

**Caring for Present and Future Generations Alike: Longtermism and Moral Regard Across  
Temporal and Social Distance**

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### **Abstract**

In a comprehensive investigation involving a reanalysis and five pre-registered studies (N = 4,032), we investigate if empirically identified longtermists, determined by their Longtermism Beliefs Scale (LBS) scores, exhibit heightened moral regard for present and future generations across social distances. Longtermists consistently value future generations, present generations, outgroups, and nature more than the general population, as measured by the Moral Expansiveness Scale (MES). They also exhibit reduced dehumanization tendencies towards outgroups and future people, alongside greater identification with their community, compatriots, and all humans. Various factors explain the link between longtermism beliefs and moral regard, with moral obligation and identification with all of humanity potentially mediating it. Notably, the LBS maintains its significant impact on moral regard even when considering other future-oriented factors, highlighting its unique predictive power. These findings offer valuable insights into longtermist ethics, bridging theory and practical implications for safeguarding present and future generations amid existential threats.

**Keywords:** future generations, longtermism, moral expansiveness, effective altruism, obligation

## **Caring for Present and Future Generations Alike: Longtermism and Moral Regard Across Temporal and Social Distance**

A vast and prosperous future for humanity is possible, but not guaranteed (MacAskill, 2022; Ord, 2020; Blaser, 2018). There is reason to suspect that humanity could outlast many, if not most mammalian species, as our myriad collective achievements across technology and medicine offer the potential to preserve our place on planet Earth for millennia to come. At the same time, numerous existential threats pose considerable long-term risk to our planet and species, such as climate change, artificial intelligence (AI) and pandemic disease. Consensus is growing across philosophy (MacAskill, 2022; Ord, 2020), psychology (Caviola et al., 2021; Syropoulos, & Markowitz, 2021), and the natural sciences (e.g., Blaser, 2018; Taylor et al., 2012) that the well-being of distant future generations hinges upon individual and collective actions that we take in the present-day to mitigate these threats. However, it's crucial to acknowledge that resources are limited and present-day human suffering demands attention as well (Singer, 2015, 2016; Caviola et al., 2021), potentially introducing tension between priorities to enhance present and future well-being. Consequently, we ask the following: (1) For whom is the well-being of future generations a moral priority? and (2) Does prioritizing the well-being of future generations entail ascribing lesser regard for those in the present-day?

Longtermism, an ethical philosophy and social movement that advocates equal consideration for present and future well-being (MacAskill, 2022; Ord, 2020), challenges the bias towards present over future generations which prevails in the general population (Law et al., 2023; Wade-Benzoni, 2017). Recent research employing the Longtermism Beliefs Scale (LBS) indicates a broader alignment with longtermism principles than the size of the movement's following suggests (Syropoulos & Law et al., 2023), offering hope for securing a prosperous future. However, the LBS doesn't explicitly address the ascription of moral rights for future

generations (Syropoulos & Law et al., 2023), despite the substantial influence of moral consideration on prosocial behaviors (Anthis & Paez, 2021; Crimston et al., 2016, 2018a, 2018b). Additionally, while longtermism has faced criticism for potentially prioritizing the future over the present (MacAskill, 2022), the empirical basis for this critique remains crucially underexplored. It's possible that longtermists value present-day entities as much as or more than the general population, suggesting that nurturing concern for the future may also benefit the present.

### **Moral Regard and Its Consequences for Present (And Future) Prosocial Action**

The subjective moral standing of future generations may be a pivotal factor towards action to avert existential risks, as moral regard consistently correlates with prosocial behavior towards present-day individuals across social boundaries (Anthis & Paez, 2021; Crimston et al., 2016, 2018a, 2018b). The Moral Expansiveness Scale (MES; Crimston et al., 2016) assesses one's moral circle size, which maps moral consideration across concentric circles with oneself at the center. Typically, people exhibit a diminishing trend in moral regard for entities as social distance increases, placing close entities in inner circles (e.g., friends, family) and distant entities in outer circles (e.g., animals, outgroup members) (Crimston et al., 2016, 2018a, 2018b; Rottman et al., 2021; Graham et al., 2017).

The size of one's moral circle significantly impacts prosocial attitudes and behaviors. Those with larger moral circles, who extend greater moral regard even to socially-distant entities, tend to support humanitarian and environmental causes more, are more likely to make life-saving sacrifices, volunteer more, endorse other-oriented public health behaviors during crises like COVID-19 (Boggio et al., 2023), promote intergroup conflict resolution (Starzyk et al., 2021), and contribute more to real-world charitable endeavors (Wilks et al., 2023). These findings

collectively underscore the critical role of moral circles in driving willingness to engage in prosocial actions across various degrees of social distance towards individuals in the present.

But does possessing a broader moral circle extend to pro-future attitudes and intentions spanning temporal distance? Although the MES measures moral regard exclusively across social distance, the considerable overlap in how people perceive both social and temporal distance, supported by behavioral (Gilead et al., 2020; Tuen et al., 2023) and neuropsychological (Hill et al., 2017; Soutschek et al., 2016) evidence, suggests that moral circles could offer substantial predictive power over prosocial behaviors and intentions directed towards future generations. Recent research compellingly connects the inclusion of distant future entities in one's moral circle with future-oriented generosity, providing preliminary evidence of moral regard's potential to predict relevant pro-future outcomes (masked for review). Nonetheless, well-established psychological (e.g., Hauser et al., 2014) and behavioral economics (e.g., intergenerational discounting; Wade-Benzoni, 2008; Wade-Benzoni et al., 2008; Wade-Benzoni, 2017) research reveals a tendency to discount the needs of future generations relative to the present. Recent findings corroborate these earlier ones, demonstrating a similar trend in the subjective moral standing of future generations (masked for review). Specifically, this emerging work illustrates that moral circles, moral obligations, and prosocial intentions towards targets in the future progressively contract across increasing temporal distance. To summarize, while extending high moral regard to future entities would likely predict prosocial behavior towards future generations, evidence indicating that most people do not hold the future in such moral standing raises concerns about the practicality of using moral regard as a means to promote pro-future action.

### **Longtermism and Moral Regard for Future (And Present) Generations**

Although present-oriented moral preferences are commonplace, there is preliminary evidence that they may be variable across individuals. For one, the longtermism philosophy, an extension of the effective altruism movement (see Singer, 2015) which advocates valuing the welfare of future generations to the same extent as the present generation, has evolved into a small, yet increasingly popular social movement (MacAskill, 2022; Ord, 2020). Longtermism, at its core, can be reduced to three primary principles: (1) the welfare of future generations matters, (2) there could be an immeasurable number of humans born in the future, and (3) securing a long and prosperous future for humanity is possible through present-day action.

Spreading widely from roots in philosophy, ideas related to longtermism have become a ripe topic of discussion in psychology (Caviola et al., 2022; Syropoulos & Law et al., 2023; Syropoulos & Markowitz, 2022; Wilks et al., 2023), the natural sciences (Blaser, 2018; Taylor et al., 2012), and popular culture (Hunter & Hewson, 2020; McLamb, 2022). Moreover, longtermism and future-oriented thinking have influenced public policy decisions in recent times as well. For instance, the United States government has reduced the discounting rate for future generations this past year, recognizing the importance of factoring the needs of future people to a greater extent into the formulation of policy recommendations like stricter statutes regulating carbon emissions (OMB, 2023). Although the longtermism movement itself remains small at present, perhaps in part due to lay perceptions that the movement prioritizes the future *over* the present (MacAskill, 2022), the apparent popularity of related ideas suggests that not everyone may discount the needs of the future to the same extent as average trends in recent research suggest (masked for review).

Research employing the Longtermism Beliefs Scale (LBS), designed to gauge alignment with longtermism philosophy, has empirically identified that a significant portion of the

population (23.5%) endorses its fundamental principles (Syropoulos & Law et al., 2023). These studies classified as longtermists those scoring highly (75 or more out of 100) on the scale's items for close and distant future timeframes alike, perhaps providing a more accurate glimpse into the longtermism *ideology's* prevalence compared to assessing only the *movement's* size, which might underestimate its popularity. In studies using the LBS (Syropoulos & Law et al., 2023), longtermists display stronger future-oriented attitudes than controls, scoring notably higher in legacy motivation, future consequence awareness, future self-continuity, effective altruism beliefs, and utilitarianism.

While the LBS captures longtermism principles like intergenerational cooperation, future efficacy, and extinction threat prevention, it critically doesn't assess moral rights ascribed to future generations. Indeed, longtermism beliefs as a construct differs from the subjective moral standing of future generations, as the LBS focuses principally on practical future-oriented influence, lacking a means to capture ethical reflections on future individuals' intrinsic value. The LBS only shows small-to-moderate associations with moral circles (MES, masked), further highlighting their distinct natures in reflecting the intricacies of long-term ethical considerations. A critical yet unexplored question is whether longtermists show diminished moral concern for distant future generations like the general population (masked for review), or whether they possess more inclusive intergenerational moral circles. Perhaps even more intriguing is whether longtermists, compared to the general population, show lesser moral concern for present generations, in line with common critiques of the movement, or if they instead possess a sense of moral regard that expands impartially across temporal and social boundaries alike.

No published study definitively links longtermism beliefs to the scope of one's moral concern, but such a relationship is likely. Longtermism, in principle, promotes extending equivalent regard to present and future individuals. Thus, if the LBS accurately captures

longtermism beliefs, longtermists identified using the scale should extend moral considerations not only to distant-future generations, but the present generation as well. Additionally, research shows Giving What We Can Pledge takers – vowing to donate at least 10% of their income to endorsed charitable causes within the effective altruism movement – often have broader moral circles encompassing distant individuals (Wilks et al., 2023). While not all effective altruists are longtermists, those inclined toward long term thinking might naturally possess moral considerations inclusive of temporally and socially-distant others alike, given (1) substantial overlap in the processing mechanisms for social and temporal distance (Gilead et al., 2020; Hill et al., 2017; Soutschek et al., 2016; Tuen et al., 2023) and (2) the common followership between the two movements (Caviola, 2022; MacAskill, 2022; Singer, 2015).

Investigating whether longtermists deviate from the common trend of diminishing moral consideration for socially and temporally distant individuals holds substantial promise for scientific and philosophical exploration. It could bolster the LBS's convergent validity (Syropoulos & Law et al., 2023), affirming its predictive ability aligned with longtermism principles. Additionally, it may reveal that longtermists do not exhibit reduced moral regard for present entities compared to non-longtermists, challenging prominent criticisms of the philosophy (e.g., MacAskill, 2022). Furthermore, if longtermists demonstrate greater moral concern for both future and present generations than members of the general population, especially for socially-distant entities (e.g., outgroups, nature), it suggests they possess a unique capacity to extend moral regard across both the temporal *and* social dimensions of psychological distance. Most importantly, linking longtermism beliefs to ethical regard for present and future generations could provide practical insights for enhancing humanity's well-being in both the present and future, given the consistent link between moral circle expansion and pro-social attitudes (e.g., Crimston et al., 2016).



### **Potential Mediators of the Relationship Between Longtermism Beliefs and Moral Regard**

If empirical identification as a longtermist indeed aligns with heightened moral consideration for both current and future generations across different levels of social distance, several relevant variables may help elucidate this connection. Numerous factors have demonstrated links with moral circles across social distance, encompassing mind perception, dehumanization, perspective-taking, utilitarianism, identification with humanity, and stereotyping tendencies (Crimston et al., 2016, 2018a, 2018b; Fowler et al., 2021; Law et al., 2022; Wilks et al., 2023). Since individual differences in these attitudes consistently predict moral circle size concerning social distance, they may also contribute to explaining variations in moral consideration for future generations across various temporal intervals. If these factors indeed exhibit associations with longtermism beliefs, this could suggest an enhanced ability of longtermists compared to the general population in extending moral regard across diverse aspects of psychological distance.

Furthermore, feelings of personal moral obligation to future generations (Syropoulos et al., 2020; Syropoulos & Markowitz, 2021) and adherence to effective altruism beliefs (Caviola et al., 2022) predict future-oriented generosity, concern, longtermism beliefs, and the subjective moral standing of future generations (Law et al., 2023). These variables may therefore elucidate the connection between longtermism beliefs and the size of one's moral circle across temporal and social dimensions. Additionally, the longtermism philosophy inherently embodies a sense of optimism that positive change for the future can be achieved through present-day actions (MacAskill, 2022; Ord, 2020). Conceptually linked to future-oriented optimism is utopian thinking, characterized by contemplation of an ideal society. Research has shown that utopian thinking predicts greater societal engagement and favorable attitudes towards societal improvement (Fernando et al., 2018). Hence, it's plausible that longtermists, who believe in

averting existential threats through present actions, engage in more utopian thinking about the future of society, thereby holding future generations in high regard.

### **Overview of Current Studies**

The current research has two primary objectives. Firstly, it systematically examines whether individuals identified as longtermists extend greater moral consideration to future generations compared to non-longtermist controls. In Supplemental Study 1 (Study S1), through reanalyzing data from a separate project (masked for review), we find preliminary evidence supporting this trend across levels of social distance on the Moral Expansiveness Scale (MES). Studies 1 and 2 replicate these effects in well-powered, pre-registered studies, demonstrating that the effects persist when participants consider future generations generally at different future timepoints (Study 1) and when participants individually consider each entity on the MES at various future timepoints (Study 2). These findings indicate the robustness of the effect across varied levels of social distance. Building on these results, Study 3A shows evidence that a multitude of cognitive, affective and social phenomena support these robust patterns and suggest a potential mediating role of moral obligation and identification with all of humanity in the relationship between longtermism beliefs and moral consideration. Study 3B acts as a pre-registered replication of these findings. Finally, in Study 4, we rule out alternative future-oriented constructs in explaining these relationships, indicating that longtermism beliefs and the LBS offer unique predictive ability for expansive moral regard.

To empirically address criticisms suggesting longtermism prioritizes the future over the present and investigate whether longtermists exhibit broad moral regard across temporal and social dimensions of psychological distance, we compared the moral regard of longtermists and non-longtermists towards present generations at varying social distances. Our results indicate that longtermists extend greater overall moral regard, and moral regard specifically to socially-

distant present-day entities (Studies S1, 1, 2, 3B, and 4). Longtermists also exhibit reduced dehumanization and enhanced mind perception tendencies towards present-day social outgroup members, along with a stronger sense of identity with compatriots and community members (Studies 3a-3b). Moreover, longtermists display more expansive attitudes towards socially-distant entities, both in the present and the future. These findings challenge prominent criticisms of the longtermism movement (see MacAskill, 2022) and pivotally suggest that longtermism beliefs may serve as a tenable route towards the betterment of human welfare now and in the future, for socially-close and distant individuals.

All data files, materials and code for the studies is available on the Open Science Framework (OSF): [https://osf.io/ahzr4/?view\\_only=d11be94817ab4bae80b6e3da80998bfl](https://osf.io/ahzr4/?view_only=d11be94817ab4bae80b6e3da80998bfl).

**Table 1**

*Sample Information for All Studies*

Characteristic	Study 1	Study S1	Study 2	Study 3A	Study 3B	Study 4
N	693	200	682	521	1166	770
N <sub>longtermist</sub>	154	50	160	152	302	161
N <sub>man</sub>	344	115	330	253	578	378
N <sub>woman</sub>	339	82	341	251	563	371
N <sub>White</sub>	560	122	530	411	882	577
N <sub>Black/African American</sub>	83	39	69	66	176	103
N <sub>Asian</sub>	51	12	64	43	89	91
M <sub>age</sub>	42.60	39.70	39.62	39.93	39.43	37.19
(SD <sub>age</sub> )	(14.57)	(13.80)	(14.15)	(13.04)	(13.59)	(13.47)
Pre-registered	Yes	No	Yes	Yes	Yes	Yes

**Study 1**

Our first study examined whether people who are identified as longtermists using the LBS extend greater moral rights and worth to people living in the future and present. We hypothesized that longtermists would ascribe greater moral worth to people living in the future, regardless of how far into the future these people lived (H1). We also explored whether because

longtermists would extend greater moral worth to future people would potentially also result in them extending less moral worth to entities in the present. All aspects of the study (power analysis and sample size, measures, hypotheses and exploratory analyses) were pre-registered, [https://aspredicted.org/4MJ\\_TM2](https://aspredicted.org/4MJ_TM2).

## **Methods**

### ***Participants***

We collected data on Prolific. We sought to recruit a total of 700 participants. An additional seven participants completed the survey but did not submit their survey for payment, resulting in a sample of 707 participants. After removing participants who had a duplicate IP address and missed an attention check, 693 participants remained in the sample. The study lasted approximately 8 minutes, and participants received \$1.45 for their participation.

### ***Measures***

**Longtermism beliefs.** The longtermism beliefs scale (masked for review) was used to capture participants' endorsement of longtermist philosophy principles. This scale consists of 7 items (each shown 4 times; total of 28 responses), which participants are asked to answer for four different timeframes: 1000 years in the future, 10,000 years in the future, 100,000 years in the future and 1,000,000 years in the future. Participants are presented with each item in a randomized order and are tasked with responding for each timeframe simultaneously.

Responses are captured on a 0-100 slider scale. Longtermists are systematically identified as participants who score high on the scale for the shortest timeframe (which we set in our pre-registration as a score that is equal to or greater than 75) and have an equally high or higher score for future timeframes. The average score across all timeframes was close to the midpoint ( $M = 59.01$ ,  $SD = 26.55$ ,  $\alpha = .97$ ).

**Moral expansiveness.** The moral expansiveness scale (Crimston et al., 2016) was used to capture the attribution of moral concern to different entities. Individuals are given a brief explanation of the concept of moral circles and are then tasked with grouping different entities into one of four circles: outside the moral boundary (= 0), fringes of moral concern (= 1), outer circle of moral concern (= 2), and inner circle of moral concern (= 3).

In total 30 entities were included. From these 30 entities, 3 focused on ingroup and family ( $M = 2.86$ ,  $SD = 0.73$ ,  $a = .71$ ), 3 on technology and AI ( $M = 0.44$ ,  $SD = 0.65$ ,  $a = .77$ ), 10 on nature and animals ( $M = 1.56$ ,  $SD = 0.73$ ,  $a = .95$ ), 10 on outgroup members ( $M = 1.57$ ,  $SD = 0.68$ ,  $a = .92$ ), and 4 on future people ( $M = 1.02$ ,  $SD = 0.78$ ,  $a = .89$ ). The items for future people were phrased as follows: “a person living 100/1,000/10,000/100,000 years from now”. The total across all items excluding future people is indicative of overall moral expansiveness ( $M = 1.59$ ,  $SD = 0.47$ ,  $a = .90$ ; e.g., Rottman et al., 2021).

## Results

### *Analysis Plan*

To test our main hypothesis, namely whether longtermists ascribe greater moral worth to people in the future no matter how far into the future they are, we conducted a 2x4 mixed ANOVA. In an additional pre-registered exploration, we examined the overall and relative moral expansiveness of longtermists compared to non-longtermists, for which we hypothesized that longtermists, due to their expanded moral circle which would include people living in the future, would also be more morally expansive in general, and for outgroups and natural entities.

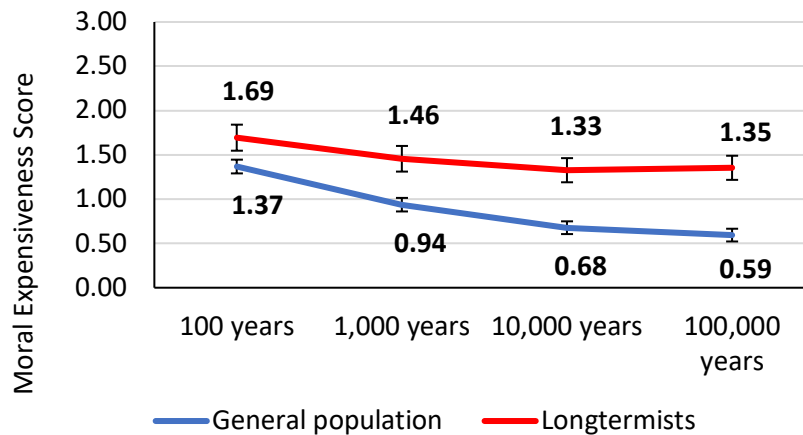
### *Moral Expansiveness for Future People*

We conducted a 2 (longtermism; between-subjects: longtermists vs. general population) x 4 (MES timeframe; within-subjects: 100 years, 1,000 years, 10,000, 100,000 years in the future) mixed ANOVA. A significant effect of timeframe ( $F(3, 2016) = 110.69$ ,  $p < .001$ ,  $\eta^2_p = .141$ ),

longtermism identification ( $F(1, 672) = 65.44, p < .001, \eta^2_p = .089$ ), and a significant longtermism\*timeframe interaction ( $F(3, 2016) = 14.62, p < .001, \eta^2_p = .021$ ), emerged. Decomposing this interaction suggested that the decrease across timeframes was larger for non-longtermists than longtermists, who scored significantly higher for each timeframe: person in 100 years ( $t = 3.84, p < .001, d = 0.36$ ); person in 1,000 years ( $t = 6.20, p < .001, d = 0.56$ ); person in 10,000 years ( $t = 8.26, p < .001, d = 0.73$ ); person in 100,000 years ( $t = 9.67, p < .001, d = 0.85$ ).

**Figure 1.**

*Line graph depicting scores for moral expansiveness for future people for longtermists and non-longtermists at four different timeframes. Error bars depict 95% C.I.*

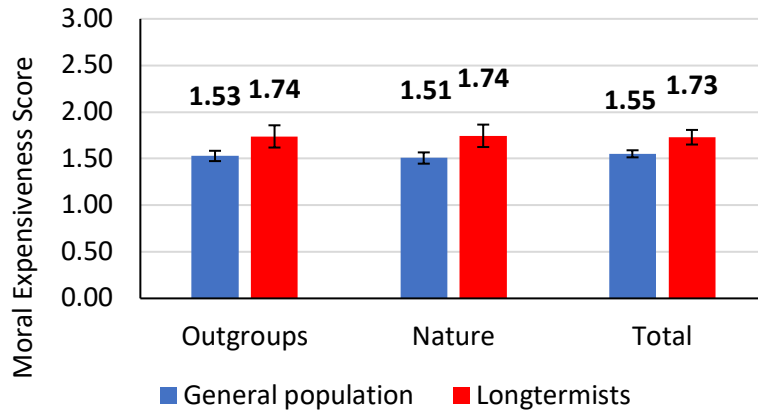


***Moral Expansiveness for Present Entities***

Supporting our pre-registered prediction, longtermists scored significantly higher on overall moral expansiveness ( $t(690) = 4.21, p < .001, d = 0.38$ ), moral expansiveness for outgroups ( $t(221.55) = 3.12, p = .002, d = 0.32$ ), and moral expansiveness for nature ( $t(687) = 3.59, p < .001, d = 0.32$ ).

**Figure 2.**

Bar graph depicting scores for longtermists and non-longtermists for overall and relative moral expansiveness. Error bars depict 95% C.I.



## Discussion

Supporting our pre-registered hypothesis, we found that longtermists ascribed greater moral worth to future generations, suggesting beliefs in line with the practical dimensions of influencing the future are associated with ethical reflections of the intrinsic worth of future people. This was the case regardless of how far in the future these hypothetical people existed. In fact, effect sizes increased for more distant timeframes, indicating that both longtermists and non-longtermists value near-future generations more similarly, but diverge with respect to more distal future generations.

In addition, contrary to established criticism of the longtermist philosophy, longtermists also had greater overall and relative moral expansiveness for outgroup and natural entities. Importantly, even for longtermists, future generations were ascribed less moral worth compared to outgroups and natural entities (see Supplementary Materials) suggesting that future people comprise a unique type of outgroup, one that is given less moral worth than groups that people tend to preferentially exclude from their moral circle (Rottman et al., 2021).

## Study 2

Our second study was a pre-registered attempt to conceptually replicate and expand on the findings of Study 1. We used the MES to determine whether longtermists extend greater moral worth to all future entities, and not just people, compared to non-longtermists. Doing so (i.e., using the moral expansiveness scale in multiple timeframes including the present) also gave us the ability to re-evaluate the finding that suggested that longtermists have a more expansive moral circle in general. All aspects of the study (power analysis and sample size, measures, hypotheses and exploratory analyses) were pre-registered, [https://aspredicted.org/blind.php?x=ZD9\\_2RQ](https://aspredicted.org/blind.php?x=ZD9_2RQ).

## **Methods**

### ***Participants***

We collected data on Prolific Academic. We sought to recruit a total of 700 participants. After removing participants who had a duplicate IP address<sup>1</sup> and missed an attention check, 682 participants remained in the sample. The study lasted approximately 12 minutes, and participants received \$2.20 for their participation.

### ***Measures***

**Longtermism beliefs.** The longtermism beliefs scale (masked for review) was again used to capture participants' endorsement of longtermist philosophy principles. The average score across all timeframes was close to the midpoint, albeit slightly higher than Study 1 ( $M = 62.01$ ,  $SD = 25.17$ ,  $\alpha = .96$ ).

**Moral expansiveness.** An adapted version of the moral expansiveness scale short form (MESx (short form); Crimston et al., 2018) was used to capture the attribution of moral concern to different entities across different timeframes. The scale included 10 entities and measured

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<sup>1</sup> Two participants had a duplicate IP address, but inspection of the demographic information suggested that they were different participants, and thus we opted to retain them in our analyses.



moral expansiveness towards these entities for the present ( $M = 1.83$ ,  $SD = 0.52$ ,  $a = 0.79$ ), 100 years in the future ( $M = 1.66$ ,  $SD = 0.61$ ,  $a = 0.85$ ), 1,000 years in the future ( $M = 1.52$ ,  $SD = 0.68$ ,  $a = 0.88$ ) and 10,000 years in the future ( $M = 1.37$ ,  $SD = 0.73$ ,  $a = 0.89$ ). Three items focused on revered persons and ingroup members (genetic relative, charity/aid worker, citizen of your country), four on nature (dolphin, old-growth forest, apple tree, fish), and three on outgroup members (mentally challenged individual, somebody with different religious beliefs, murderer). Given the smaller number of entities, we only examined overall levels of moral expansiveness.

## Results

### *Analysis Plan*

To test our main hypothesis, namely whether longtermists ascribe greater moral worth to future entities no matter how far into the future they are, we planned to conduct a 2x3 between-within-subjects ANOVA. Considering the results of Study 1, we amended our pre-registration prior to our analyses to reflect the observed significant difference in overall moral expansiveness in the present. Thus, we ran a 2x4 mixed ANOVA.

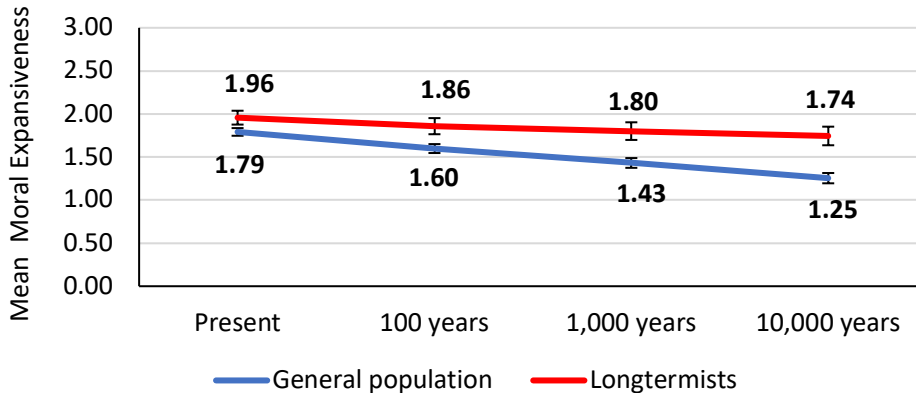
### *Differences in Moral Expansiveness Across Time*

We conducted a 2 (longtermism; between-subjects: longtermists vs. general population) x 4 (MESx timeframe; within-subjects: present day, 100 years, 1,000 years, 10,000 years in the future) mixed ANOVA. A significant effect of timeframe ( $F(3, 2040) = 119.88$ ,  $p < .001$ ,  $\eta^2_p = .150$ ), longtermism identification ( $F(1, 680) = 40.70$ ,  $p < .001$ ,  $\eta^2_p = .056$ ), and a significant longtermism by timeframe interaction ( $F(3, 2040) = 22.94$ ,  $p < .001$ ,  $\eta^2_p = .033$ ), emerged. Decomposing this interaction suggested that the decrease across timeframes was larger for non-longtermists than longtermists, who scored significantly higher for each timeframe: MES in the present ( $t(680) = 3.53$ ,  $p < .001$ ,  $d = 0.31$ ), MES in 100 years ( $t(680) = 4.77$ ,  $p < .001$ ,  $d = 0.43$ );

MES in 1,000 years ( $t(680) = 6.19, p < .001, d = 0.56$ ); MES in 10,000 years ( $t(680) = 7.78, p < .001, d = 0.73$ ).

**Figure 3.**

*Line graph depicting scores for total moral expansiveness for longtermists and non-longtermists at four different timeframes. Error bars depict 95% C.I.*



**Discussion**

Our second study conceptually replicated and extended the results of Study 1 in a pre-registered design and directly replicated the results of a secondary reanalysis of data which were obtained for a separate investigation (see Study S1 in SM). Specifically, we again observed that longtermists ascribed greater moral worth to entities in the future relative to non-longtermists, with the magnitude of this difference being larger for more distant timeframes. Importantly, this effect was observed for total moral expansiveness, including outgroups, entities in nature, and ingroup members. These findings build upon those from Study 1, which were limited solely to future people. Specifically, we demonstrated that longtermists ascribe greater moral worth not only to future entities than non-longtermists, but to present entities as well.

Crucially, critics of the longtermism philosophy regularly raise concerns that in prioritizing the future, longtermists tend to neglect present-day people and challenges (MacAskill, 2022). These findings, which replicate the findings of Study 1, suggest that such

concerns may be unfounded, as those who align with the longtermism philosophy morally prioritize present day entities to an even greater extent than those who do not.

### **Study 3A**

Our third study sought to examine potential underlying mechanisms (i.e., mediators) of the effect of longtermism on ascription of moral rights to future generations. We considered the following variables as mediators, since we considered that it is probable for longtermists to score higher on them, and since existing research suggests that they might be related to moral expansiveness (and thus also moral expansiveness for future people): expansive altruism, impartial beneficence, mind perception for future people, beliefs that future people can experience fear or pain (i.e., more humanization), (decreased) blatant dehumanization, perceived obligation to future people, identification with all of humanity, perspective taking, and greater utopian thinking. All aspects of the study (power analysis and sample size, measures, hypotheses and exploratory analyses) were pre-registered, [https://aspredicted.org/5M3\\_7SV](https://aspredicted.org/5M3_7SV).

### **Methods**

We collected data on Academic Prolific. We sought to recruit a total of 550 participants and received complete responses from 541. After removing participants who had a duplicate IP address ( $N = 4$ ) and missed an attention check ( $N = 15$ ), 531 participants remained in the sample. The study lasted approximately 20 minutes, and participants received \$4.00 for their participation.

### **Measures**

Longtermism beliefs and moral expansiveness were identical to Study 1. The measures listed below were included as potential mediators.

**Expansive altruism.** Six items from the Expansive Altruism Scale (Caviola et al., 2022), on a 7-point Likert scale (1 = strongly disagree – 7 = strongly agree) were used to measure endorsement of effective altruism principles.

**Impartial beneficence.** Five items from the Impartial Beneficence subscale of the Oxford Utilitarianism Scale (Kahane et al., 2018) on a 7-point Likert scale (1 = strongly disagree – 7 = strongly agree) were used to capture lack of bias in helping others.

**Perspective taking.** We measured participants' ability to perspective take with 7 items from the Perspective Taking subscale of the Interpersonal Reactivity Index (Davis, 1983), on a 7-point Likert scale (1 = strongly disagree – 7 = strongly agree).

**Obligation to future people.** Four items, generated by the research team (one per future person, i.e., 1,000 years, 10,000 years, 100,000 years, and 1,000,000 years in the future) on a scale from 0-100 were used to capture to what extent participants personally felt a moral obligation to help or protect people in future generations, even when that means making some sacrifices today.

**Utopian thinking.** We measured participants' tendency to think and visualize utopias with 8 items from Fernando et al. (2018) on a 7-point Likert scale.

**Identification with all of humanity.** A total of 9 items from the Identification with all Humanity Scale (McFarland et al., 2012) were used. These items were shown 3 times, each focusing on: (a) other people in one's community, (b) other Americans, and (c) people all over the world. Responses were captured on a 1-5 Likert-type scale.

**Mind perception.** We adapted the Measure of Mind Attribution (Rottman et al., 2021) to capture self-reports of mind attribution to outgroups (13 items) and future people (7 items). Responses were captured on a 7-point Likert scale (1 = strongly disagree – 7 = strongly agree).

**Dehumanization of future people.** Participants answered how future people in each of the four timeframes could (a) be capable of feeling fear, and (b) be capable of feeling pain. All items were captured on 1-6 Likert-type scales. Importantly, these measures were highly correlated with each other ( $r = .92, p < .001$ ) and were subsequently averaged into a single construct capturing how much participants thought future people possess the ability to feel human experiences.

**Blatant dehumanization.** We used the Ascent of Man Scale (Kteily & Bruneau, 2017), with four items matching the future people items from the MES, three items focusing on neutral groups (Europeans, Japanese, Australians) and three on outgroups (Muslims, Mexican immigrants, ISIS members), with responses captured on a 0-100 slider scales.

## Results

Descriptive statistics, reliability estimates, and correlations between longtermism beliefs, moral expansiveness to future people, and total moral expansiveness are presented in Table 2. Overall, impartial beneficence, expansive altruism, obligation to future generations, utopian thinking, identification with all of humanity, and perceiving future generations as human related to both increased longtermism and moral expansiveness for future people.

**Table 2**

*Means, standard deviations, Cronbach's alpha and correlation coefficients for Study 3A*

Variable	M	SD	$\alpha$	Correlation with		
				Longtermism	MES Future People	MES Total
Humanization of future people (AofM)	91.57	17.55	0.94	<b>0.14**</b>	0.00	0.06
Mind Perception for Future People	6.12	1.04	0.96	<b>0.18***</b>	<b>0.09*</b>	0.03
Impartial Beneficence	3.63	1.35	0.83	<b>0.33***</b>	<b>0.25***</b>	<b>0.19***</b>
Expansive Altruism	4.84	1.12	0.82	<b>0.39***</b>	<b>0.24***</b>	<b>0.29***</b>
Obligation to future generations	39.31	32.66	0.96	<b>0.52***</b>	<b>0.43***</b>	<b>0.16***</b>
Utopian Thinking	4.86	1.06	0.84	<b>0.28***</b>	<b>0.12**</b>	<b>0.19***</b>
Identification with all of humanity	3.23	0.80	0.90	<b>0.34***</b>	<b>0.31***</b>	<b>0.33***</b>
Perspective Taking	5.25	0.88	0.82	<b>0.19***</b>	0.03	<b>0.16***</b>

Future people can have human experiences	5.00	1.44	0.98	<b>0.19***</b>	<b>0.12**</b>	<b>0.10*</b>
Longtermism	63.83	26.05	0.96	--	--	--
MES Future	0.92	0.81	0.92	<b>0.32***</b>	--	--
MES Total	1.61	0.47	0.91	<b>0.14**</b>	<b>0.40***</b>	--

**Note.** \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . AofM = Ascent of Man.

### *Differences Between Longtermists and General Population*

For every single mediator, longtermists scored significantly higher relative to the general population, with effect sizes ranging from  $d = 0.24$  to  $d = 0.86$  (see Table 3). Longtermists also allocated greater moral worth to future people, replicating the results of Study 1. These results suggests that longtermists are more likely to humanize future people, feel obligated to protect them, express less bias in their beliefs about helping others, identify with all of humanity more, engage in more perspective taking, and more utopian thinking.

**Table 3**

*Means, standard deviations, t-tests and effect sizes, sorted from smallest to largest, for longtermists and the general population for outcomes relevant to future people*

Variable	Longtermists		General population		t-test	Cohen's $d$
	M	SD	M	SD		
Perspective Taking	5.40	0.80	5.19	0.91	$t(519) = 2.53^*$	0.24
Humanization of future people	94.89	14.72	90.21	18.40	$t(346.51) = 3.04^{**}$	0.28
Future people can have human experiences	5.27	1.32	4.88	1.47	$t(519) = 2.82^{**}$	0.28
Utopian Thinking	5.14	1.03	4.74	1.06	$t(519) = 3.91^{***}$	0.38
Mind Perception for Future People	6.40	0.84	6.00	1.09	$t(519) = 4.00^{***}$	0.41
Impartial Beneficence	4.07	1.36	3.44	1.30	$t(519) = 4.98^{***}$	0.47
Identification with all of humanity	3.52	0.82	3.11	0.76	$t(519) = 5.38^{***}$	0.51
Expansive Altruism	5.28	1.09	4.66	1.08	$t(519) = 5.88^{***}$	0.57
MES Future	1.24	0.91	0.78	0.72	$t(231.56) = 5.56^{***}$	0.57
Obligation to future generations	58.67	35.17	31.33	27.84	$t(519) = 9.39^{***}$	0.86
Longtermism	93.33	6.22	51.67	20.87	$t(488.44) = 34.79^{***}$	2.70

**Note.** \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . AofM = Ascent of Man.

### *Indirect Effects*

We deviated from our pre-registered protocol for the mediation tests. Instead of using the longtermism beliefs scale as a continuous predictor, we used the binary variable indicating

whether a person was identified as a longtermist as the predictor. We were not expecting to necessarily have enough power to detect effects for all mediators, but our results suggest that all mediators were higher for longtermists (see Table 3). Thus, this variable was the predictor (X), each proposed mediator was inserted as a mediating variable in the model (M), and moral expansiveness to future people was the outcome (Y). We used the PROCESS Macro (Hayes, 2013) with 10,000 bootstrapped samples. In particular, we used Model 4 (serial mediation). We first estimated models separately for each specific mediator (see Table S5 in the Supplementary Materials). If a mediator had a significant effect, then we included it in a second model as a parallel mediator, controlling for other significant mediators. In this model, only identification with all of humanity and obligation to future generations emerged as significant mediators (see Table 4). Importantly the effect of being a longtermist on moral expansiveness for future people also remained significant ( $b = 0.16$ , 95% C.I. [0.01, 0.31]).

**Table 4.**

*Mediation models estimated with PROCESS Macro, Model 4, with 10,000 bootstrapped samples with all mediators inserted as parallel mediators.*

Mediator	X → M	M → Y	Indirect effect
	<i>b</i> [95% C.I.]	<i>b</i> [95% C.I.]	<i>b</i> [95% C.I.]
Impartial Beneficence	0.63 [0.38, 0.88]	0.04 [-0.02, 0.10]	0.03 [-0.02, 0.08]
Expansive Altruism	0.61 [0.41, 0.81]	0.13 [0.07, 0.19]	0.01 [-0.06, 0.04]
<b>Obligation to future generations</b>	<b>27.37</b> <b>[21.62, 33.11]</b>	<b>0.01</b> <b>[0.01, 0.01]</b>	<b>0.21</b> <b>[0.13, 0.30]</b>
<b>Identification with all of humanity</b>	<b>0.41</b> <b>[0.26, 0.55]</b>	<b>0.14</b> <b>[0.05, 0.24]</b>	<b>0.06</b> <b>[0.01, 0.11]</b>
Future people can have human experiences	0.39 [0.12, 0.66]	0.03 [-0.01, 0.08]	0.01 [-0.01, 0.03]

**Note.** Bolded results indicate significant findings.

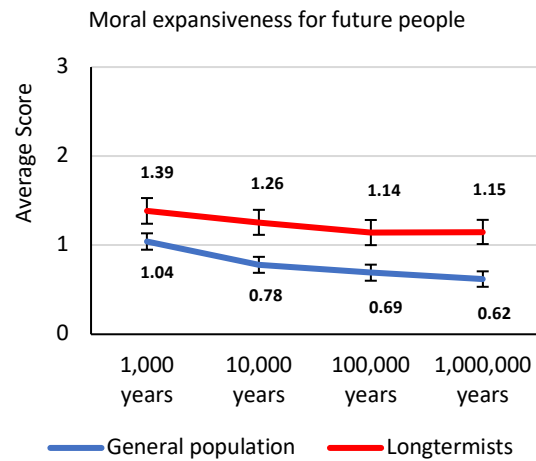
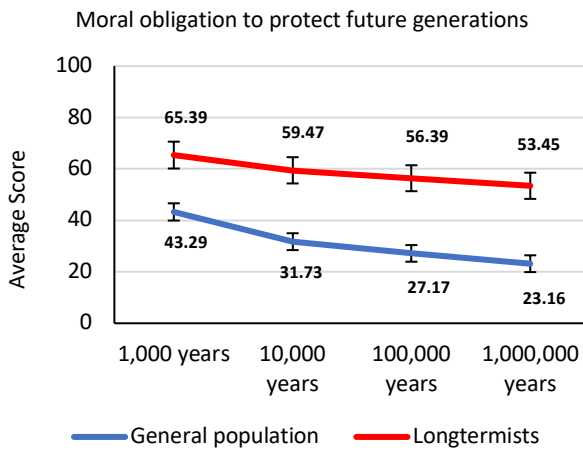
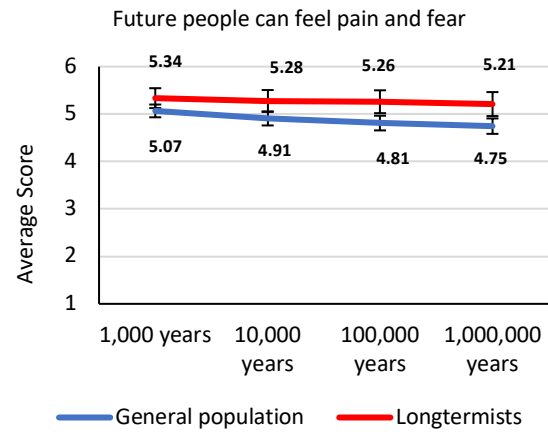
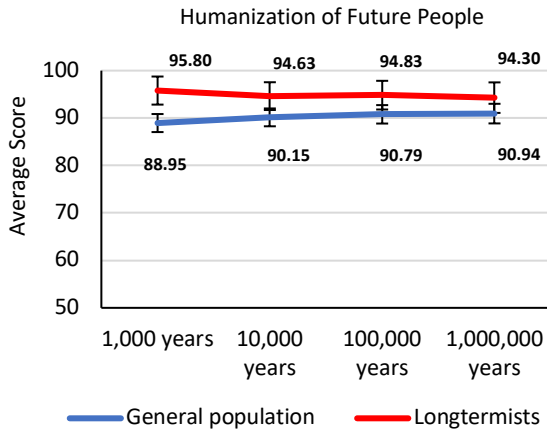
*Exploratory Analyses: Longtermists' Attitudes towards Future Generations Across Outcomes and Time*

Although not pre-registered, our design gave us the ability to examine whether longtermists care equally for future people regardless of their timeframe, whether this is unique to them and not the general population, and whether this extends to how obligated they feel to help future people, how much they think future people can experience human experiences, and how much they humanize future people. Thus, we ran four 2x4 mixed ANOVAs (one per outcome) similar Studies 1-2. Our results replicated and extended the findings of our previous studies, as a significant timeframe\*longtermist identity interaction emerged, suggesting that longtermists scored higher regardless of how distal the timeframe, while the general population on average scored lower, and had decreased scores for more distal versus proximal timeframes (see Figure 4). This was true in all cases except for humanization (Ascent of Man measure), in which case longtermists scored higher than the general population, but the general population had a slight increase across time, but still scored lower than longtermists. Detailed results are reported in Table S6 in the Supplementary Materials.

**Figure 4.**

*Line graphs depicting scores for moral expansiveness for future people for longtermists and non-longtermists at four different timeframes for all relevant outcomes. Error bars depict 95% C.I.*





**Effects on Present Outcomes**

Longtermists did not significantly differ from the general population in overall and relative moral expansiveness, failing to replicate the results of study 1. Importantly, even if this finding failed to replicate, results were in the hypothesized direction. However, longtermists did score significantly higher in humanization of and mind perception for outgroups, as well as the degree to which they identified with all Americans and other members in their community (see Table 5).

**Table 5.**

*Means, standard deviations, t-tests and effect sizes, sorted from smallest to largest, for longtermists and the general population for present outcomes*

Outcome	Longtermists		General population		t-test	Cohen's d
	M	SD	M	SD		
MES Total	1.65	0.48	1.59	0.46	t(519) = 1.24	0.12
MES Nature	1.60	0.78	1.51	0.70	t(519) = 1.24	0.12
MES outgroups	1.69	0.67	1.61	0.64	t(519) = 1.31	0.13
Humanization of outgroups	86.14	19.26	80.39	23.65	t(343.03) = 2.89**	0.27
Mind perception for outgroups	6.46	0.63	6.27	0.77	t(341.62) = 3.02**	0.28
Identification with all Americans	3.46	0.89	3.20	0.80	t(519) = 3.17**	0.30
Identification with community	3.62	0.89	3.33	0.85	t(519) = 3.48***	0.30

### Study 3B

Study 3B was a pre-registered direct replication of Study 3A in a larger and highly-powered sample. Importantly, we retained only the two significant mediators from Study 3A (identification with all of humanity and moral obligation). All aspects of the study (power analysis and sample size, measures, hypotheses and exploratory analyses) were pre-registered, [https://aspredicted.org/5YB\\_WB3](https://aspredicted.org/5YB_WB3).

### Methods

#### *Participants*

We collected data on Prolific Academic. We recruited a total of 1200 participants. After removing participants who had a duplicate IP address ( $N = 7$ ) and missed an attention check ( $N = 27$ ), 1166 participants remained in the sample. The study lasted approximately 12 minutes, and participants received \$2.20 for their participation.

#### *Measures*

The following measures were included, shown to participants in a randomized order, and were identical to Study 3A: longtermism beliefs ( $\alpha = 0.97$ ), overall moral expansiveness ( $\alpha =$

0.91), moral expansiveness for outgroups ( $a = 0.92$ ), nature entities ( $a = 0.95$ ), future people ( $a = 0.93$ ), moral obligation to future people ( $a = 0.96$ ), identification with all of humanity ( $a = 0.92$ ), other Americans ( $a = 0.92$ ), and community members ( $a = 0.93$ ).

## Results

### *Differences Between Longtermists and General Population*

For every single outcome, longtermists scored significantly higher relative to the general population, with effect sizes ranging from  $d = 0.34$  to  $d = 1.46$  (see Table 6). Importantly, we replicated our previous finding from Studies 1, 2 and S1, suggesting that longtermists have higher overall and relative moral expansiveness for present entities.

**Table 6**

*Means, standard deviations, t-tests and effect sizes, for all outcomes*

Variable	Longtermists		General population		t-test	Cohen's $d$
	M	SD	M	SD		
<b><i>Main Outcomes</i></b>						
Identification with all of humanity	3.67	0.76	3.03	0.79	$t(1164) = 12.08^{***}$	0.82
MES Future	1.52	0.89	0.73	0.70	$t(435.44) = 13.95^{***}$	0.99
Obligation to future generations	71.08	30.72	29.00	26.65	$t(468.89) = 21.18^{***}$	1.46
Longtermism	93.39	6.55	49.57	22.73	$t(1137.9) = 50.93^{***}$	2.62
<b><i>Present Outcomes</i></b>						
Identification with Americans	3.52	0.89	3.16	0.82	$t(1164) = 6.55^{***}$	0.43
Identification with community	3.74	0.85	3.36	0.84	$t(1164) = 6.63^{***}$	0.44
MES Total	1.80	0.51	1.57	0.44	$t(469.68) = 6.97^{***}$	0.48
MES Outgroups	1.78	0.71	1.54	0.64	$t(481.22) = 5.00^{***}$	0.34
MES Nature	1.86	0.75	1.51	0.69	$t(1156) = 7.21^{***}$	0.49

**Note.** \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Tests with degrees of freedom that include a number with a decimal were estimated with a Satterthwaite Method to account for unequal variances.

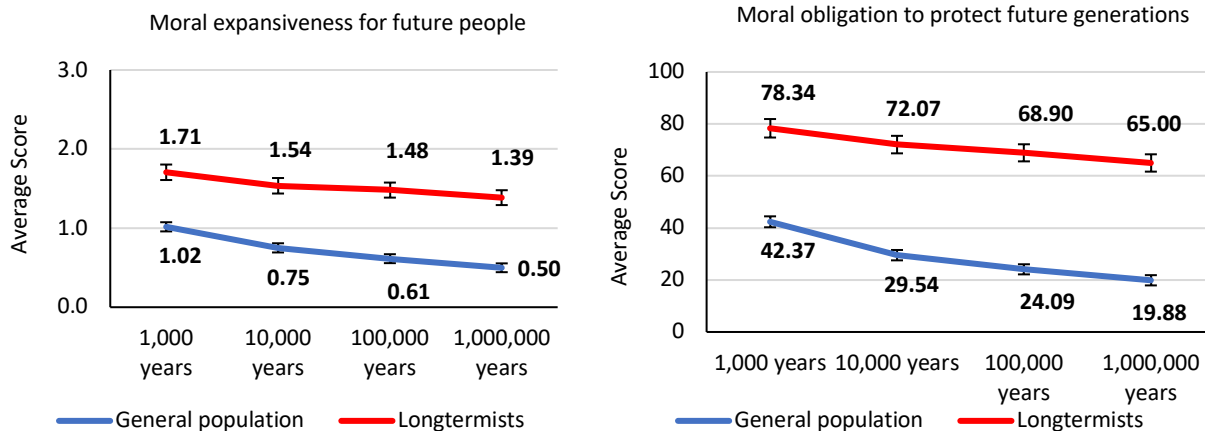
### *Longtermists' Attitudes towards Future Generations Across Outcomes and Time*

We estimated two 2x4 mixed ANOVAs (one per outcome) to examine differences within and across all timeframes for moral expansiveness and moral obligation. Our results replicated and extended the findings of our previous studies, as a significant timeframe\*longtermist identity interaction emerged, suggesting that longtermists scored higher, and consistently so across time,

while the general population on average scored lower, and had decreased scores across time (see Figure 5). Detailed results are reported in Table S6 in the Supplementary Materials.

### Figure 5.

*Line graphs depicting scores for moral expansiveness for future people for longtermists and non-longtermists at four different timeframes. Error bars depict 95% C.I.*

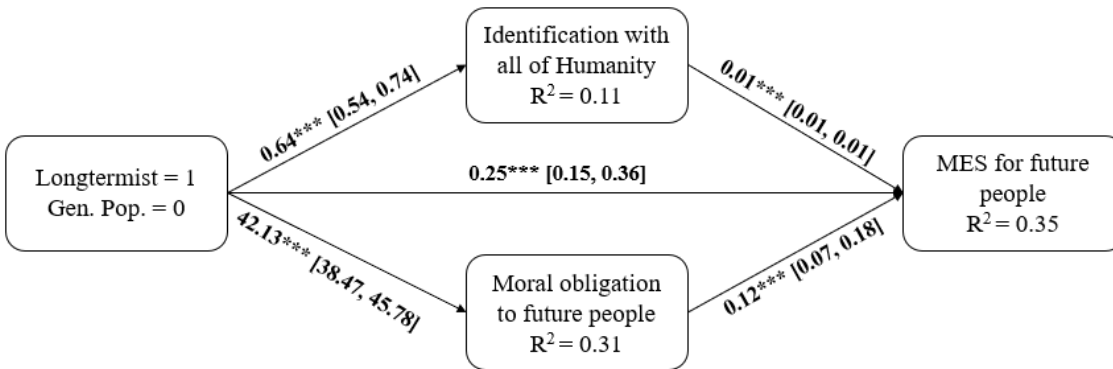


### Indirect Effects

Using the PROCESS Macro with 10,000 bootstrapped samples we estimated a mediation model in which being a longtermist (dummy-coded variable) was the predictor, identification with all of humanity and moral obligation were parallel mediators, and moral expansiveness for future people was the outcome. Significant indirect effects through both moral obligation ( $b = 0.46$ , 95% C.I. [0.38, 0.58]) and identification with all of humanity ( $b = 0.08$ , 95% C.I. [0.04, 0.12]) were noted, supporting our pre-registered hypothesis. Importantly the effect of being a longtermist on moral expansiveness for future people also remained significant.

**Figure 6.**

*Pre-registered mediation model with unstandardized regression weights and 95% C.I.*



**Note.** \*\*\* $p < .001$ .

## Discussion

Studies 3A-3B conceptually replicated and extended the results of our previous studies. In Study 3A we again found that longtermists ascribed greater moral regard to people in the future, and did so more consistently relative to non-longtermists, with the magnitude of this difference being larger for more distant timeframes. Importantly, we extended this effect to the tendency to dehumanize future people, mind perception tendencies, and perception of future people as capable of having human experiences, and to feelings of moral responsibility for protecting future people. Through two sets of mediation analyses, an exploratory (Study 3A) and a confirmatory (Study 3B) we observed that moral obligation for protecting future people and identification with all of humanity partially explained the effect of longtermism on moral expansiveness to future people.

Once again, contrary to popular belief that longtermists are only looking into the future, often at the expense of the present, longtermists scored significantly higher on a host of individual differences that relate to moral expansiveness for present and future entities, and, in one of the two studies, scored higher on overall, and relative (to outgroups and nature) moral

expansiveness. In detail, they were significantly higher on impartial beneficence, expansive altruism, utopian thinking, identification with their community, other Americans, all of humanity, humanization of outgroups, and mind perception for outgroups. Thus, aside from extending greater moral worth to present entities relative to the general population, longtermists also hold more prosocial attitudes and perceptions of outgroups.

#### **Study 4**

In our final study, we sought to eliminate any potential alternative explanations for the effect of longtermism on moral expansiveness. We reasoned, that it's possible that a general ability to think about the future outcomes of one's actions (Consideration of Future Consequences, CFC: Strathman et al., 1994), a broader orientation towards the future (Long Term Orientation, LTO; ), and a better ability to postpone present rewards to maximize future rewards (i.e., lower delay discounting, DD: ) could explain the effect. To that end, we compared longtermists to the general population while controlling for all these variables. All aspects of the study (power analysis and sample size, measures, hypotheses and exploratory analyses) were pre-registered, [https://aspredicted.org/9V1\\_X61](https://aspredicted.org/9V1_X61).

#### **Methods**

##### ***Participants***

We collected data on Prolific. Per our pre-registration we sought to recruit a total of 800 participants. After removing participants who had a duplicate IP address and missed an attention check, 770 participants remained in the sample. The study lasted approximately 12 minutes, and participants received \$2.00 for their participation.

##### ***Measures***

**Longtermism beliefs.** The longtermism beliefs scale (masked for review) was again used to capture participants' endorsement of longtermist philosophy principles. The average score across all timeframes was close to the midpoint, albeit slightly higher than Study 1 ( $\alpha = .96$ ).

**Moral expansiveness.** An adapted version of the moral expansiveness scale short form (MESx (short form); Crimston et al., 2018) was used to capture the attribution of moral concern to different entities across different timeframes. The scale included 10 entities and measured moral expansiveness towards these entities for the present ( $\alpha = 0.78$ ), and four items capturing moral expansiveness for future people living 1,000, 10,000, 100,000 and 1,000,000 years in the future ( $\alpha = 0.90$ ).

**Long term orientation.** LTO was measured as the average of 4 items, on 7-point Likert scale ( $\alpha = 0.85$ ), developed by Bearden et al. (2006).

**Consideration of future consequences.** CFC was measured as the average score of 12 items, on 7-point Likert scale ( $\alpha = 0.84$ ), developed by Strathman et al. (1994).

**Delay Discounting.** DD was measured by calculating participants' impulsive choice rates (ICRs) on the Delay Discounting Task from Tuen and colleagues (2023), which was adapted from the Monetary Choice Questionnaire (Kirby et al., 1999). ICR was calculated based on decisions made for 27 trials where participants will be asked to choose whether they would prefer a smaller reward now versus a larger reward at a point in the future (ranging from 1 week to 12 weeks). Specifically, the number of choices each participant made to accept a smaller reward now (the number of impulsive choices) was divided by the total number of choices on the task to yield an ICR for each participant. Hence, higher ICR scores were interpreted to signify a greater tendency to discount the subjective value of future relative to current rewards.

## Results

We compared longtermists ( $N = 160$ ) to the general population ( $609$ ) on their moral expansiveness to present entities and future people. Longtermists scored significantly higher for both moral expansiveness to present entities ( $t(767) = 4.57, p < .001, d = 0.40$ ), and to future people ( $t(227.90) = 7.94, p < .001, d = 0.73$ ) compared to the general population.<sup>2</sup> In fact, replicating the results of our previous studies, the tendency to extend greater moral worth to future people was found to be robust across distances in the future (see Supplementary Materials). Importantly, these effects remained significant after controlling for LTO, CFC, and DD, with longtermism being the sole significant predictor of moral expansiveness for present entities, and the strongest predictor of moral expansiveness for future people (see Table 7).

**Table 7.**

*Pre-registered linear regression models predicting moral expansiveness*

MES for Future people ( $R^2 = 0.10$ )	$\beta$	SE	p	b	Lower 95% C.I.	Upper 95% C.I.
<b>Being a longtermist</b>	<b>0.30</b>	<b>0.07</b>	<b>&lt;.001</b>	<b>0.56</b>	<b>0.43</b>	<b>0.69</b>
LTO	0.03	0.03	.414	0.02	-0.03	0.08
CFC	-0.03	0.04	.420	-0.03	-0.10	0.04
<b>DD</b>	<b>-0.09</b>	<b>0.12</b>	<b>.010</b>	<b>-0.32</b>	<b>-0.56</b>	<b>-0.08</b>
MES for present entities ( $R^2 = 0.03$ )	$\beta$	SE	p	b	Lower 95% C.I.	Upper 95% C.I.
<b>Being a longtermist</b>	<b>0.14</b>	<b>0.04</b>	<b>&lt;.001</b>	<b>0.17</b>	<b>0.08</b>	<b>0.25</b>
LTO	0.03	0.02	.438	0.01	-0.02	0.05
CFC	0.08	0.02	.062	0.04	0.00	0.09
DD	0.00	0.08	.957	0.00	-0.16	0.15

<sup>2</sup> Longtermists (LTO:  $M = 5.69, SD = 1.00$ ; CFC:  $M = 5.08, SD = 0.90$ ; DD:  $M = 0.51, SD = 0.24$ ) also scored significantly higher in LTO ( $t(768) = 3.51, p < .001, d = 0.31$ ) and CFC ( $t(768) = 5.82, p < .001, d = 0.50$ ) but not DD ( $t(768) = 0.74, p = .457$ ) compared to the general population (LTO:  $M = 5.37, SD = 1.06$ ; CFC:  $M = 4.65, SD = 0.84$ ; DD:  $M = 0.53, SD = 0.21$ ).



## **Discussion**

Results from our final study demonstrated that the effect of longtermism on moral expansiveness, for both present and future targets is robust, and not explained by a person's ability to think about the future outcomes of their actions (CFC), their tendency to be more future oriented (LTO) or their ability to delay receiving rewards (DD). Thus, we conclude that longtermists extend greater moral worth to people (and entities more broadly) living in the present or future, due to a unique contribution of the longtermist philosophy, and not a general future-oriented orientation.

### **Internal Meta Analysis of Present and Future Moral Expansiveness**

Utilizing the methodology developed by Goh and colleagues (2016), we conducted an internal meta-analysis of the overall tendency to extend moral worth to present and future entities. To do so, we examined overall moral expansiveness for present and future entities (measured in Studies 1, 2, S1, 3A, 3B, and 4). For future entities, we collapsed across all timeframes to estimate the average effect for each study. Results suggested that longtermists scored significantly higher on overall moral expansiveness to present entities ( $d = 0.37$ ,  $SE = 0.04$ ,  $Z = 9.04$ ,  $p < .001$ , 95% C.I. [0.29, 0.45]), and future entities ( $d = 0.77$ ,  $SE = 0.04$ ,  $Z = 18.49$ ,  $p < .001$ , 95% C.I. [0.69, 0.85]) compared to the general population. Thus, across all six studies, longtermists consistently scored higher on moral expansiveness for present and future entities.

### **General Discussion**

The findings from the current research provide intriguing insights into the moral perspectives of longtermists and how they view the moral standing of both future and current generations at varying levels of social distance. Perhaps not surprisingly, we show that alignment with longtermism beliefs predicts the ascription of greater ethical consideration of the inherent

moral value of future people. That is, longtermists identified by high scores across multiple timeframes on the LBS (Syropoulos & Law et al., 2023) exhibit a distinctive pattern of moral regard for future generations. Whereas the general population tends to hold future generations in progressively lower moral standing as they become more temporally remote (Law et al., 2023), empirically identified longtermists show attenuated contraction in their moral circles for distant future generations regardless of whether they consider them existing at proximal or distal future timeframes. This effect is consistent across a series of rigorous studies, including the supplemental reanalysis of existing project data (Study S1), and five highly-powered, pre-registered investigations (Studies 1-4) and an internal meta-analysis of our data (see above). Crucially, we eliminate the possibility that these patterns can be attributed to alternative future-oriented constructs such as delay discounting, consideration of future consequences, or long-term orientation, demonstrating that the LBS accounts for distinctive variance beyond these other variables (Study 4).

Perhaps even more compelling is that longtermists show elevated ascriptions of moral standing to future *and* present generations alike when compared to non-longtermist controls (Studies S1, 1, 2, 3B, 4, and an internal meta-analysis). Furthermore, longtermists similarly show attenuated dehumanization of and greater mind perception tendencies to attribute human-like qualities towards social outgroup members, as well as a greater sense of identity with their compatriots and community members (Studies 3a-3b). Critically, these findings suggest that longtermists not only emphasize *future* entities in their moral circles, but simultaneously uphold the moral value of *present-day* individuals. Further emphasizing longtermists' expansive moral circles, the elevated moral standing longtermists ascribe to both present and future generations is observed in the overall size of their moral circles, comprising the full range of entities included

on the MES (Crimston et al., 2016), and also in the relative size of their moral circles encompassing specifically socially-distant targets such as outgroups and entities in nature.

These intriguing findings strongly suggest that longtermists possess more expansive moral circles, encompassing both socially-close and distant individuals in the present and future, in contrast to the moral circles typically observed in the general population. This resilience of moral regard among longtermists transcends conventional boundaries imposed by psychological distance (see Construal Level Theory; Gilead et al., 2020), suggesting that individuals can extend their moral consideration beyond immediate proximity. Furthermore, these results build upon previous research that highlights the interconnected processing mechanisms that come into play when people contemplate information related to both social and temporal distance (e.g., Gilead et al., 2020; Hill et al., 2017; Soutschek et al., 2016; Tuen et al., 2023). Taken together, these findings suggest that longtermists may generally exhibit an enhanced capacity to transcend the boundaries that typically constrain human morality, prosocial attitudes, and intentionality (e.g., Crimston et al., 2016; 2018a; 2018b; Law et al., 2023; Waytz et al., 2017), with potential implications for promoting positive change across diverse domains of moral concern.

Additionally, the findings above help to dispel common criticisms of the longtermism social movement (e.g., Emba, 2022), which assert that longtermists' future-oriented prioritization leads to neglect of current societal issues. Rather than sidelining the challenges facing present generations, our results suggest that longtermists in fact prioritize ethical considerations of present-day concerns to a greater extent than members of the general population. Likewise, many of the challenges facing the future can also pose considerable risk to present-day humans (MacAskill et al., 2022). Thus, efforts to promote current and future welfare are not necessarily countervailing nor may be forces thought to expand and contract the moral circle across psychological distance (e.g., see Graham et al., 2017). Nonetheless, people often perceive

prosociality directed towards distant others (e.g., effective altruism) to be in direct competition with prosociality directed towards close others, at least in the context of social distance (e.g., Law et al., 2022; McManus et al., 2020, 2021; Everett et al., 2018). Furthermore, these studies show that socially-distant altruists are consequently perceived as less trustworthy social partners. An exciting question to address through future empirical investigations is whether people tend to make similar negative appraisals of longtermists and whether such appraisals can be challenged by presenting evidence regarding our findings that present- and future-oriented attitudes are not necessarily zero-sum tradeoffs in theory nor practice.

Moreover, the present findings build upon existing evidence speaking to the credibility of the LBS as a construct and convergently valid measure of longtermism beliefs that offers the power to predict relevant future-oriented phenomena. Whereas prior work has already shown this instrument to predict a host of future-oriented attitudes and behaviors (e.g., legacy-related motivation, consideration for the future consequences of behavior; Syropoulos & Law et al., 2023), the present studies are the first to link longtermism beliefs to the subjective moral standing of future generations, and the current generation as well, yet another outcome central to the foundational principles of the longtermism philosophy, which advocates in principle for extending equal moral regard to future and present generations alike (MacAskill, 2022; Ord, 2020). Importantly, however, these findings have profound implications, not only by extending theoretical knowledge related to longtermism beliefs and the manner in which people evaluate the moral worthiness of future and present generations (e.g., Law et al., 2023; Syropoulos & Law et al., 2023), but also for efforts to safeguard the long-term future of humanity from existential threats advanced in philosophy (MacAskill, 2022; Ord, 2020), the natural sciences (Blaser, 2018; Taylor et al., 2012) and public policy (Bose & Shepardson, 2023; OMB, 2023).

Although not directly examined, the remarkably high prevalence of longtermism beliefs uncovered in this research offers hope that endeavors aimed at safeguarding humanity from early extinction through individual and collective future-oriented actions may indeed bear fruit. These findings align with other emerging research underscoring the profound influence of longtermism beliefs (Syropoulos & Law et al., 2023) and moral expansiveness (Law et al., 2023) on prosocial attitudes and intentions towards future generations. While the formal longtermism movement remains relatively small (MacAskill, 2022), and future generations are often marginalized in moral consideration, approximately 25 percent of participants in our studies endorsed the core principles of longtermism - prioritizing and recognizing the efficacy of present-day actions for the future - as measured by the LBS for both near and distant future targets. An important avenue for future research is to explore whether longtermism beliefs, mediated through the subjective moral standing of future generations, can predict future-oriented prosocial intentions and real-world engagement in future-oriented behaviors. Delving deeper into these inquiries and related questions has the potential to provide critical insights into moral future-oriented thinking, while also offering practical implications for promoting pro-future actions that not only secure the future but address pressing present-day challenges as well, as suggested by the current findings linking longtermism beliefs to an expansive regard for distant and close individuals in the here and now.

Yet another key finding the present research reveals is that longtermists exhibit a constellation of individual differences in cognitive, affective, and social phenomena associated with moral expansiveness, including impartial beneficence, expansive altruism, utopian thinking, and identification with all of humanity. Notably, moral obligation and identification with all of humanity emerge as key factors mediating the link between longtermism and heightened moral expansiveness. Future research might seek to explore the dynamic interplay between these

various attributes and future-oriented prosocial action. For instance, the association found between utopian thinking and longtermism beliefs could have profound implications regarding the impact of valenced narrative descriptions of the future featured in popular media (e.g., news articles), fiction literature (e.g., science fiction), and educational contexts. A growing body of literature has already demonstrated that positively-valenced narratives garner generosity towards socially-distant others, whereas negatively-valenced narratives often constrain socially-distant-oriented generosity (Hillenbrand & Verrina, 2018; Paravatti et al., 2022). A ripe avenue for future inquiry to address is whether presenting narratives of a positive or utopian future might serve to inspire generosity and prosocial intentionality towards future generations. If the valence of narratives depicting the future do differentially predict future-oriented action, popular media, fiction literature and educational curricula could offer a tractable means to encourage such action if protecting the future is indeed a societal priority.

### **Limitations**

While the present research contributes valuable insights into the moral considerations of longtermists and their implications for future and current generations, several limitations warrant acknowledgment. Firstly, our research primarily relies on self-reported measures, which could introduce response biases or social desirability effects. To mitigate this, future studies could incorporate behavioral measures to bolster the robustness of our findings. Additionally, the use of hypothetical scenarios to assess moral regard might not fully capture the complexity of real-world moral decision-making. Incorporating real-life scenarios or longitudinal designs could provide a more ecologically valid understanding of how longtermism beliefs manifest in actual moral judgments and behaviors and whether they remain stable over time.

Furthermore, our investigation predominantly explores the link between longtermism beliefs and moral regard for future and current generations. However, the intricate interplay

between various psychological, cultural, and contextual factors that contribute to ethical considerations remains multifaceted. For instance, while our findings suggest that longtermists possess a nuanced moral framework that extends beyond temporal and social boundaries, the potential cultural and demographic variations in these dynamics have not been fully examined in these studies. Exploring how these patterns manifest across diverse populations could enrich our understanding of the generalizability and broader applicability of our findings. Future research could delve deeper into these factors to provide a comprehensive understanding of the nuanced mechanisms at play.

### **Conclusion**

Longtermists adhere to a unique moral framework that spans temporal and social boundaries. Their heightened moral regard for both future and present individuals underscores the potential of longtermism to guide ethical considerations and actions in the face of existential threats. These insights contribute to the ongoing discourse surrounding the role of longtermism in shaping our responsibilities towards the collective well-being of humanity, bridging theory and practice in the pursuit of a more secure and promising future and present.

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