sont pas si fausses’]. Le Point, https://www.lepoint.fr/postillon/les-affirmations-catastrophistes-sur-le-climat-ne-sont-pas-si-fausses-12-12-2019-2352869_3961.php

Le Point (see articles nos. 6 and 15), an article that is part of the opinions and comments column, it was uploaded on the same day as Shellenberger’s piece; a few hours later; (6p. including one illustration)

Falque, M. (2020, February). Ecologists, big capital... same interest? [‘Écolos, grand capital... même combat?’]. La Revue des deux mondes, <https://www.revuedesdeuxmondes.fr/article-revue/ecolos-grand-capital-meme-combat/>

La Revue des deux mondes (see article no. 3); commentary/opinions column article (8p., no illustrations)

N.A. (2020, January 16). YouTube directs users towards videos negating climate change, an NGO claims [‘YouTube oriente ses usagers vers des vidéos niant le changement climatique, accuse une ONG’]. Geo, <https://www.geo.fr/environnement/youtube-oriente-ses-usagers-vers-des-vidéos-niant-le-changement-climatique-accuse-une-ong-199499>

Press release by AFP published by Geo.fr (see article no. 5); the article is informative and presumably reprinted by Geo because the review assumes its readers to be interested in climate change-related topics (5p. incl. illustrations)

Pouliquen, F. (2020, January 23). Antarctica: Scientific exploration in hostile terrain to understand one of the least known aspects about climate change [‘Antarctique: Un raid scientifique en terre hostile pour lever une grande inconnue du changement climatique’]. 20 Minutes, <https://www.20minutes.fr/planete/2702039-20200123-antarctique-raid-scientifique-terre-hostile-lever-grande-inconnue-changement-climatique>

20 Minutes is a daily newspaper distributed for free (close to 900 000 copies per day distributed in 2018) claiming to deliberately not voice any opinion which has been accused by other journals of being populist; the article was published in the journal’s “science” section; factual article referring to some of the best-known experts in the field in France (6p. incl. illustrations)

Lewino, F. (2020, March 10). Coronavirus: has global warming contributed to spreading the epidemic? [**Coronavirus: le réchauffement climatique a-t-il favorisé l'épidémie?**]. Le Point, https://www.lepoint.fr/sante/coronavirus-le-rechauffement-climatique-a-t-il-favorise-l-epidemie-09-03-2020-2366375_40.php

Le Point (see article no. 6); largely speculative piece (3p. incl. illustrations)

D'Allens, G. (2020, March 17). For the climate there will be a 'before and after coronavirus' [**Pour le climat, il y "aura un avant et un après coronavirus"**]. Reporterre, <https://reporterre.net/Pour-le-climat-il-y-aura-un-avant-et-un-apres-coronavirus>

Reporterre (see article no. 9); well-researched article based on solid scientific knowledge (6p. incl. illustrations)

Dettwiler, G. (2019, March 27). Climate hysteria!, 'climate propaganda' – how climatologists react to the most common arguments used by climate sceptics [**"Klimahysterie!", "Klimapropaganda!" – was Klimaforscher zu den häufigsten Argumenten von Skeptikern sagen?**]. Neue Zürcher Zeitung, <https://www.nzz.ch/wissenschaft/klimawandel-forscher-antworten-auf-die-argumente-von-skeptikern-ld.1468011>

Neue Zürcher Zeitung, the oldest Swiss German-language daily newspaper (founded in 1780, distribution over 100 000 including e-pape); the author refuses commentary and just simply puts points used by climate sceptics to the two climatologists for them to comment on; since they both reject all of the points, the result is supposed to be self-evident: the most common "arguments" can all be rejected by robust scientific proof (15p. incl. illustrations)

N.A. (2019, December 12). Rise of sea-levels cannot be prevented anymore [**Domino-Effekt bereits in Gang gesetzt. Anstieg des Meeresspiegels nicht mehr zu stoppen**].

Mitteldeutscher Rundfunk, <https://www.mdr.de/wissen/antworten/kippelement-domino-effekt-antarktis-gletscher-klimawandel-meeresspiegel-steigt-100.html>

Mitteldeutscher Rundfunk, the public broadcasting organisation for the three German Länder Sachsen-Anhalt, Sachsen and Thüringen, based in Leipzig; published in the science section of the website, the purpose is to present important new scientific results by a well-known German Institute (4p. incl. illustrations)

Bodewein, L. (2020, February 26). Feature: Australia's Murdoch media, a non-sacred alliance [**Feature: Australiens Murdoch-Medien. Eine unheilige Allianz**]. Tagesschau, <https://www.tagesschau.de/ausland/australien-murdoch-klima-101.html>

Tagesschau is the oldest German television news service; rather rapid approach of an important scientific and societal subject supposed to be treated in a feature (3p. incl. illustrations)

Stöcker, C. (2020, March 8). Corona crisis vs. climate crisis: two different yardsticks [**Corona-vs. Klimakrise: Zweierlei Mass**]. Der Spiegel, <https://www.spiegel.de/wissenschaft/mensch/coronavirus-vs-klimakrise-zweierlei-mass-aber-warum-a-b22c0a9a-5f58-4a9d-894e-7b1fcb34d9cb>

Der Spiegel, German weekly news magazine founded in 1947 (distribution 840 000); a personal opinion/commentary column by a well-known journalist and psychologist, specialist of digital communication (4p. incl. illustrations)

Kuebler, M. (2020, March 30). Corona Economic aid programmes offer new opportunities for the fight against climate change [**Corona-Konjunkturprogramme bieten Chance für Kampf gegen Klimawandel**]. Deutsche Welle, <https://www.dw.com/de/corona-konjunkturprogramme-bieten-chance-für-kampf-gegen-klimawandel/a-52928071>

Deutsche Welle, German public international broadcasting organisation founded in 1953, offering programmes in 30 languages; informative article based on expert opinion (4p. incl. illustrations)

Franzen, J. (2019, September 8). What if we stopped pretending. The New Yorker, <https://www.newyorker.com/culture/cultural-comment/what-if-we-stopped-pretending>
New Yorker, famous American weekly magazine publishing journalism, essays, literature etc., founded in 1925 (distribution over one million copies); article voicing the opinion of a famous writer (5p. incl. illustrations)

Nafeez, A. (2019, November 22). The Collapse of Civilization May Have Already Begun. Vice, https://www.vice.com/en_us/article/8xwygg/the-collapse-of-civilization-may-have-already-begun

Vice is a Canadian monthly distributed for free, founded in Montreal in 1994 (distribution 96500 copies); well-researched piece clearly expressing a personal point-of-view in conclusion (26p. incl. illustrations)

Shellenberger, M. (2019, December 4). Why Climate Alarmism Hurts Us All. Forbes, <https://www.forbes.com/sites/michaelshellenberger/2019/12/04/why-climate-alarmism-hurts-us-all/#3c23331336d8>

Forbes is an American bi-weekly business magazine founded in 1917 (distribution 930 000 copies); opinion column by a well-known author who tries to denounce the negative impact of alarmism (13p. incl. illustrations)

Simon, D. (2020, January 16). Paul Krugman Is a Global Warming Alarmist. Don't Be Like Him. Real Clear Markets, https://www.realclearmarkets.com/articles/2020/01/16/paul_krugman_is_a_global_warming_alarmist_dont_be_like_him__104041.html

RealClearMarkets is one of the 14 speciality areas coverage of RealClearPolitics, a political news site founded in 2000; RealClearMarkets presents itself as a “one-stop shop for market-related news, analysis and commentary”; very short and arguably superficial approach (2p. incl. illustrations)

Hunter, J. (2020, March 16). The 'climate doomers' preparing for society to fall apart. BBC News, https://www.bbc.com/news/stories-51857722?intlink_from_url=https://www.bbc.com/news/topics/cmj34zmwm1zt/climate-change&link_location=live-reporting-story

BBC News, the world's largest broadcast news organisation (3500 employees, 2000 journalists); reportage about a social phenomenon sparked off by a controversial article written by a scientist (12p. incl. illustrations)

ANNEX III – Summaries of five selected articles in English

Is global warming a 'lure'? François Gervais's climatesceptic fraud
[Le réchauffement climatique, un 'leurre ?' L'escroquerie climatosceptique de François Gervais]

France Soir, <http://www.francesoir.fr/societe-science-tech/le-rechauffement-climatique-un-leurre-escroquerie-climatosceptique-de-francois-gervais>

The article is a fact-checking piece, revealing misinformation in someone else's writings and denouncing the latter's principal affirmations. The author, well-known scientist François-Marie Bréon, considers François Gervais, emeritus professor at Tours University, as the spokesperson of French climate change scepticism. Gervais' latest book, *L'Urgence climatique est un leurre*

(*Urgent climate action is a fraud*) illustrates this ambition according to Bréon who analyses a few passages from the book to show how Gervais gets the facts wrong, possibly deliberately trying to misinform his readers. Bréon also criticizes Gervais' "unhealthy" tendency to mix items from IPCC reports with elements from NGO reports lifted out of their context and misleading the reader into false assumptions. Bréon concludes by stating that it is ridiculous to contest the role of CO₂ emissions in rising temperatures since the 1970s.

What if we stopped pretending

New Yorker, <https://www.newyorker.com/culture/cultural-comment/what-if-we-stopped-pretending>

The article is an opinion piece about climate change and its impact by internationally acclaimed writer Jonathan Franzen, a long-standing contributor to the *New Yorker*. Franzen states that scientific evidence of the impact of human activities on the climate is verging on the irrefutable. He opines that there are two ways to consider the subject: that a catastrophe can be prevented, in which case the world's lack of action is a cause of frustration; or one accepts that disaster will happen, abandoning any feelings of hope. Nonetheless, "expressions of unrealistic hope" continue to be voiced by many, Franzen remarks, although the facts do not bear out such optimism according to him. The author calls for draconian conservation measures, a significant financial effort from governments, but also taxpayers. Franzen doubts humanity's capacity to do so, though responsible use of resources is a challenge it has to face.

Climatescepticism remains present among politicians

[Le climatoscepticisme reste présent dans la classe politique]

Reporterre, <https://reporterre.net/Le-climatoscepticisme-reste-present-dans-la-classe-politique>

The article is one in a series of four on climate scepticism amongst French politicians. Journalist Alexandre-Reza Kokabi provides an overview. The piece is preceded by a satirical drawing showing a man wearing a tie and jacket in three positions as "the climate-sceptic", "the climate-cynic" and "the moron". The author argues that, unlike U.S. politics which appear to be polarized between those who deny climate change and those who don't, in France, climate-sceptic discourses are a rarer public phenomenon, though some continue to voice such views, especially at regional level. Decision-makers are portrayed as calling out for action but doing too little to reverse current trends of global warming. Different labels to characterize attitudes to climate change are used in the article, such as climate scepticism and climate fatalism. The author concludes by affirming that CO₂ emissions are galloping.

Catastrophist affirmations about the climate are not altogether wrong

[Les affirmations catastrophistes sur le climat ne sont pas si fausses]

Le Point, https://www.lepoint.fr/postillon/les-affirmations-catastrophistes-sur-le-climat-ne-sont-pas-si-fausses-12-12-2019-2352869_3961.php

This article written by Antoine Bueno, an expert of sustainability issues at the French Senate, is an opinion piece written in response to an opinion column by American author Michael Shellenberger published by the same magazine. Bueno argues that Shellenberger's intentions to denounce catastrophist views about climate change may have been laudable but that his arguments rely on many counter-truths, some of which are as blatant as those used by so-called "collapsologues". The quest for responsible ecologism requires a more measured approach, Bueno opines. He then discusses a number of claims made by Shellenberger, for

instance, that IPCC never states that climate change menaces civilisation – a correct statement, but Bueno adds that the IPCC's role does not consist in making such remarks. Bueno concludes by stating that responsible ecologism leads to measured catastrophism.

Coronavirus: has global warming contributed to spreading the epidemic?

[Coronavirus: le réchauffement climatique a-t-il favorisé l'épidémie?]

Le Point, https://www.lepoint.fr/sante/coronavirus-le-rechauffement-climatique-a-t-il-favorise-l-epidemie-09-03-2020-2366375_40.php

Written by journalist Frédéric Lewino, this article is a largely speculative piece about the possible impact of global warming on the spreading of Covid-19. The author starts off by affirming that climate change contributes to the propagation of pathogenic agents causing infectious diseases such as Lyme transmitted by insects. Covid-19 is described as resembling the flu which usually appears in winter. Claiming that mean Covid-19 is not favoured by climate change would be wrong, though, even if the impact of the climate on the virus's spreading might be indirect. The impact of the virus on global warming, however, is manifest as the lockdown of large parts of the economy show, leading to distinct reducing of CO2 emissions. Nonetheless, IPCC does not appear to be triumphant, the author concludes, since the economy will probably pick up full speed again once the Covid-19 crisis is over.