Response to Reviewer #1
French Attitudes on Climate Change, Carbon Taxation and other Climate Policies

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Dear Reviewer,

We are grateful for the time you spent reviewing our work and for your very relevant comments, which helped us improve the paper. We have taken into consideration each of them. Please find below the answers to these comments.

Kind regards,

Thomas Douenne & Adrien Fabre

Summary
This paper examines perceptions and attitudes related to climate change and climate policy in France. It draws on a large representative survey and analyzes a wide range of survey questions.

General comments
This is (probably) the first academic opinion paper investigating French attitudes to climate policy after the Yellow Vest protests. Thus, it is a timely contribution and I believe it will be of interest to many readers. The survey sample is large, which gives confidence that sampling error is minimal. I also assume here that the statistical analysis is well conducted (except for one issue, see below). The

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insights, in particular regarding the dimensions of climate policy, are a useful contribution to the literature. In my view, the major shortcoming of the paper is that it lacks focus. 24 figures and 12 tables (counting also the Appendix) is a lot to digest for the reader in a single paper. As follows, I will give some suggestions to achieve more focus, as well as comment on some other issues.

My main suggestion is to shorten section 3 about climate change attitudes. Here you present many results about various perceptions and attitudes, without motivating why you do so. For example, in Figure 6 you present results regarding "Perceived date of birth of first generation severely affected by CC". Although you mention the result also in one line in the text, you do not further discuss it or use it in the subsequent analysis, e.g. as a predictor of climate policy attitudes. Nor did you provide a (theoretical or other) motivation why we should care about this construct. I could mention other examples here.

More generally, I believe that climate change perceptions have been analyzed much more than perceptions and attitudes related to climate policy. I believe your main novelty lies in the analysis of attitudes to carbon taxes and other climate policies. By shortening (or even deleting) section 3, you could devote more attention to the discussion of the results related to climate policy. Now you do this rather briefly in section 4-6.

We are grateful that you point out this lack of focus. In order to focus on the main contributions of the paper, we followed your first advice and shortened section 3. We removed three figures (including the one you mentioned), some paraphrasing as well as a few references to the literature. We shifted part of this material to our online Appendix, as we think it could potentially be useful for some readers. Most importantly, we reworked the narrative of the paper so as to highlight the causal order of the presentation, and to emphasize that our goal is to present attitudes on climate policies (see for example the introduction to section 3). This way, section 3 now appears as an introductory section that explains the root motivations of French people.

We hesitated to remove section 3 altogether from the main text, and to put it to an online Appendix. Finally, we decided not to do so, for three reasons: 1. we think that our figures are significant contributions of the paper; 2. our paper is constructed in a causal order where presenting attitudes over CC seems necessary to understand the motivations for accepting or rejecting climate policies; 3. we use some questions presented in section 3 in section 6. That being said, we are still open to relegate section 3 to an online Appendix and put the parts of section 3 necessary to section 6 at the beginning of the latter.

Moreover, with so many results, I would also expect a conclusion section that summarizes a bit more and answers the "So what does it all mean" question. A last comment about the conclusion is that I found it a bit odd to finish the paper

with a "takeway" from the carbon tax in Sweden, after you dedicated the entire paper to the French case. I'm not recommending against drawing comparisons, but perhaps not in the final sentence.

You are right to point out that our conclusion stated too briefly the paper's findings. We now provide a more developed summary of the main results. We also link these results to the paradox we started with in introduction, and show how they enable to understand both the opposition towards the carbon tax, and people's willingness to tackle climate change. Doing so, the paper explicitly answers the question it initially asks.

Furthermore, it was indeed unfortunate that our last sentence was about Sweden. We followed your advice, and now we conclude with a specific analysis of the French context, including some thoughts from economic analysis.

Apart from focus, I have one methodological concern with respect to the construction of the knowledge score in section 6.1. I believe it is common to test the reliability of such indexes / scores, for example by estimating the Cronbach alpha of the included items. I would recommend to consult a recent paper by Hoppe et al. (2018) which discusses different ways of measuring people's knowledge about climate change. Perhaps there are alternative ways of constructing this index, which may influence your subsequent regression results.
Moreover, I have some doubts about some items used for the knowledge score. Can we really count the view of India being more affected by climate change than the EU as "knowledge" but not as "perception"? Does it not depend on what one thinks of as "impacts"? Are responses to such a question not driven rather by what some researchers call "psychological distance" of climate change?

Admittedly, the construction of our knowledge index was not properly justified, and we are glad that you point out this issue as it allows us to improve the rigor and quality of our work. To define our index on a sound basis, we conducted an exploratory factor analysis (with one factor), and used the factor loadings to define the relative weights of the components of our index. As it turns out, the *region most affected* does not enter the factor that explains the higher share of common variance, consistently with your intuition. Furthermore, the weights appear very close to those of our previous index, as the correlation between the old and the new index is 0.98. You can now find more details on our methodology in section 4 of our online Appendix.

On another note, we are grateful that you gave us the reference of Hoppe et al. (2018) because this paper provides an excellent overview of the issues around indexes of knowledge about CC. Notably, they explain that knowledge about CC is multidimensional, and refer to Kiel & Rost (2002) to detail the different aspects of knowledge about CC. As we now explain at the beginning of section 6.1, the different questions we aggregate reflect the different types of knowledge of CC they identify. While the Cronbach's α would be meaningful to assess

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the reliability of an index measuring each of these dimensions individually, this statistic is not meant to assess an index multidimensional by nature. Thus, Tobler, Visschers & Siegrist (JEP, 2012) reach high reliability for their scales that measure each dimension of perceptions of CC individually, but they do not measure the Cronbach's α of their aggregation. Indeed, when we do so, we find a Cronbach's α as low as 0.25, precisely because we capture different aspects of knowledge in our index. This confirms that knowledge of CC is multidimensional.

Instead of aggregating the different dimensions of knowledge, one could include the different components of our index in the regressions. Yet, the robustness check we added in online Appendix (section 4) indicates that replacing our index by any of its component has virtually no effect on the other determinants of the support for climate policies. We therefore think it is better to keep the more synthetic index in the main text. Meanwhile, this analysis taught us that the driver of the knowledge as a determinant is the question on the existence and anthropogenic nature of CC.

Minor comments

Before explaining in details how we took into accounts these "minor comments", we would like to thank you for the time you took to point them out.

· *Style: better avoid "to do so" 2x in one paragraph of the introduction*

We replaced the two occurrences, as none was necessary. More precisely, we replaced *To do so, we conducted a new survey on a sample of 3,002 respondents representative of the French population* by *It builds on a new survey conducted on a sample of 3,002 respondents representative of the French population*, and we simplified *To do so, we propose* in *We propose*.

· *Line 56: You write that France "recently experienced a carbon tax increase", although before you said it was planned but canceled. Is this contradictory?*

You are right to remark that our treatment of the history of the carbon tax was insufficient to grasp the French political situation. In the very first paragraph (second sentence), we thus added the precision that the tax had an increasing trajectory *that started at 7€/tCO$_2$ in 2014*. We hope this short mention will suffice to understand why, at the end of the introduction, we say that France "recently experienced a carbon tax increase" (it grew from 30.5 to 44.6€/tCO$_2$ on 2018, January 1st. for example). However, if the text remains

unclear despite our addition, we are ready to replace *recently experienced a carbon tax increase and a large debate ensuing.* by *recently experienced a large debate on carbon taxation.*

· *The term "primings" in Figure 1 is unclear.*

It is true that we sometimes employed lingo that many readers would not know. Herewith "priming", which designates a particular information that is randomly displayed to the respondents to induce them to answer in a certain way, and hence measure their reaction to this information or use it for causal inference. We removed this term from Figure 1. Indeed, doing otherwise would presumably require to detail what the primings were, and what effects we found, an analysis that we conduct in our companion paper ("Disentangling Beliefs from Preferences over the French Carbon Tax"). As the primings had negligible effects on all the attitudes dealt with in the present paper, it would presumably be an unnecessary complication to introduce them to the reader.

· *In Figure 3 and in the text you use the term "anthropic". I would say the term "anthropogenic" is more common.*

Indeed. We corrected this Gallicism accordingly.

· *Figure 8: "perceived responsible" sounds a bit odd. Perhaps better "responsibility".*

Indeed. We replaced the legend by *Entities perceived responsible* rather than using *responsible* as a substantive. We would be please to modify again the formulation if it is not idiomatic yet.

· *Figure 19: did nobody reply "insufficient"? Because I see no red bar.*

We thank you for notifying this issue: the color of the legend did not match the color of the Figure. This is now corrected.

· *Figure 24: What does "number of policies" mean here?*

Truly, this label could not be understood without the main text. In order to make our Figure self-contained, we replaced *Number of policies* by *# of policies supported*, hoping that the notation "#" is common enough that the reader will understand it without further explanation.

· Table 2: I kind of expected that you would also examine the determinants of the approval of carbon taxes with different revenue uses, probably in a separate table. But perhaps you have a reason why you did not do this.

As it would take significant space (typically a one page table), we originally decided to present these results in a synthetic way with our dependent variable "earmarking vs transfer". However, we understand that some readers are interested in these results, and we now provide them in the online Appendix (section 3).

· Final suggestion: Perhaps mention "carbon tax" somehow in the title.

We followed your suggestion and have changed the title to *French Attitudes on Climate Change, Carbon Taxation and other Climate Policies*. We agree that this should better signal the contribution of the paper. If you find this new title too long we could go back to the previous one. Indeed, we would like to keep *climate change* in the title as this is one of the contributions of the paper. In particular, we believe that the simultaneous analysis of attitudes towards climate change and climate policies matters, and can be of interest for the readers of this journal.

Literature Hoppe, I., Taddicken, M., & Reif, A. (2018). What do people know about climate change — and how confident are they? On measurements and analyses of science related knowledge. Journal of Science Communication (Jcom), 17(3): A01, pp. 1-26. doi:10.22323/2.17030201.

Again, we thank you for this reference that we added to bring support to the construction of our "knowledge of CC" index (cf. supra, our response to your last "general" comment).