

## Hope as an enabler of climate change adaptation

Corresponding Author: Dr Colette Mortreux

**This file contains all editorial decision letters in order by version, followed by all author rebuttals in order by version.**

Version 0:

Decision Letter:

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Dear Dr Mortreux,

Thank you for your patience during the peer-review process. Your manuscript titled "Hope as an enabler of climate change adaptation" has now been seen by 3 reviewers, and I include their comments at the end of this message.

The reviewers are in principle enthusiastic about your work. However, they also mention a number of concerns. We are very interested in the possibility of publishing your manuscript in *Communications Psychology*, but would like to consider your response to these concerns in the form of a revised manuscript before we make a decision on publication.

In detail, we ask you to provide greater clarification of the key concepts (e.g., hope, adaptation) and their level of analysis (i.e., individual vs social/community) as they pertain to the model and argumentation of the manuscript. Where the full degree of conceptual complexity goes beyond the scope of the manuscript this should be mentioned as a caveat. Please provide better integration with existing conceptual models (e.g., SCT, TPB, etc.) and empirical research (e.g., relationship between climate anxiety and climate action).

In sum, we invite you to revise your manuscript taking into account all reviewer and editor comments.

### EDITORIAL POLICIES AND FORMATTING

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We hope to receive your revised paper within 12 weeks; please let us know if you aren't able to submit it within this time so that we can discuss how best to proceed. If we don't hear from you, and the revision process takes significantly longer, we may close your file.

We understand that due to the current global situation, the time required for revision may be longer than usual. We would appreciate it if you could keep us informed about an estimated timescale for resubmission, to facilitate our planning. Of course, if you are unable to estimate, we are happy to accommodate necessary extensions nevertheless.

Please do not hesitate to contact me if you have any questions or would like to discuss these revisions further. We look forward to seeing the revised manuscript and thank you for the opportunity to review your work.

Best regards,

Jennifer Bellintier, PhD  
Senior Editor  
Communications Psychology

#### REVIEWERS' EXPERTISE:

Reviewer #1 Climate Change, Communication  
Reviewer #2 Climate Change, Collective Action  
Reviewer #3 Climate Change, Mental Health

#### REVIEWERS' COMMENTS:

Reviewer #1 (Remarks to the Author):

This manuscript, *Hope as an Enabler of Climate Change Adaptation*, posits a conceptual model whereby hope (about the potential for a community to adapt to climate change) and action (productive community responses) are positively related and reciprocal. The manuscript is well-written, deals with a vitally important issue, and advances essential ideas.

In my assessment, the proposed model is promising although not yet ready for prime time, primarily for one reason: The model seeks to explain the relationship between hope and action at the community level of analysis—which is a worthy aim—but the model itself appears to be built on a mix of concepts at both the community level of analysis (e.g., the “hope in adaptation” constructs of shared values, shared goals, and shared understanding of pathways) and the individual level of analysis (e.g., the “climate risk appraisal” constructs; some of the “adaptation appraisal” constructs; and some of the “well-being” constructs). In other words, as I read it, the model currently fails to distinguish between individual- and community-level processes. My recommendation is to start by positing the hope—action relationship at the individual level of analysis, and then use that as the springboard to posit the hope—action relationship at the community level.

My second—although lesser—major concern pertains to the lack of a clear conceptual definition of hope, the central construct in the proposed model. I recognize that hope is an elusive construct, treated in various ways by various authors. However, the value of the proposed model will be inherently tied to the clarity of the conceptual definition advanced by the authors.

I urge the authors to consider Steve Chaffee's (1991) primer titled *Explication* for guidance on how to strengthen their conceptual definition.

On a related note, the authors would be doing a service if they also provide operational guidance on how to measure hope—ideally at the individual and the community levels—so that investigators who find the proposed model useful can explore it using the same measures of hope.

Another related note: The factors that give rise to hope that are mentioned in the text of the manuscript (e.g., will and ways) are not the same as the factors shown in Figure 1—which is confusing.

Minor points:

Line 169 states that the hope—action relationship is “mediated” by structural factors. I believe the correct term is “moderated.”

The authors note the importance of “social identity” in the text, but it does not appear in Figure 1. That strikes me as an oversight.

Final thoughts:

The authors (wisely, in my opinion) draw from Bandura's Social Cognitive Theory, which posits “triadic reciprocal determinism” between internal personal factors (including, potentially, hope), behavior, and social and structural environmental factors. More fully embracing SCT as a more general model may help the authors clarify their more specific model. Indeed, many of the elements represented in Figure 1 can be reconfigured to be consistent with SCT.

With these comments, I attempted to be constructively critical, and hope I succeed (in being constructive). I greatly appreciate the author's work and hope to see it published soon.

#### Reviewer #2 (Remarks to the Author):

The manuscript presents a theoretical model considering whether and how hope could promote adaptation action on climate change. The model suggests bidirectional relationships between a) climate appraisal and adaptation appraisal, b) adaptation appraisal and hope, and c) hope and adaptation action. They then propose that all are influenced by structural factors and have bidirectional relationships with well-being.

I found merit in the general idea of the manuscript. I think this is an important topic and the authors had some interesting ideas. However, I found a number of ambiguities and inconsistencies throughout.

It would be helpful to include more information up-front about what "adaptation" means and what some examples of key adaptation steps look like. The term climate adaptation has a specific meaning, but at times the authors use it vaguely, and in some cases seem to use it as synonymous with "climate action". I am assuming that when the authors refer to climate adaptation, they intend this term to be in contrast with climate mitigation, but it would be helpful to make this explicit and explain what this means.

And relatedly, the bulk of the evidence suggests that climate anxiety is positively associated with pro-environmental behavior and activism (see Ogunbode et al for a meta-analysis). So, if the authors want to claim that anxiety is detrimental to "adaptation", I think they should present a much more nuanced view that makes a case for their argument given that it runs counter to (at least this) meta-analytic evidence that summarizes across the literature.

Ogunbode, C. A., Doran, R., Hanss, D., Ojala, M., Salmela-Aro, K., van den Broek, K. L., Bhullar, N., Aquino, S. D., Marot, T., Schermer, J. A., Wlodarczyk, A., Lu, S., Jiang, F., Maran, D. A., Yadav, R., Ardi, R., Chegeni, R., Ghanbarian, E., Zand, S., ... Karasu, M. (2022). Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries. *Journal of Environmental Psychology*, 84, 101887. <https://doi.org/10.1016/j.jenvp.2022.101887>

Similarly, though I think the authors are correct that hope is not as well studied as some other emotional experiences, there is a fairly large and growing body of work exploring the links between hope and climate action. The authors do engage with several of these studies, but these connections could be further expanded. I suggest starting with the recent meta-analysis by Geiger and colleagues, which provides a framework relevant to some of the authors' assertions and I believe also includes several studies looking at hope and climate adaptation in the Global South. Additionally, Maria Ojala's condensed review is another useful reference.

Geiger, N., Dwyer, T., & Swim, J. K. (2023). Hopium or empowering hope? A meta-analysis of hope and climate engagement. *Frontiers in Psychology*, 14, 1139427.

Ojala, M. (2023). Hope and climate-change engagement from a psychological perspective. *Current Opinion in Psychology*, 49, 101514.

I find myself confused by the "hope" section of Figure 1. Up until I read this section, I had learned that the manuscript defined hope as an emotion that also had cognitive aspects (the will and the ways). Then, Figure 1 introduces key concepts of hope as being "shared values", "shared goal", and "shared understanding". This feels like a highly social definition of hope that was at all what I was expecting based on how the authors define hope previously and the body of literature they draw from when discussing hope.

Aside from this, I think the authors could also do more to contextualize their model and relate it to other existing models. For example, it would be helpful to unpack how this relates to TPB, PMT, MPACC, etc. Further, Hornsey and Fielding's (2016; already cited by the authors) model suggests that efficacy mediates the relationship between hope and action, while the model here suggests that hope mediates the relationship between efficacy and action. This feels like an assumption that should be made explicit and justified.

#### Other comments

P4 Again, there is now a large body of work examining anxiety and fear around climate change and its relationship with action. Rather than citing a single study from 2002 (or even cherry-picking a few studies) to make an overly broad point that "fear is bad", I encourage the authors to engage with this literature more holistically and open-mindedly.

P13 This feels a little bit like sleight-of-hand, as the manuscript and section is centrally around hope, but these studies seem to refer to efficacy and not make the connection back to hope.

P14 Although I agree with the authors' notion that adaptation is something that should most effectively be performed at the societal level, it seems like adaptation, relative to mitigation, is relatively easier to undertake at the individual level (at least

for people with financial means). If I have the money to do so, I cannot make a sizeable dent on mitigating climate change alone, but I can personally invest in adaptations in ways that directly improve my personal resilience (albeit with some obvious limitations in how much I can do so). More broadly, this paragraph is vague, and it seems like the only take-away message that I got is “previous research conducted in the global North may not translate to other settings.” How so? More specific propositions, even if speculative, would be helpful.

P14-15 It seems like “false hope” is a broad concept that can manifest in at least two very different types of outcomes: 1) individuals engage in difficult action and hard work but toward a “false solution”, and 2) individuals learn about a “false solution” that does not involve hard work on their part, motivating them not to take difficult actions. In the context of climate change, the latter, but not the former, could be thought of as a form of denial (and thus seems to relate to the “denial hope” that Geiger and Ojala both discuss). Similarly, I see possible connections related to concepts of faith the authors discuss on p16.

Reviewer #3 (Remarks to the Author):

Major claim of the paper: Hope is an important construct for Global South communities engaging in climate change adaptation.

The focus of the manuscript is intriguing because it encompasses Global South experience and focuses on community-level adaptation (rather than individual action, and rather than mitigation). Unfortunately, none of these dimensions are developed fully in the manuscript. The authors offer several great case studies/anecdotes from Global South communities, but these are interjected into the manuscript rather than forming the context from which the main claims are derived.

When it comes to the focus on adaptation, the authors do not offer much rationale. It's unclear whether they believe that the model is only useful for mitigation, or if there is some other reason for including only adaptation.

Community-level action also needs a much deeper exploration. There is a rich and expanding body of research on psychological factors that support an individual's participation in community-level action. The authors do not delve into this complexity. Factors such as social identity, community norms play an important role and are not considered in the model. Researchers that the authors can read for these concepts include Sebastian Bamberg (the SIMPEA model) and Masson & Fritzsche.

The ideas in this manuscript require deeper thinking. It is a sensible model, but does not incorporate the full complexity of hope (or other concepts, such as the factors that motivate an individual to engage in community-level action).

other issues/questions:

The authors claim early in the paper that climate anxiety is a barrier to action, however, the research literature more often names climate anxiety as a source of motivation for action rather than a barrier.

Climate anxiety is linked to pro-environmental action:

Ogunbode, C. A., Doran, R., Hanss, D., Ojala, M., Salmela-Aro, K., van den Broek, K. L., ... & Karasu, M. (2022). Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries. *Journal of Environmental Psychology*, 84, 101887.

Whitmarsh, L., Player, L., Jiongco, A., James, M., Williams, M., Marks, E., & Kennedy-Williams, P. (2022). Climate anxiety: What predicts it and how is it related to climate action?. *Journal of Environmental Psychology*, 83, 101866

Further questions about the authors' focus on hope:

- Hope is defined by the authors as one thing, but the many other authors they cite may define or operationalize hope very differently.
- Hope is used inconsistently in the manuscript. It has one definition in the introduction (affective and cognitive components). In the model, there are two appraisal components, yet “hope” in the model seems to be contingent upon constructs not discussed in the intro: shared values, shared goals, and shared understanding of adaptation pathways. In the text following the model, hope is described as affective, in terms of “warm glow” and “positive affect loop”.
- Hope is not an explicitly named box in the model, yet it is given its own subheading in the section describing the model.

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Version 1:

Decision Letter:

**\*\* Please ensure you delete the link to your author homepage in this e-mail if you wish to forward it to your co-authors \*\***

Dear Dr Mortreux,

Your Perspective titled "Hope as an enabler of climate change adaptation" has now been seen by 2 referees, whose comments appear below. In the light of their advice I am delighted to say that we are happy, in principle, to publish it in Communications Psychology.

We will not send your revised paper for further review if, in the editors' judgement, the referees' comments on the present version have been addressed. If the revised paper is in Communications Psychology format, in accessible style and of appropriate length, we shall accept it for publication immediately. I have attached an edited version of your manuscript, and ask you to attend to each comment in detail. We have edited the piece to comply with journal style, and we ask that you respond to editorial and reviewer comments. We highlight in particular that programmatic statements should be omitted, that referencing needs to be improved, and that a Perspective should end in an outlook, not a summary of the main arguments.

#### EDITORIAL REQUESTS:

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We hope to hear from you within two weeks; please let us know if the process may take longer.

Best regards,

Jennifer Bellingtier

Jennifer Bellingtier, PhD  
Senior Editor  
Communications Psychology

#### REVIEWERS' EXPERTISE:

Reviewer #1 Climate Change, Communication  
Reviewer #2 Climate Change, Collective Action

#### REVIEWERS' COMMENTS:

Reviewer #1 (Remarks to the Author):

I appreciate the thoughtful responsiveness the authors have shown in their revised manuscript. I have no further concerns or suggestions.

One minor point: On line 206, the Bandura citation needs updating.

Reviewer #2 (Remarks to the Author):

The manuscript is improved from the last round. However, I still found that it would need substantial work prior to publication. I explore some considerations below (I tried to be as thorough as possible, though I might have missed some things).

L56-63 Generally speaking, there are several claims here that would be bolstered by citations, either as evidence, or to provide clarity as to what they refer to.

L124 This claim would be helpful to clarify. Are the authors stating that more work has been done (in specific journals perhaps?) to understand climate change mitigation behavior than adaptation behavior? If so, clarifying which journals they refer to and providing evidence for this claim will be useful, perhaps via a systematic review that supports this claim. However, I'm not sure how useful this claim is to the argument, as I believe it seems to imply that with a couple exceptions, no one is studying this topic (justifying why it is important to study). I believe that there is far more work on this than implied here, and by doing a quick, nonsystematic, and nonexhaustive search, found the following references which might be useful (especially as some are reviews and thus point to other work):

Carman, J. P., & Zint, M. T. (2020). Defining and classifying personal and household climate change adaptation behaviors. *Global Environmental Change*, 61, 102062.

Maiella, R., La Malva, P., Marchetti, D., Pomarico, E., Di Crosta, A., Palumbo, R., ... & Verrocchio, M. C. (2020). The psychological distance and climate change: A systematic review on the mitigation and adaptation behaviors. *Frontiers in Psychology*, 11, 568899.

Raimi, K. T., Sarge, M. A., Geiger, N., Gillis, A., & Cunningham, J. L. (2024). Effects of communicating the rise of climate migration on public perceptions of climate change and migration. *Journal of Environmental Psychology*, 93, 102210.

Reser, J. P., & Swim, J. K. (2011). Adapting to and coping with the threat and impacts of climate change. *American Psychologist*, 66(4), 277.

Van Valkengoed, A. M., & Steg, L. (2019). Meta-analyses of factors motivating climate change adaptation behaviour. *Nature climate change*, 9(2), 158-163.

L136-137 Please provide a citation for this claim (not sure if Adger, 2003 is the intended citation, but I believe a more recent one is needed).

The discussion of hope is somewhat improved from the last version, but still confusing in some places and lacking nuance in other places. First, the section begins with the sentence "Emotions are important drivers of individual and collective action", seeming to ground their discussion of hope in the notion that it is an emotion, but then later on, adopts Snyder's definition of hope, where Snyder bases his definition on the notion that hope is explicitly not an emotion. While there is some attempt to acknowledge the tension between definitions of hope as an emotion and other definitions of hope, I believe that more work needs to be done to clearly explore how the present work is defining hope, rather than bouncing around between different definitions that various researchers have employed. Once the current definition is clear, it will then be easier to explain how different conceptualizations relate to (or don't relate to) what the manuscript is discussing.

Second, several of the references I suggested in my previous review (and the authors now note here) demonstrated a nuanced perspective on hope, illustrating that although hope may have the potential to motivate action, there are key factors that are important to consider (e.g., "denial hope" has a negative relationship with action). The current manuscript seems to largely overlook many of these nuances with this rapidly emerging body of work, instead pointing to a more simplistic (I would argue, oversimplistic) picture. Lines 225-231 are an exception, but even here, there is no theoretical explanation provided for why these findings might differ across these different contexts. And then, these nuances are not revisited until

L492 which feels as though it makes an important point that should have been foreshadowed sooner. And, the paragraph beginning on L536 does not lay out a conceptual reason for this divergence, rather seeming to list a set of studies that find this pattern without any interpretation of why this might be the case.

Third, I also tried to suggest in the last round that it seems key to explore previous work that has looked at hope and adaptation behavior or hope in the global south, from the two review articles I suggested. This might not have been clear, so I read the two reviews and am including a few references I found that seem useful (based on Table 1 in Geiger et al 2023): Bukchin, S., & Kerret, D. (2020). The role of self-control, hope and information in technology adoption by smallholder farmers – A moderation model. *Journal of Rural Studies*, 74, 160–168. <https://doi.org/10.1016/j.jrurstud.2020.01.009>

Bukchin-Peles, S., & Kerret, D. (2021). Sustainable technology adoption by smallholder farmers and goal-oriented hope. *Climate and Development*, 13(10), 922–931. <https://doi.org/10.1080/17565529.2021.1872477>

Wang, X., & Chen, J. (2022). Fear emotion reduces reported mitigation behavior in adolescents subject to climate change education. *Climatic Change*, 174(1), 1. <https://doi.org/10.1007/s10584-022-03419-7>

L213 What does this “reciprocal relationship” mean?

L233-237 This feels like somewhat of an aside given that well-being is not a part of the conceptual model (Figure 1).

L287/Figure 1 – this is improved from the last version! However, I still have some questions about how this can be made most useful given existing literature. First, we know from previous literature that “denial hope” (or hope grounded in denial) is counterproductive to action, is that important to weave into the model here, or do the authors have reason to think that this would not be relevant in the current context (and if so, why?). Second, I’m left unclear whether “group hope” is an emotion that an individual personally feels in response to a plight that they share with a group, or whether it is a shared emotion that they feel together with other people in response to a shared plight. And I am also not sure what “industrial” means (L284).

L336-344 Note that Magaletta and Oliver (already cited) distinguish efficacy and hope (using Snyder’s scale) as two empirically separable predictors of outcomes. Per this paper, pathways (nor agency) is not the same as self-efficacy. Since this section is all about efficacy (not hope) clarification is needed here.

Also note a number of places where there is a placeholder for citations – a proofread may be helpful.

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# COMMSPSYCHOL-24-0020-T

## Detailed response to reviewer comments

### Reviewer #1:

This manuscript, Hope as an Enabler of Climate Change Adaptation, posits a conceptual model whereby hope (about the potential for a community to adapt to climate change) and action (productive community responses) are positively related and reciprocal. The manuscript is well-written, deals with a vitally important issue, and advances essential ideas.

**Author response 1:** Thank you for crafting such constructive comments. We have carefully considered each comment and hope the changes we have made address your concerns.

Reviewer comment: In my assessment, the proposed model is promising although not yet ready for prime time, primarily for one reason: The model seeks to explain the relationship between hope and action at the community level of analysis—which is a worthy aim—but the model itself appears to be built on a mix of concepts at both the community level of analysis (e.g., the “hope in adaptation” constructs of shared values, shared goals, and shared understanding of pathways) and the individual level of analysis (e.g., the “climate risk appraisal” constructs; some of the “adaptation appraisal” constructs; and some of the “well-being” constructs). In other words, as I read it, the model currently fails to distinguish between individual- and community-level processes. My recommendation is to start by positing the hope—action relationship at the individual level of analysis, and then use that as the springboard to posit the hope—action relationship at the community level.

**Author response 2:** Thank you for this recommendation. We have acted on your suggestion: positing the hope-action relationship at the individual scale and then, separately, positing the relationship at the collective level. We have added a paragraph on measuring hope (from line 239) to help demonstrate how this shift between scales is actionable. The conceptual model and the proceeding explanation now makes a clear distinction between personal and collective scales related to background conditions, hope, and adaptation behaviour. The interactions between each are explained (lines 315-358). We believe this change has significantly strengthened the paper.

Reviewer comment: My second--although lesser—major concern pertains to the lack of a clear conceptual definition of hope, the central construct in the proposed model. I recognize that hope is an elusive construct, treated in various ways by various authors. However, the value of the proposed model will be inherently tied to the clarity of the conceptual definition advanced by the authors.

I urge the authors to consider Steve Chaffee’s (1991) primer titled Explication for guidance on how to strengthen their conceptual definition.

**Author response 3:** Thank you for this suggestion. We have refined the conceptual definition of hope (see section starting at line 161) and, to add conceptual clarity, we have reorganised previous text into three subsections to explicate the mechanisms (line 193), outcomes (line 212) and measurement of hope (line 239).



Reviewer comment: On a related note, the authors would be doing a service if they also provide operational guidance on how to measure hope--ideally at the individual and the community levels--so that investigators who find the proposed model useful can explore it using the same measures of hope.

**Author response 4:** As per response above, we have added a subsection on measuring hope and this outlines studies that have measured individual and collective hope levels.

Reviewer comment: Another related note: The factors that give rise to hope that are mentioned in the text of the manuscript (e.g., will and ways) are not the same as the factors shown in Figure 1—which is confusing.

**Author response 5:** The model (Figure 1) has been updated to consistently reflect the factors discussed in the manuscript.

Reviewer comment: Minor points: Line 169 states that the hope—action relationship is “mediated” by structural factors. I believe the correct term is “moderated.” The authors note the importance of “social identity” in the text, but it does not appear in Figure 1. That strikes me as an oversight.

**Author response 6:** We have changed the text from “mediated” to “moderated”. We have also updated the model significantly to account for social identity theory. Thank you, this has added greater clarity and consistency.

Reviewer comment: Final thoughts: The authors (wisely, in my opinion) draw from Bandura’s Social Cognitive Theory, which posits “triadic reciprocal determinism” between internal personal factors (including, potentially, hope), behavior, and social and structural environmental factors. More fully embracing SCT as a more general model may help the authors clarify their more specific model. Indeed, many of the elements represented in Figure 1 can be reconfigured to be consistent with SCT.

**Author response 7:** Thank you for this recommendation. In line with the reviewer’s recommendation, we have made explicit our use of Bandura’s triadic reciprocal determinism, and we deepened our use of social identity theory, namely through SIMCA (van Zomeren et al) and SIMPEA (Fritzsche et al). These models include the environment and behaviour components of Bandura’s triadic reciprocal determinism model.

Reviewer comment: With these comments, I attempted to be constructively critical, and hope I succeed (in being constructive). I greatly appreciate the author’s work and hope to see it published soon.

**Author response 8:** Thank you for your careful review and we appreciate this guidance. We feel the feedback has strengthened the paper substantially.

## Reviewer #2 (Remarks to the Author):

Reviewer comment: The manuscript presents a theoretical model considering whether and how hope could promote adaptation action on climate change. The model suggests bidirectional relationships between a) climate appraisal and adaptation appraisal, b) adaptation appraisal and hope, and c) hope and adaptation action. They then propose that all are influenced by structural factors and have

bidirectional relationships with well-being. I found merit in the general idea of the manuscript. I think this is an important topic and the authors had some interesting ideas. However, I found a number of ambiguities and inconsistencies throughout.

It would be helpful to include more information up-front about what “adaptation” means and what some examples of key adaptation steps look like. The term climate adaptation has a specific meaning, but at times the authors use it vaguely, and in some cases seem to use it as synonymous with “climate action”. I am assuming that when the authors refer to climate adaptation, they intend this term to be in contrast with climate mitigation, but it would be helpful to make this explicit and explain what this means.

**Author response 9:** Thank you for this recommendation. We have added a section (from line 86) which details what adaptation is, its distinction from mitigation, the state of adaptation progress, and the limits in using pro-environmental behaviour as a proxy for adaptation. This section also takes the opportunity to demonstrate why adaptation requires collective action, foreshadowing the later focus on collective hope.

Reviewer comment: And relatedly, the bulk of the evidence suggests that climate anxiety is positively associated with pro-environmental behavior and activism (see Ogunbode et al for a meta-analysis). So, if the authors want to claim that anxiety is detrimental to “adaptation”, I think they should present a much more nuanced view that makes a case for their argument given that it runs counter to (at least this) meta-analytic evidence that summarizes across the literature.

Ogunbode, C. A., Doran, R., Hanss, D., Ojala, M., Salmela-Aro, K., van den Broek, K. L., Bhullar, N., Aquino, S. D., Marot, T., Schermer, J. A., Włodarczyk, A., Lu, S., Jiang, F., Maran, D. A., Yadav, R., Ardi, R., Chegeni, R., Ghanbarian, E., Zand, S., ... Karasu, M. (2022). Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries. *Journal of Environmental Psychology*, 84, 101887. <https://doi.org/10.1016/j.jenvp.2022.101887>

**Author response 10:** Thank you for this comment. There are two parts to this comment: the first on pro-environmental behaviour; the second on the role of anxiety. We have addressed both. We have added a paragraph starting at line 124 arguing that pro-environmental behaviour is a poor proxy for adaptation, and we justify this with literature. With regard to climate anxiety, we have added a paragraph (from line 217) arguing that the role of climate anxiety can exist in tandem with hope (rather than being an antithesis). This provides important nuance, and has strengthened our argument that greater attention is needed to understand adaptation in the context of the global south.

Reviewer comment: Similarly, though I think the authors are correct that hope is not as well studied as some other emotional experiences, there is a fairly large and growing body of work exploring the links between hope and climate action. The authors do engage with several of these studies, but these connections could be further expanded. I suggest starting with the recent meta-analysis by Geiger and colleagues, which provides a framework relevant to some of the authors’ assertions and I believe also includes several studies looking at hope and climate adaptation in the Global South. Additionally, Maria Ojala’s condensed review is another useful reference.

Geiger, N., Dwyer, T., & Swim, J. K. (2023). Hopium or empowering hope? A meta-analysis of hope and climate engagement. *Frontiers in Psychology*, 14, 1139427.

Ojala, M. (2023). Hope and climate-change engagement from a psychological perspective. *Current Opinion in Psychology*, 49, 101514.

**Author response 11:** Thank you for this suggestion. We have engaged with both these papers, and have integrated their contributions in this paper, particularly Ojala's work on constructive hope (see discussion of constructive hope in section on complacency).

Reviewer comment: I find myself confused by the "hope" section of Figure 1. Up until I read this section, I had learned that the manuscript defined hope as an emotion that also had cognitive aspects (the will and the ways). Then, Figure 1 introduces key concepts of hope as being "shared values", "shared goal", and "shared understanding". This feels like a highly social definition of hope that was at all what I was expecting based on how the authors define hope previously and the body of literature they draw from when discussing hope.

**Author response 12:** Indeed, this comment mirrors comments from reviewer 1. In the lead up to the figure, we have started by positing the hope-action relationship at the individual scale and then, separately, posited the relationship at the collective level and the role of social identity and norms in shaping affect, drawing on SIMCA and SIMPEA. We believe this change has significantly strengthened the paper.

Reviewer comment: Aside from this, I think the authors could also do more to contextualize their model and relate it to other existing models. For example, it would be helpful to unpack how this relates to TPB, PMT, MPACC, etc. Further, Hornsey and Fielding's (2016; already cited by the authors) model suggests that efficacy mediates the relationship between hope and action, while the model here suggests that hope mediates the relationship between efficacy and action. This feels like an assumption that should be made explicit and justified.

**Author response 13:** This comment mirrors a comment from reviewer 1 also. We have provided more context to explain how the model fits with other existing models. Rather than expand on TPB, PMT and MPACC, we have instead adjusted the model to fit more closely to Bandura's triadic model of reciprocal determinism, and we deepened our use of social identity theory, namely through SIMCA (van Zomeren et al) and SIMPEA (Fritzsche et al). This is explained from line 295.

Reviewer comment: Other comments: P4 Again, there is now a large body of work examining anxiety and fear around climate change and its relationship with action. Rather than citing a single study from 2002 (or even cherry-picking a few studies) to make an overly broad point that "fear is bad", I encourage the authors to engage with this literature more holistically and open-mindedly.

**Author response 14:** Thanks for this comment. It mirrors a similar comment by another reviewer. We have balanced this review on the role of affect in shaping climate action, showing the ambiguity, and the important role of negative affect. Please see lines 149-159 for these adjustments, noting that these key meta-analyses (Ogunbode, van Valkengoed, and Ojala) are cited elsewhere in the paper also.

Reviewer comment: P13 This feels a little bit like sleight-of-hand, as the manuscript and section is centrally around hope, but these studies seem to refer to efficacy and not make the connection back to hope.

**Author response 15:** We have clarified the important role perceived efficacy plays as a mechanism of hope (see paragraph from line 204). We argue, supported by key hope theorists, that perceived efficacy is a central component of hope, otherwise referred to as waypower by Snyder. This is not sleight of hand but an important conceptual difference that should now be clear with our 'mechanisms of hope' subheading.

Reviewer comment: P14 Although I agree with the authors' notion that adaptation is something that should most effectively be performed at the societal level, it seems like adaptation, relative to mitigation, is relatively easier to undertake at the individual level (at least for people with financial means). If I have the money to do so, I cannot make a sizeable dent on mitigating climate change alone, but I can personally invest in adaptations in ways that directly improve my personal resilience (albeit with some obvious limitations in how much I can do so). More broadly, this paragraph is vague, and it seems like the only take-away message that I got is "previous research conducted in the global North may not translate to other settings." How so? More specific propositions, even if speculative, would be helpful.

**Author response 16:** Thank you for raising this. We have added multiple examples to demonstrate how communities use collective adaptation to pool resources and buffer personal climate risks. See lines 98-108.

Reviewer comment: P14-15 It seems like "false hope" is a broad concept that can manifest in at least two very different types of outcomes: 1) individuals engage in difficult action and hard work but toward a "false solution", and 2) individuals learn about a "false solution" that does not involve hard work on their part, motivating them not to take difficult actions. In the context of climate change, the latter, but not the former, could be thought of as a form of denial (and thus seems to relate to the "denial hope" that Geiger and Ojala both discuss). Similarly, I see possible connections related to concepts of faith the authors discuss on p16.

**Author response 17:** Thank you for making this connection. We have retained the current division in the paper of false hope linked to adaptation limits, and later, complacency. This aligns to the way in which hope is conceptualised in the adaptation literature.

### Reviewer #3 (Remarks to the Author):

Major claim of the paper: Hope is an important construct for Global South communities engaging in climate change adaptation.

The focus of the manuscript is intriguing because it encompasses Global South experience and focuses on community-level adaptation (rather than individual action, and rather than mitigation). Unfortunately, none of these dimensions are developed fully in the manuscript. The authors offer several great case studies/anecdotes from Global South communities, but these are interjected into the manuscript rather than forming the context from which the main claims are derived.

**Author response 18:** We have included a new section on climate change adaptation (the case for adaptation) which helps to bring to the fore this body of work and reduce the feeling of adaptation being an interjection rather than integral. Given the driving concept here is how the affective and cognitive dimensions of hope impact adaptation, it is appropriate that we rely more heavily on the psychology literature for the model than the adaptation literature.

When it comes to the focus on adaptation, the authors do not offer much rationale. It's unclear whether they believe that the model is only useful for mitigation, or if there is some other reason for including only adaptation.

**Author response 19:** As per comment above, we have added a rationale for adaptation, as distinct from mitigation, and as distinct from pro-environmental behaviour in the newly added section 'The case for adaptation'.

Community-level action also needs a much deeper exploration. There is a rich and expanding body of research on psychological factors that support an individual's participation in community-level action. The authors do not delve into this complexity. Factors such as social identity, community norms play an important role and are not considered in the model. Researchers that the authors can read for these concepts include Sebastian Bamberg (the SIMPEA model) and Masson & Fritsche.

**Author response 20:** Thank you for highlighting this. This mirrors the comments from reviewer 1. We have adjusted the model so that it is more closely aligned to the SIMPEA (Masson and Fritsche) and SIMCA model (van Zomeren). This brings out the collective action element with greater depth.

The ideas in this manuscript require deeper thinking. It is a sensible model, but does not incorporate the full complexity of hope (or other concepts, such as the factors that motivate an individual to engage in community-level action).

**Author response 21:** We have adjusted the model and its explanation to provide greater depth. This section now explains the role of factors that shape behaviour, including climate change experience, adaptation information and trust, social values, norms and social identity. Later, the manuscript details a range of caveats and limitations, including the role of faith, the limits to adaptation, and false hope. We feel this provides sufficient detail.

other issues/questions:

The authors claim early in the paper that climate anxiety is a barrier to action, however, the research literature more often names climate anxiety as a source of motivation for action rather than a barrier.

Climate anxiety is linked to pro-environmental action:

Ogunbode, C. A., Doran, R., Hanss, D., Ojala, M., Salmela-Aro, K., van den Broek, K. L., ... & Karasu, M. (2022). Climate anxiety, wellbeing and pro-environmental action: Correlates of negative emotional responses to climate change in 32 countries. *Journal of Environmental Psychology*, 84, 101887.

Whitmarsh, L., Player, L., Jiongco, A., James, M., Williams, M., Marks, E., & Kennedy-Williams, P. (2022). Climate anxiety: What predicts it and how is it related to climate action?. *Journal of Environmental Psychology*, 83, 101866

**Author response 22:** We have balanced our review on the role of affect in shaping climate action, showing the ambiguity, and the important role of negative affect.

Please see lines 146-157 for these adjustments. This includes citations to meta-analyses (Ogunbode, van Valkengoed, and Ojala).

We have also added a paragraph starting at line 124 arguing that pro-environmental behaviour is a poor proxy for adaptation, and we justify this with literature. Regarding climate anxiety, we have added a paragraph (from line 218) arguing that the role of climate anxiety can exist in tandem with hope (rather than being an antithesis). This provides important nuance and has strengthened our argument that greater attention is needed to understand adaptation in the context of the global south.'

Further questions about the authors' focus on hope:

- Hope is defined by the authors as one thing, but the many other authors they cite may define or operationalize hope very differently.

**Author response 23:** We have refined the conceptual definition of hope (see paragraph at line 149) and, to add conceptual clarity, we have reorganised previous text into three subsections to explicate the mechanisms, outcomes and measurement of hope (see subheadings under 'The Case for Hope').

- Hope is used inconsistently in the manuscript. It has one definition in the introduction (affective and cognitive components). In the model, there are two appraisal components, yet "hope" in the model seems to be contingent upon constructs not discussed in the intro: shared values, shared goals, and shared understanding of adaptation pathways. In the text following the model, hope is described as affective, in terms of "warm glow" and "positive affect loop".

**Author response 24:** Yes, other reviewers also raised this inconsistency. To address this, we have adjusted the model and its explanation. We use a broad definition of hope that recognises its affective and cognitive components. We also recognise hope can be expressed at individual and collective scales. The revised model is explicit about these interactions, and we hope (!) it is much clearer now.

- Hope is not an explicitly named box in the model, yet it is given its own subheading in the section describing the model.

**Author response 25:** As above, we have revised the model. Hope is now split into two boxes: personal hope and group-based hope. This provides much needed clarity on its role.



## REVIEWERS' COMMENTS:

### Reviewer #1 (Remarks to the Author):

I appreciate the thoughtful responsiveness the authors have shown in their revised manuscript. I have no further concerns or suggestions. One minor point: On line 206, the Bandura citation needs updating.

Author response: Thank you. We have updated this citation.

### Reviewer #2 (Remarks to the Author):

The manuscript is improved from the last round. However, I still found that it would need substantial work prior to publication. I explore some considerations below (I tried to be as thorough as possible, though I might have missed some things).

L56-63 Generally speaking, there are several claims here that would be bolstered by citations, either as evidence, or to provide clarity as to what they refer to.

Author response: I have cited the 6<sup>th</sup> Assessment Report from the IPCC (2021).

L124 This claim would be helpful to clarify. Are the authors stating that more work has been done (in specific journals perhaps?) to understand climate change mitigation behavior than adaptation behavior? If so, clarifying which journals they refer to and providing evidence for this claim will be useful, perhaps via a systematic review that supports this claim. However, I'm not sure how useful this claim is to the argument, as I believe it seems to imply that with a couple exceptions, no one is studying this topic (justifying why it is important to study). I believe that there is far more work on this than implied here, and by doing a quick, nonsystematic, and nonexhaustive search, found the following references which might be useful (especially as some are reviews and thus point to other work):

- Carman, J. P., & Zint, M. T. (2020). Defining and classifying personal and household climate change adaptation behaviors. *Global Environmental Change*, 61, 102062.
- Maiella, R., La Malva, P., Marchetti, D., Pomarico, E., Di Crosta, A., Palumbo, R., ... & Verrocchio, M. C. (2020). The psychological distance and climate change: A systematic review on the mitigation and adaptation behaviors. *Frontiers in Psychology*, 11, 568899.
- Raimi, K. T., Sarge, M. A., Geiger, N., Gillis, A., & Cunningham, J. L. (2024). Effects of communicating the rise of climate migration on public perceptions of climate change and migration. *Journal of Environmental Psychology*, 93, 102210.
- Reser, J. P., & Swim, J. K. (2011). Adapting to and coping with the threat and impacts of climate change. *American Psychologist*, 66(4), 277.

- Van Valkengoed, A. M., & Steg, L. (2019). Meta-analyses of factors motivating climate change adaptation behaviour. *Nature climate change*, 9(2), 158-163.

Author response: Adjustments by the editorial team have softened this statement. Conducting a systematic literature review on this is not realistic for this paper, but would make a good paper in itself. Instead, I have made the following adjustments to demonstrate that the review of literature on adaptation and psychology from the global south is integrated throughout the paper:

- I have added a citation at line 145,
- I have added a sentence at 175 to flag that proceeding sections review this literature,
- I have added a sentence at line 545 to include the Bukchin-Peles paper (indeed, a great paper!).

I hope this addresses this concern sufficiently. Lines 378-660 provides extensive citations for the hope-adaptation-global south literature. This includes van Valkengoed which reviewer 2 suggests.

Note that, with the exception of Reser 2011 and Bukchin 2021 (now cited), the papers that Reviewer 2 suggests are not suited to this review (not empirical papers, not focussed on the global north, not focussed on hope).

L136-137 Please provide a citation for this claim (not sure if Adger, 2003 is the intended citation, but I believe a more recent one is needed).

Author response: I have retained Adger 2003 but have made a note that it is a seminal work. It would be remiss not to cite it.

The discussion of hope is somewhat improved from the last version, but still confusing in some places and lacking nuance in other places. First, the section begins with the sentence “Emotions are important drivers of individual and collective action”, seeming to ground their discussion of hope in the notion that it is an emotion, but then later on, adopts Snyder’s definition of hope, where Snyder bases his definition on the notion that hope is explicitly not an emotion. While there is some attempt to acknowledge the tension between definitions of hope as an emotion and other definitions of hope, I believe that more work needs to be done to clearly explore how the present work is defining hope, rather than bouncing around between different definitions that various researchers have employed. Once the current definition is clear, it will then be easier to explain how different conceptualizations relate to (or don’t relate to) what the manuscript is discussing.

Author response: I have made the authors’ definition of hope more explicit. See the two sentences at line 200 and the sentence at 213.

Second, several of the references I suggested in my previous review (and the authors now note here) demonstrated a nuanced perspective on hope, illustrating that although hope may have the potential to motivate action, there are key factors that are important to consider (e.g., “denial hope” has a negative relationship with action). The current manuscript seems to largely overlook many of these nuances with this rapidly emerging body of work, instead pointing to a more simplistic (I would



argue, oversimplistic) picture. Lines 225-231 are an exception, but even here, there is no theoretical explanation provided for why these findings might differ across these different contexts. And then, these nuances are not revisited until L492 which feels as though it makes an important point that should have been foreshadowed sooner. And, the paragraph beginning on L536 does not lay out a conceptual reason for this divergence, rather seeming to list a set of studies that find this pattern without any interpretation of why this might be the case.

Author response: To help foreshadow this work on denial and the caveats and limitations of hope, I have added a sentence at line 288.

Third, I also tried to suggest in the last round that it seems key to explore previous work that has looked at hope and adaptation behavior or hope in the global south, from the two review articles I suggested. This might not have been clear, so I read the two reviews and am including a few references I found that seem useful (based on Table 1 in Geiger et al 2023):

- Bukchin, S., & Kerret, D. (2020). The role of self-control, hope and information in technology adoption by smallholder farmers – A moderation model. *Journal of Rural Studies*, 74, 160–168. <https://doi.org/10.1016/j.jrurstud.2020.01.009>
- Bukchin-Peles, S., & Kerret, D. (2021). Sustainable technology adoption by smallholder farmers and goal-oriented hope. *Climate and Development*, 13(10), 922–931. <https://doi.org/10.1080/17565529.2021.1872477>
- Wang, X., & Chen, J. (2022). Fear emotion reduces reported mitigation behavior in adolescents subject to climate change education. *Climatic Change*, 174(1), 1. <https://doi.org/10.1007/s10584-022-03419-7>

Author response: Indeed the Bukchin papers are useful. I have referred to one at line 545. I have not included Wang as this relates to mitigation, not adaptation.

L213 What does this “reciprocal relationship” mean?

Author response: Replaced with ‘bi-directional’.

L233-237 This feels like somewhat of an aside given that well-being is not a part of the conceptual model (Figure 1).

Author response: This is true, but we would prefer to keep it here, as wellbeing is a fundamental outcome for effective adaptation.

L287/Figure 1 – this is improved from the last version! However, I still have some questions about how this can be made most useful given existing literature. First, we know from previous literature that “denial hope” (or hope grounded in denial) is counterproductive to action, is that important to weave into the model here, or do the authors have reason to think that this would not be relevant in the current context (and if so, why?). Second, I’m left unclear whether “group hope” is an emotion that an individual personally feels in response to a plight that they share with a group, or whether it is a shared emotion that they feel together with other people in response to a shared plight. And I am also not sure what “industrial” means (L284).

Author response: In response to “group hope”, the short answer is both. I have made slight adjustment to clarify this (line 522). Typo fixed for “industrial”.

L336-344 Note that Magaletta and Oliver (already cited) distinguish efficacy and hope (using Snyder’s scale) as two empirically separable predictors of

outcomes. Per this paper, pathways (nor agency) is not the same as self-efficacy. Since this section is all about efficacy (not hope) clarification is needed here.

Author response: Magaletta and Oliver do distinguish between self-efficacy and hope but this is not consistent in the literature. Indeed, hope has been shown to enhance collective efficacy to achieve social change both correlationally and experimentally (Greenaway et al., 2016). We feel this is quite clear in the paragraph at line 259.

Also note a number of places where there is a placeholder for citations – a proofread may be helpful.

Author response: Indeed, they have been updated. Thank you.