

BRIEF REPORT

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The mediating role of concerns for the child and concerns for the environment in the relation between ecological preoccupations and reproductive desire

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Abstract

Environmental changes are associated with a decrease in the desire for children and the number of children desired. But what are the mechanisms behind these relationships? This brief report examines the role of two potential mediators: concerns for the future of a potential child and concerns for the environmental impact of having a child. The cross-sectional questionnaire completed online by 1260 childless individuals reveals that both types of concerns act as mediators between environmental changes and the desire for children and the number of children desired (with all indirect pathways showing significance). Nonetheless, concerns for the future of the child have, in some cases, a more substantial mediating effect compared to concerns for the environment. These findings strengthen an emerging literature and suggest important avenues for future research.

Keywords Childbearing motivations, Desire for children, Environmental crisis, Climate change, Ecological crisis

Environmental changes have led to an increase in both eco-anxiety (i.e. “a chronic fear of environmental doom” ([1], p. 68) and ecological worldview (i.e. the beliefs that just as other living beings, humans are subject to laws of nature, and that environmental changes pose major threats to human beings [2, 3]). Eco-anxiety and ecological worldview have themselves been linked to a lower desire for children and a lower number of children desired [4, 5] (for a review, see [6]).

However, the mechanisms explaining these relations remain underexplored. Two primary concerns have surfaced in previous studies: Concerns for the future of a potential child living in a world affected by environmental changes (hereunder referred to as “concerns for the child” [5, 7–11] and concerns for the environmental impact of having a child (e.g. carbon footprint, overpopulation; hereunder referred to as “concerns for the environment”; [8–11]). However, existing studies are mostly qualitative and often



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examine the role of only one of these mechanisms. The present brief report has two aims. First, to quantitatively examine the generalizability of these important findings by testing the mediating role of these two types of concerns between eco-anxiety and ecological worldview and the desire for children and the number of children desired. We hypothesize a positive association between eco-anxiety and ecological worldview and concerns for the child and for the environment, alongside a negative association between these concerns and the desire for children and the number of children desired. Furthermore, we predict indirect relations between eco-anxiety and ecological worldview on the one hand and the desire for children and the number of children desired on the other hand through the two types of concerns. Second, we aim to compare the relative weight of concerns for the child and concerns for the environment in these relationships.

1 Method

1.1 Participants and procedure

This brief report is embedded within a larger pre-registered study (https://osf.io/rx5vm/?view_only=c256b426cac64fb0ac42a2554eb322a9) and received approval from the ethical committee of IPSY (Research Institute in Psychological Sciences of UCLouvain) on October 27, 2023. The study in its whole was performed in accordance with relevant guidelines and regulations. An online questionnaire, presented as focusing on “the desire and non-desire for children”, was disseminated through social media, word-of-mouth, higher education establishments and companies. It was available on REDCap from January 19, 2024, to February 24, 2024. 1260 childless adults (mean age = 24.89, SD = 4.77) provided their informed consent to participate. A majority identified as female (72.3%) and resided in Belgium (96.4%). A lottery allowed 5 participants (one out of 250) to win €100.

1.2 Measures

Sociodemographic variables (gender, affective status, educational level and age) were measured. We measured social desirability through the Marlowe-Crowne scale [12], comprising 13 true/false items that evaluate the tendency of participants to respond in a socially desirable manner. Eco-anxiety was measured through the short version of the Climate Anxiety Scale [13, 14], comprising 13 items rated on a scale from “Never” to “Almost always.” Ecological worldview was assessed through the New Ecological Paradigm Scale [2, 3], comprising 15 items rated on a spectrum from “Strongly disagree” to “Strongly agree.” Concerns for the future of a potential child and concerns for the environmental impact of having a child were both measured through four items, utilizing the same response scale as the ecological worldview. The desire for children was measured by asking “Do you want to have (a) child(ren)?”, with response options being “I’m sure I want to,” “I think I want to” (both categorized as “yes” and coded as 1), “I think I don’t want any,” and “I’m sure I don’t want any” (both categorized as “no” and coded as 0). Those in the “yes” categories were prompted with “How many children would you ideally like to have?” to measure the number of children desired. Those in the “no” categories received a score of 0. These two final questions were deliberately placed at the beginning of the questionnaire to prevent responses from being influenced by subsequent questions. For variables with multiple items, total scores were computed by averaging item scores. Supplementary Online Material (Table S1) provides all the items. The

McDonald's omegas ranged from 0.76 to 0.90 (see Table S2 for descriptive statistics), except for social desirability, whose McDonald's omega was 0.60.

1.3 Data analysis

To ensure that concerns for the child and for the environment form two distinct factors, we started by computing an exploratory factor analysis (EFA) of the eight items. The EFA showed that items form two distinct factors and the items load as expected on their theoretically corresponding factors (see Table S3–S5 and Figure S1). We then computed bivariate correlations between variables of interest. Before computing the path analysis, we calculated bivariate correlations between sociodemographic and control variables (gender, affective status, educational level, age and social desirability) and the desire for children and the number of children desired (see Table S7). We computed a point-biserial correlation when the correlation included at least one nominal variable (i.e. gender, affective status, educational level and the desire for children). We computed a Pearson correlation when both variables were quantitative (i.e. the correlations between age/social desirability and the number of children desired) since both variables are sufficiently normally distributed. We included in the path analysis the sociodemographic and control variables that significantly correlated with either the desire for children or the number of children desired, i.e. affective status, age and social desirability. Since age and social desirability also significantly correlate with eco-anxiety (only for social desirability), ecological worldview, concerns for the future of a potential child and concerns for the environmental impact of having a child, we included covariances for these links in the path analysis, along with paths between age and the desire for children and the number of children desired. Paths also link affective status and social desirability with the desire for children and the number of children desired. We finally computed the path analysis per se in RStudio and tested its fit, using the following indices: χ^2 (it is expected to be non-significant, but we interpret it with caution since it is sensitive to sample size), comparative fit index (CFI; it is considered acceptable from 0.90 on and good from 0.95 on), Tucker-Lewis index (TLI; the same thresholds as for CFI are used), root mean square error of approximation (RMSEA; it is considered acceptable below 0.08 and good when it is equal to or below 0.06) and standardized root mean square residual (SRMR; the same thresholds as for RMSEA are used). While one could fear that the correlation between concerns for the child and concerns for the environment ($r = .68$) could induce multicollinearity problems, their VIF index (obtained through a multiple linear regression with the number of children desired as predicted variable and both kinds of concerns as predictors) was only 1.85, which is far below the common-used threshold of 10. There is therefore no problem of multicollinearity between these two variables. We finally compared the coefficients of the indirect paths two by two (varying the mediator for the relationship between the same predictor and outcome variables) thanks to a syntax developed by Mr Regorz [15].

2 Results

The correlation matrix is depicted in Table S6. The fit indices of the estimated model are generally good: $\chi^2_{(8)} = 31.87$, $p < .001$; CFI = 0.99; TLI = 0.97; RMSEA = 0.05; SRMR = 0.02. Except for the χ^2 , which is sensitive to large sample sizes as we have, all the indices suggest that the model fits well with the data. As shown in Fig. 1, almost all paths

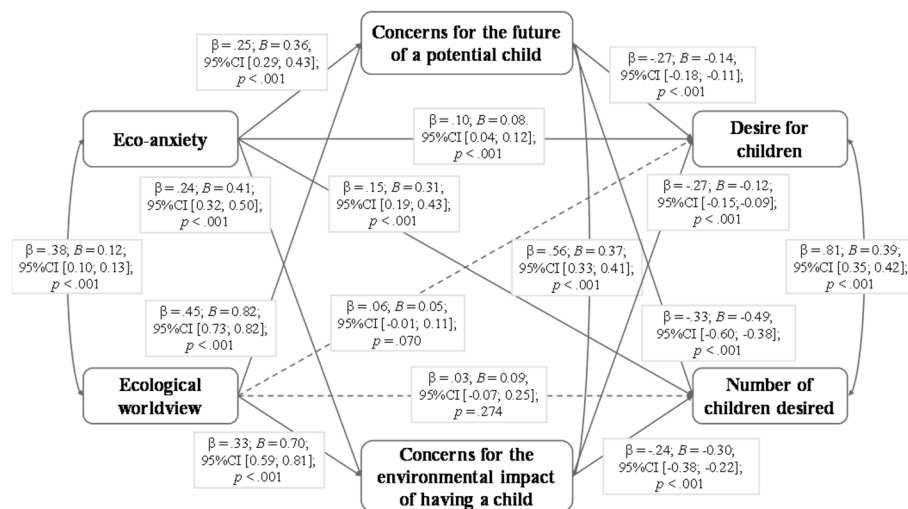


Fig. 1 Path analysis. Dashed lines represent non-significant paths. The model presented also includes age, affective status and social desirability as covariates (cf. Data Analysis section). They are not displayed in the figure for clarity purposes

Table 1 Coefficients for the indirect paths

Indirect path	β	B	95% confidence interval (CI)	p	Significantly different from each other
Eco-anxiety $\rightarrow$ Concerns for the future of a potential child $\rightarrow$ Desire for children	-.07	-0.05	-0.07; -0.03	<.001	No ($p = .858$; 95% CI [-0.03; 0.02])
Eco-anxiety $\rightarrow$ Concerns for the environmental impact of having a child $\rightarrow$ Desire for children	-.06	-0.05	-0.07; -0.03	<.001	No ($p = .126$; 95% CI [-0.12; 0.02])
Eco-anxiety $\rightarrow$ Concerns for the future of a potential child $\rightarrow$ Number of children desired	-.08	-0.18	-0.23; -0.13	<.001	No ($p = .184$; 95% CI [-0.08; 0.02])
Eco-anxiety $\rightarrow$ Concerns for the environmental impact of having a child $\rightarrow$ Number of children desired	-.06	-0.12	-0.16; -0.08	<.001	Yes ($p = .005$; 95% CI [-0.33; -0.06])
Ecological worldview $\rightarrow$ Concerns for the future of a potential child $\rightarrow$ Desire for children	-.12	-0.12	-0.15; -0.08	<.001	
Ecological worldview $\rightarrow$ Concerns for the environmental impact of having a child $\rightarrow$ Desire for children	-.09	-0.09	-0.11; -0.06	<.001	
Ecological worldview $\rightarrow$ Concerns for the future of a potential child $\rightarrow$ Number of children desired	-.15	-0.40	-0.50; -0.31	<.001	
Ecological worldview $\rightarrow$ Concerns for the environmental impact of having a child $\rightarrow$ Number of children desired	-.08	-0.21	-0.28; -0.14	<.001	

Variable X $\rightarrow$ variable M $\rightarrow$ variable Y = indirect effect from X on Y through M

demonstrated significance and were in the expected direction, with medium effect sizes. All indirect paths were significant (see Table 1). Notably, the direct paths from eco-anxiety to the desire for children and the number of children desired are positive, contradicting the negative bivariate correlations, suggesting a suppressor effect due to the addition of the mediators. The mediators fully explain the negative relation between eco-anxiety and the desire for children and the number of children desired. The remaining part of this relation appears to be positive. We will further discuss this point in the Discussion. Additionally, the direct paths from ecological worldview to the desire for children and the number of children desired are non-significant, implying full mediation. There is no significant difference in the relative weights of the mediators, except when the predictor

is ecological worldview and when the predicted variable is the number of children desired.

3 Discussion

The findings validate the role of concerns for the child and concerns for the environment in the associations between eco-anxiety, ecological worldview, the desire for children, and the number of children desired. While very few quantitative literature exists on the topic, we can note that Zimmerman and colleagues [5] found out a β of .34 between eco-anxiety and threat perception (a variable comparable to concerns for the child). This slope is bigger than the one we observed ($\beta = .25$), which is not surprising since we measured ecological worldview and concerns for the environment, which share a part of the variance with eco anxiety and concerns for the child.

Surprisingly, the relations between eco-anxiety and both the desire for children and the number of children desired were *positive* when accounting for the presence of the two mediators, despite the fact that the corresponding correlations were negative. This suppressor effect indicates that, once the mediators are considered, the residual relations between eco-anxiety and the desire for children and the number of children desired become unexpectedly positive. A review of the literature conducted by Dillarstone and colleagues [6] reveals that, although most prior studies identified a negative association between environmental concerns and reproductive attitudes or intentions, a few studies reported positive correlations (see De Rose & Testa (2013) and Szczuka (2022), cited in Dillarstone et al. [6]). Notably, Davis and colleagues (cited in Dillarstone et al. [6]) differentiated environmental concerns into three categories: Egoistic (concern for oneself), altruistic (concern for humanity) and biospheric (concern for the environment). Their findings indicated that higher levels of egoistic and altruistic concerns were positively associated with reproductive attitudes, whereas biospheric concerns were negatively related. The positive association observed in our study between eco-anxiety and both the desire for children and the number of children desired may reflect egoistic concern. For instance, having children could be perceived as a source of support and security in old age.

In the present study, concerns for the child emerge as more important concerns when the predictor is ecological worldview and when the predicted variable is the number of children desired. The correlation coefficients also suggest a predominant role of this type of concerns, which is coherent with the suggestion of Schneider-Mayerson and Leong [11].

These results have important implications for both research and society. At an applied level, these results increase knowledge of the process involved in the phenomenon of environmentally childfreeness, which may be helpful to clinicians who accompany patients dealing with these issues. For instance, consider a clinician working with a patient who initially scores at 2 on the eco-anxiety scale (ranging from 1 to 5). After several weeks of increased awareness about environmental issues, the patient's eco-anxiety level increases by 1 point. If the patient is of reproductive age, the clinician might pay closer attention to concerns about the future of a potential child, as these concerns could also increase by one-third of a point ($B = 0.36$). Should the clinician observe such concerns, it would not be surprising to hear the patient question their desire for children or to note that this desire has decreased by 14% compared to before. The same logic

applies to ecological worldview, concerns for the environmental impact of having a child and the number of children desired. It is therefore relevant to consider these potential sequences. We should however bear in mind that while nearly all paths are statistically significant, their effect sizes are moderate, indicating that each variable predicts only a moderate change in the associated variables.

At a research level, quantitatively confirming the role of both kinds of concerns was a necessary step in the process to understand the mechanisms in the relations at stake. This study however has its limitations and various avenues for future research could be explored.

First of all, replicating the present results on more heterogeneous samples (e.g. in terms of educational level and gender) and on various populations (e.g. in other countries) is needed to go further in the generalizability of the results. For instance, climate change makes young people in France perceive the future as more frightening than their counterparts in Finland do, and it makes young people in the Philippines perceive it as even more frightening than young people in France and in Finland do [16]. Countries differ in their level of concern for environmental changes, as well in their level of attention paid to children well-being. The relative weight of concerns for the child and concerns for the environment could vary accordingly.

Second, the direction of causation and the mediation assumed in this article remain theoretical since the cross-sectional design of the present study precludes any causal conclusion. Longitudinal studies are crucial to unravel the causal dynamics of the identified relationships.

Third, measuring the desire for children in a more nuanced way would be interesting. Following Miller [17], the desire for children would be composed of both a positive and a negative component and their combinations can result in four distinct scenarios: being antinatal (i.e., solely experiencing a non-desire for children), being pronatal (i.e., solely experiencing a desire for children), being indifferent (i.e., experiencing neither a desire nor a non-desire for children), and being ambivalent (i.e., simultaneously experiencing both a desire and a non-desire for children). Allowing participants to express ambivalence and indifference would provide a more nuanced understanding of the phenomenon and how it relates to other variables.

Fourth, participants of the present study were all childless. Controlling for the (un)voluntary nature of their situation would be relevant to avoid any confounding factor and to precisely understand the relations of interest.

Fifth, the high correlation between the two kinds of concerns investigated (.68) suggests that these concerns are partially intertwined. Future research could investigate their common points and their specificities.

Sixth, while the current study emphasizes the two types of concerns that were the most highlighted in previous (qualitative) research, other concerns could warrant exploration (e.g., concerns for one's own living conditions as a parent in an environmentally changing world [4], or concerns for one's own ability to engage pro-environmentally while being a parent).

Seventh, it would be interesting to test whether the levels of hope of individuals and intolerance to the uncertainty play the role of moderators in the relations at stake.

In conclusion, this brief report underscores the significance of concerns for the child and concerns for the environment in the interplay of eco-anxiety, ecological worldview,

the desire for children, and the number of children desired. It provides partial evidence for the superior role of concerns for the child over concerns for the environment.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1007/s44202-025-00423-7>.

Supplementary Material 1.

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Generative AI and AI-assisted Technologies in the Writing Process

After writing a first draft of this article, the authors used ChatGPT 4 with the following instruction: "ChatGPT, below is an academic paper. Could you please polish the writing to meet the academic style, improve spelling, grammar, clarity, and overall readability?". After using it, all authors reviewed and edited the content and take full responsibility for the content of the publication.

Author contributions

Zoé Saliez: Conceptualization, Methodology, Investigation, Formal Analysis, Writing – original draft; review & editing. Clémence Brohez: Conceptualization, Investigation, Writing – review & editing. Isabelle Roskam: Writing – review & editing, Supervision. Moïra Mikolajczak: Conceptualization, Methodology, Writing – review & editing, Supervision.

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Data availability

Data are available via the Open Science Framework and can be accessed at [https://osf.io/bc6yv/?view_only=86dc2804242c4c22ac221dd1df4cc3ea] (https://osf.io/bc6yv/?view_only=86dc2804242c4c22ac221dd1df4cc3ea) to check the results.

Declarations

Ethical approval and consent to participate

This study received approval from the ethical committee of IPSY (Research Institute in Psychological Sciences of UCLouvain; see their general ethical principles on <https://www.uclouvain.be/en/research-institutes/ipsy/recommendations>) on October 27, 2023. Its ethical principles rely on Sect. 8 of the Ethical Principles of Psychologists and Code of Conduct of the American Psychological Association (<https://www.apa.org/ethics/code>) and on the French Society of Psychology (<https://www.sfpsy.org/2010/05/01/la-psychologie/deontologie-et-ethique-de-la-recherche-en-psychologie/un-code-de-conduite-des-chercheurs/>). The study in its whole was performed in accordance with relevant guidelines and regulations. Before taking part in the study, an information and consent form was presented to participants outlining the study's purpose and any applicable risk and benefit. Participants had to give their written informed consent to take part in the study. At the conclusion of the questionnaire, participants were presented with a debriefing message. This message outlined the study's objectives and provided contact information for the Commission of Psychologists, an association that lists certified psychologists in Belgium. Given that the questionnaire's topics could potentially evoke uncomfortable emotions (e.g., eco-anxiety), we also included our own contact details for participants who might have questions or wish to share feedback.

Consent for publication

Not applicable because the study is not a case study. Instead, data of participants are fully anonymized and aggregated, and they gave their written consent to have them published in this form.

Competing interests

The authors declare no competing interests.

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References

1. Clayton S, Manning CM, Krygsmann K, Speiser. Mental health and our changing climate: impacts, implications, and guidance. American Psychological Association and ecoAmerica; 2017. <https://www.apa.org/news/press/releases/2017/03/mental-health-climate.pdf>.
2. Dunlap RE, Liere KD, Mertig A, Jones R. Measuring endorsement of the new ecological paradigm: A revised NEP scale. *J Soc Issues*. 2000;56:425–42. <https://doi.org/10.1111/0022-4537.00176>.
3. Schleyer-Lindenmann A, Dauvier B, Ittner H, Piolat M. Mesure des attitudes environnementales: analyse structurale d'une version Française de La NEPS (Dunlap et al., 2000). *Psychologie Française*. 2016;61(2):83–102. <https://doi.org/10.1016/j.psfr.2014.07.002>.

4. Arnocky S, Dupuis D, Stroink ML. Environmental concern and fertility intentions among Canadian university students. *Popul Environ*. 2012;34(2):279–92. <https://doi.org/10.1007/s11111-011-0164-y>.
5. Zimmermann G, Darwiche J, Messerli-Bürgy N, Van Petegem S, Mouton B, Venard G, Antonietti J-P. Bringing children in a burning world? The role of climate anxiety and threat perceptions on childbearing motivations of emerging adults in Switzerland. *Emerg Adulthood*. 2024. <https://doi.org/10.1177/21676968241258270>.
6. Dillarstone H, Brown LJ, Flores EC. Climate change, mental health, and reproductive decision-making: A systematic review. *PLOS Clim*. 2023;2(11):e0000236. <https://doi.org/10.1371/journal.pclm.0000236>.
7. Fu X, Schneider-Mayerson M, Montefrio MJF. The reproductive climate concerns of young, educated chinese: ‘when the nest is upset, no egg is left intact’. *Environ Sociol*. 2023;9(2):200–15. <https://doi.org/10.1080/23251042.2022.2132629>.
8. Helm S, Kemper JA, White SK. No future, no kids—no kids, no future? An exploration of motivations to remain childfree in times of climate change. *Popul Environ*. 2021;43(1):108–29. <https://doi.org/10.1007/s11111-021-00379-5>.
9. Krähenbühl M. No future, no children? Towards a re-complexification of eco-reproductive concerns in French-speaking Switzerland. 2022. *Sociétés Politiques Comparées*, 58. ISSN 2429-1714.
10. Nakkerud E. There are many people like me, who feel they want to do something bigger: an exploratory study of choosing not to have children based on environmental concerns. *Ecopsychology*. 2021;13(3):200–9. <https://doi.org/10.1089/eco.2020.0057>.
11. Schneider-Mayerson M, Leong KL. Eco-reproductive concerns in the age of climate change. *Clim Change*. 2020;163(2):1007–23. <https://doi.org/10.1007/s10584-020-02923-y>.
12. Reynolds WM. Development of reliable and valid short forms of the Marlowe-Crowne social desirability scale. *J Clin Psychol*. 1982;38:119–25. [https://doi.org/10.1002/1097-4679\(198201\)38:13.0.CO;2-I](https://doi.org/10.1002/1097-4679(198201)38:13.0.CO;2-I).
13. Clayton S, Karazsia BT. Development and validation of a measure of climate change anxiety. *J Environ Psychol*. 2020;69:101434. <https://doi.org/10.1016/j.jenvp.2020.101434>.
14. Mouguiama-Daouda C, Blanchard MA, Coussement C, Heeren A. On the measurement of climate change anxiety: French validation of the climate anxiety scale. *Physiol Belgica*. 2022;62(1):123. <https://doi.org/10.5334/pb.1137>.
15. Regorz A. Path Comparison Lavaan [Regorz Statistik]. Comparing Paths in a Path Model with R/Lavaan. 2024. http://www.regorz-statistik.de/blog/lavaan_path_comparison.html.
16. Hickman C, Marks E, Pihkala P, Clayton S, Lewandowski RE, Mayall EE, Wray B, Mellor C, van Susteren L. Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *Lancet Planet Health*. 2021;5(12):e863–73. [https://doi.org/10.1016/S2542-5196\(21\)00278-3](https://doi.org/10.1016/S2542-5196(21)00278-3).
17. Miller WB. Differences between fertility desires and intentions: implications for theory, research and policy. *Vienna Yearbook Popul Res*. 2011;9:75–98. <https://doi.org/10.1553/populationyearbook2011s75>.

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