A CRITICAL ASSESSMENT OF EXTREME EVENTS TRENDS IN TIMES OF GLOBAL WARMING

Brief history of the troubled life of the article and its retraction

https://link.springer.com/article/10.1140/epjp/s13360-021-02243-9

As authors of the article: *Alimonti G., Mariani L., Prodi F. e Ricci R.A., 2022. A critical assessment of extreme events trends in times of global warming, Eur. Phys. J. Plus, (2022) 137:112, https://doi.org/10.1140/epjp/s13360-021-02243-9* we believe that the description of our experience, which ended with an unjustified retraction of the article itself, could be interesting for the readers. To be as concise as possible, we will develop the history and our ancillary arguments in points.

Chronology

1. **30 Sep. 2022**: approximately nine months after the publication of our article in the international scientific journal EPJ Plus (European Physical Journal - Plus), which took place after having passed a regular peer review process, in September 2022 the article was placed "under dispute" (with a message of caution to readers reported on the EPJ-Plus website), on the base of personal opinions expressed by some scientists to a journalist of The Guardian newspaper - https://www.theguardian.com/environment/2022/sep/22/sky-and-the-australian-find-no-evidence-of-a-climate-emergency-they-werent-looking-hard-enough **(which constitutes a rather anomalous procedure in the scientific field)**

2) **5 Oct. 2022**: it was agreed with the EPJ-P Editor that (a) the original article would not have been sent to new reviewers but (b) a Referenced Scientific Article (RSA) would have been asked to the scientists who criticized our original article and (c) after the peer review of the RSA, we could have answered to objections expressed in it

3) **17 Nov. 2022**: we never received such a RSA (essentially the scientists who criticized our article in the Guardian with abusive tones hid their hand after having thrown the stone) but we have nevertheless been asked to write an Erratum because few statements from our article seemed apparently in disagreement with the most recent IPCC report AR6 **(in our opinion not a completely correct scientific procedure)**

4) **14 Dec. 2022**: in due time we submitted a referenced and detailed Addendum (in our view the Erratum request was unfounded because no error was spotted in our article and because AR6 was not referenceable when our article was submitted) showing our substantial agreement with AR6 (**even if the agreed RSA was never received, we kept a scientific attitude**)

5) **March 2023**: we have received two totally opposite reviewer reports on our Addendum: one suggesting to accept it with minor revisions, the other suggesting not to publish the Addendum on the base of personal and, we believe, scientifically unsupported belief of the reviewer

6) including the original article reviewer, two out of three reviewers (but Prof. Pielke in his reconstruction of the story carried out on the basis of information received from a whistleblower -

see the links at the bottom of this document - speaks of four reviewers out of five...) expressed a positive evaluation. Despite the majority of positive evaluations, an adjudicator has been contacted and with what we believe is a very weak and cherry picked analysis on our original article (**although we had agreed that there would have been no other revisions of the original article)** he/she recommended not to publish the Addendum and to retract our original article.

7) **13 July 2023**: on the base of the evaluation of the adjudicator who, as written in his/her report, "has not been asked to comment on the original paper" ("excusatio non petita, accusatio manifesta" would be natural to say…) the Editor wrote us on July the 13th that, after an in-depth consultation with the Publisher, not only our Addendum would not have been published but also that our original article would have been retracted. **(and here we ask ourselves what qualification the publisher had to enter into this decision-making process)**

8) On **23 August 2023** the following retraction note was published**:** "*The Editors-in-Chief have retracted this article. Concerns were raised regarding the selection of the data, the analysis and the resulting conclusions of the article. The authors were invited to submit an addendum to the article, but post publication review of the concerns with the article and the submitted addendum concluded that the addendum was not suitable for publication and that the conclusions of the article were not supported by available evidence or data provided by the authors. In light of these concerns and based on the outcome of the post publication review, the Editors-in-Chief no longer have confidence in the results and conclusions reported in this article.*

The authors disagree with this retraction.".

(https://link.springer.com/article/10.1140/epjp/s13360-023-04386-3

Comments on the retraction note

With reference to the passage of the retraction note: "*Concerns were raised regarding the selection of the data, the analysis and the resulting conclusions of the article*." Below is the abstract of the original article, inviting readers to read it in full to have a view of the issue as objective as possible:

This article reviews recent bibliography on time series of some extreme weather events and related response indicators in order to understand whether an increase in intensity and/or frequency is detectable. The most robust global changes in climate extremes are found in yearly values of heatwaves (number of days, maximum duration and cumulated heat), while global trends in heatwave intensity are not significant. Daily precipitation intensity and extreme precipitation frequency are stationary in the main part of the weather stations. Trend analysis of the time series of tropical cyclones show a substantial temporal invariance and the same is true for tornadoes in the USA. At the same time, the impact of warming on surface wind speed remains unclear. The analysis is then extended to some global response indicators of extreme meteorological events, namely natural disasters, floods, droughts, ecosystem productivity and yields of the four main crops (maize, rice, soybean and wheat). None of these response indicators show a clear positive trend of extreme events.

Note that our conclusions are in perfect agreement with what emerges from Tab 12.12 of IPCC AR6 (attached) which summarizes the variations in the extreme events already observable today or which, according to IPCC forecasts, will become observable in the near future (between now and 2050 and between 2050 and 2100), obtained using a very drastic scenario, today considered un-realistic (RCP 8.5). In the table, the prevalence of white areas where significant confidence in the direction of change does not exist today and in many cases should not emerge even by 2100, stands out and all the extreme events considered in our article are in agreement with this IPCC table.
Please note that also the selection of the data and the analysis contained in our article are in full agreement with those of IPCC. Our article may perhaps be criticized because nothing new was said with respect to the IPCC report (which, however, came out later) but it should never, ever have been withdrawn based on concerns regarding the selection of data and the analysis, otherwise the IPCC AR6 report itself would be worthy of withdrawal!

The issue of climate crisis

A more reasonable criticism could be done about the final part of the abstract were it is stated: *"In conclusion on the basis of observational data, the climate crisis that, according to many sources, we are experiencing today, is not evident yet. It would be nevertheless extremely important to define mitigation and adaptation strategies that take into account current trends.".* Even if supported by all the observations reported in the original article (not only on extreme events, but also on natural disasters and normalized economic damage not increasing, food production constantly growing and climate related deaths strongly decreasing), this conclusion was presented as a personal opinion, as further clarified in the Addendum, and it should be commented as such.

In any case, in our opinion, an argument of this type cannot be a reason for retraction of a scientific article already published. If it is indeed true that we have not built a scientific metric to demonstrate that the climate crisis is not evident yet, in the same way to date there is no metric capable of confirming that the crisis is underway, except on a sociological level (climate crisis as an expression of one of the many myths with a millennial background that is dotted throughout human history), media or political and it is this meaning that is referred to in the article. Also consider that the IPCC in AR6 speaks of "climate crisis" only once, defining it as a journalistic term [1].

Additional considerations

- EPJ-Plus magazine (Renato Angelo Ricci, co-author of the article in question, was co-founder of the EPJ magazines and Editor in Chief of EPJ-A) has always published articles related to the climate as a physical system, to the point that Franco Prodi, another co-author of the article in question, was Editor of the magazine in the past and in such position he edited an entire issue of the magazine dedicated to climate studies. Therefore the argument used by scientists interviewed by the

[1] This is what IPCC AR6 says on the climate crisis:" Also, some media outlets have recently adopted and promoted terms and phrases stronger than the more neutral 'climate change' and 'global warming', including 'climate crisis', 'global heating', and 'climate emergency'. Google searches on those terms, and on 'climate action', increased 20-fold in 2019, when large social movements such as School Strikes for Climate gained worldwide attention" [p. 173]."

Guardian that we published in a non-climatological journal to escape serious peer review has no basis.

- EPJ-Plus current Editors have never accused us of defrauding, plagiarizing other authors work or inventing/manipulating data or images, which is usually the basis of retraction cases. Our personal interpretation is then that the Pandora's box of an "inconvenient reality" has been unfortunately opened, starting from observational data and databases (FAO, CRED) and from a bibliography that is anything but heretical (it is the same one that IPCC uses). Based on this analysis we have also come to express an opinion (that the climate crisis is not evident today), which like any opinion is obviously questionable

- we believe that we have been essentially "hanged" to our opinion on the lack of evidence of the climate crisis, in the sense that we were first asked for an Addendum (initially we were asked for an Erratum) where we confirmed our orthodoxy with respect to the IPCC theses in terms of extreme events, which we regularly produced, and then telling us that the Addendum we drafted was not sufficient, which also justified the retraction of the original article (in other words they killed "two birds with one stone")

- regarding the frequency of natural disasters and the mortality linked to them, we highlight the very recent article Alimonti and Mariani, 2023. “Is the number of global natural disasters increasing?” https://www.tandfonline.com/doi/full/10.1080/17477891.2023.2239807

G.Alimonti, L.Mariani, F.Prodi, R.A.Ricci

Conclusions

In conclusion, we observe that the moral of the story is found in the ending of "The Wolf and the Lamb", the famous fairy tale by Phaedrus: "*Lupus et agnus ad eundem rivum venerant... superior stabat lupus, longeque inferior agnus.*... ***Atque ita correptum lacerat iniusta nece. Haec propter illos scripta est homines fabula qui fictis causis innocentes opprimunt***."

More information, the unpublished Addendum and the reviewers reports can be found here:

https://rogerpielkejr.substack.com/p/think-of-the-implications-of-publishing

https://rogerpielkejr.substack.com/p/the-alimonti-addendum

Table 12.12 | Emergence of CIDs in different time periods, as assessed in this section. The colour corresponds to the confidence of the region with the highest confidence: white cells indicate where evidence is lacking or the signal is not present, leading to overall *low confidence* of an emerging signal.

Climatic Impact-driver Type	Climatic Impact-driver Category	Already Emerged in Historical Period	Emerging by 2050 at Least for RCP8.5/SSP5-8.5	Emerging Between 2050 and 2100 for at Least RC8.5/SSP5-8.5
Heat and Cold	Mean air temperature	1		
	Extreme heat	2	3	
	Cold spell	4	5	
	Frost			
Wet and Dry	Mean precipitation		6 / 7	
	River flood			
	Heavy precipitation and pluvial flood			8
	Landslide			
	Aridity			
	Hydrological drought			
	Agricultural and ecological drought			
	Fire weather			
Wind	Mean wind speed			
	Severe wind storm			
	Tropical cyclone			
	Sand and dust storm			
Snow and Ice	Snow, glacier and ice sheet		9	10
	Permafrost			
	Lake, river and sea ice	11		
	Heavy snowfall and ice storm			
	Hail			
	Snow avalanche			
Coastal	Relative sea level		12	
	Coastal flood			
	Coastal erosion			
Open Ocean	Mean ocean temperature			
	Marine heatwave			
	Ocean acidity			
	Ocean salinity	13		
	Dissolved oxygen	14		
Other	Air pollution weather			
	Atmospheric CO_2 at surface			
	Radiation at surface			

1. *High confidence* except over a few regions (CNA and NWS) where there is *low agreement* across observation datasets.
2. *High confidence* in tropical regions where observations allow trend estimation and in most regions in the mid-latitudes, *medium confidence* elsewhere.
3. *High confidence* in all land regions.
4. Emergence in Australia, Africa and most of Northern South America where observations allow trend estimation.
5. Emergence in other regions.
6. Increase in most northern mid-latitudes, Siberia, Arctic regions by mid-century, others later in the century.
7. Decrease in the Mediterranean area, Southern Africa, South-west Australia.
8. Northern Europe, Northern Asia and East Asia under RCP8.5 and not in low-end scenarios.
9. Europe, Eastern and Western North America (snow).
10. Arctic (snow).
11. Arctic sea ice only.
12. Everywhere except WAN under RCP8.5.
13. With varying area fraction depending on basin.
14. Pacific and Southern oceans then many other regions by 2050.

High confidence of decrease | Medium confidence of decrease | Low confidence in direction of change | Medium confidence of increase | High confidence of increase