Reviewer #1

In this study the authors have investigated how the role of the scientist (arbiter versus advocate) as well as illustration (photo versus bar chart) used influences the perception of the reader. I find this study to be interesting and well-presented.

We thank the reviewer for these very encouraging and warm comments; we appreciate their support for our study.

Apart from one potential typological error (is the sentence on lines 254-255 cut short?), I found the study to be carefully prepared and clear. However, I do have some critical comments.

Indeed, there was a formatting issue just above Figure 3, which meant the last words of that sentence ended on the top of page 10 of the original pdf. That has now been fixed.

The type of the text used in the study plays a critical role. Here, the focus is mainly on asking individuals to manage their gardens differently, hence focusing on the responsibility of the individual. Would the reception of the respondents have been different if the text would have not been mainly focused on action that takes place on their yards, but calling for e.g. parking lots to be partially greened or city planning to include more green space when building new housing? Also, the last sentence of the arbiter text can be questioned, if it was a good choice. The (imaginary) professor is offering a recommendation (although a very light one) beyond their field, which might reduce credibility. For sure this does not discredit the whole study, but I do find that the comparison would have been better without the last sentence, in order to answer the research question posed here.

The reviewer has a good point here. Unfortunately, we can't redo the entire experiment. We have now added a paragraph about the advocacy beyond the scientist's expertise in the potential limitations to the discussion section (lines 421-423 of the track-changed pdf):

> *"On the other hand, the authoring scientist offers a recommendation in the Issue Advocate text outside their immediate field of expertise ("I think that financial aid, for example, can persuade people who want to green their gardens but have not yet done so"), which in hindsight might reduce the credibility of the author."*

Unless I misunderstand the analysis, I think the point about polarisation (line 345) requires some more nuance in the discussion. There are many reasons why people who are not concerned about climate issues might feel the need or desire to discredit a scientist who more actively promotes action. Unless I am misinterpreting, the authors suggest causality,

and I do not think this is necessarily the case. Rather, the response is or at least can be fully reactionary to the theme.

This is a good point by the reviewer. We have now added that note to the revised manuscript (lines 378-380 of the track-changed pdf):

> *"Note that this small effect does not necessarily imply a causal relation between level of activism and polarisation; it could for example also be that the response is reactionary to the theme."*

Furthermore, and this applies to all of the results, I would recommend also some discussions on the longer-term effects. After the immediate — potentially emotional — reaction to the different texts, their impacts may be different long-term, through e.g. sensitisation to similar points made in later-encountered texts.

The reviewer is right that we could have more extensively discussed that we don't have information about the longer-term effects of our experiment. We now added a paragraph on this limitation to the revised manuscript (lines 427-434 of the track-changed text):

> *"Since we didn't track the respondents over longer times, we do not know what the longer-term effects of our text has been. Given that the immediate effect of our intervention was already relatively small, we can imagine that the long-term effects (weeks to years) of one such intervention would be very small. On the other hand, many in the public are repeatedly exposed to climate scientist's advice or insight on society, so it could be that a continuously increased level of activism by all climate scientists would increase the perceived credibility of climate change on the long term; something to be further explored in follow-up studies."*

Related to the above point about long-term effects, I would also welcome some discussion on complementarity of the different approaches to science communication. For instance, what would happen if a very profound and (seemingly) neutral text, with some infographics on facts (arbiter) would be provided first, followed by the more personal call to action? How would this influence the perception of the public? The value of different approaches is also recognised in Pielke's book on the honest broker (p. 7). I think this point of view would enrich the discussion.

This is a very good suggestion by the reviewer. We added a section in the future research section to highlight this idea (lines 449-451 of the track-changed pdf):

> *"In particular, one could extend our experiment by exposing participants first to a Science Arbiter-style text, followed by an Issue Advocate-style text, to explore the complementarity of the different approaches to science communication (Pielke Jr, 2007, p7)."*