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# Cross-cultural perceptions of rights for future generations

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# Cross-Cultural Perceptions of Rights for Future Generations

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## I. INTRODUCTION

Recent scholarship has revealed a seemingly stark mismatch between the value of future generations and the lack of protection afforded to them under present legal systems. Although (a) climate change, pandemics, nuclear war, and artificial intelligence pose greater threats to the future of humanity than any previous risk (Ord, 2020), and (b) legal experts by-and-large seem to believe the legal system to be capable of protecting future generations against these risks (Martínez & Winter, 2021a), lawmakers by-and-large fail to commensurately attend to future generations.

The past decade has seen a growing interest in advocacy efforts to protect future generations from risks associated with climate change, pandemics, artificial intelligence, and other potential threats (Bliss 2022; Setzer & Vanhala 2019; Bogojević 2020; Schoch-Spana et al. 2017; Yassif 2017). It has also featured the development of philosophical theories formalizing the abstract principles underlying the view that one should particularly concerned with protecting the long-term future. The set of philosophical theories associated with the view that one should be particularly concerned with protecting the long-term future is referred to as *longtermism* (MacAskill, 2022). In the context of law, these theories form the basis for *legal longtermism*, the set of views associated with the claim that law and legal institutions ought to protect the far future (Martínez & Winter, 2021a; Winter et al., 2021).

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Recent literature has investigated the extent to which laypeople and legal experts believe the law can and should protect the interests of future generations. For example, in a set of over 1000 U.S. lay adults, Martínez and Winter (2021b) found that the majority of participants (a) endorsed increasing legal protection for future generations far beyond the current level currently afforded to them, and (b) endorsed granting personhood and standing to at least some subset of humans living in the future. In a separate set of over 500 United States law professors, Martínez and Tobia (2023) found that the majority of participants similarly endorsed granting personhood to at least some subset of humans living in the future.

Meanwhile, in a separate study of over 500 law professors from around the world, Martínez and Winter (2021a) found that participants not only believed that legal systems *should* protect humans living in the far future, but also that legal systems *can* feasibly and predictably influence the far future, both overall and in the context of specific areas of law (such as international law, environmental law, and constitutional law) and with regard to specific risks (such as climate change and biorisk). The survey also found that the majority of participants believed there to be a reasonable legal basis for granting standing to future generations in at least some possible cases.

Across these three studies, the main findings held true independent of demographic factors such as age, race, gender and politics, suggesting that the view that law should protect the interests of the long-term future is widely endorsed by U.S. lay adults and legal academics across the English-speaking world (cf. Martínez & Winter 2022). However, it remains an open question whether these principles are also held across a wider range of cultures and legal systems outside the English-speaking world. Within the wider experimental jurisprudence landscape, there is a burgeoning literature concerned with documenting cross-cultural stability and variation of legally relevant concepts and theories, such as textualism (Hannikainen et al., 2021b) and retrospective

laws (Hannikainen et al., 2021a), and judicial behavior, such as use of horizontal precedent (Spamann et al., 2021; Zhuang Liu, Klöhn & Spamann 2021), and others (Sznycer & Patrick 2020; see generally Hannikainen et al. 2018).

Here we similarly sought to document the cross-cultural stability and variation of beliefs about law and future generations by investigating to what extent laypeople across the world believe: (a) future generations ought to be afforded general protection under national and/or international law; (b) future generations ought to be granted fundamental legal status, such as personhood and standing to bring forth a lawsuit; and (c) the interests of future generations ought to trump those of present generations in the context of national and international lawmaking. We further sought to investigate to what extent these beliefs could be accounted for based on demographic factors, such as nationality and political affiliation.

To do so, we conducted a survey of laypeople in 10 different countries, including Australia, Canada, Chile, Japan, Mexico, Spain, South Africa, South Korea, United Kingdom and United States. Our main findings were fourfold.

First, in each of the ten countries in our sample, the mean level of desired legal protection towards humans living in the near future and the far future was higher than the perceived current level of legal protection, suggesting that increasing legal protection for future generations beyond the current level is strongly endorsed cross-culturally. Second, in the majority of the countries in our sample, participants endorsed personhood and standing for at least some subset of humans living in both the near-future and far-future, indicating that support for providing legal protection to future generations through these mechanisms is likewise widely supported cross-culturally. Third, across all participants, the majority endorsed the proposition that there are at least some possible scenarios in which the welfare of future people should outweigh that of present people,

indicating that there is robust cross-cultural support not only for increasing legal protection to future generations but for prioritizing this protection over other groups in certain cases.

Although we also found variation in responses among different demographic groups, suggesting that one's view of how future generations are and ought to be protected under the law is influenced by one's cultural and political makeup, the first three main findings were robust to demographic factors such as gender, politics, and nationality. That is to say, there is widespread agreement across cultures to protect future generations more strongly via national and international law.

Taken together, these findings not only inform our understanding of the intuitive appeal of protecting the long-term future, but also advance our understanding of the extent to which law can and should protect the long-term future, both according to and in addition to existing legal mechanisms. More broadly, this study furthers our understanding of the ordinary concept of law by uncovering how people across disparate cultures, languages and legal systems view law's role in protecting different groups, as well as the responsibility of international and national legal institutions in providing that protection.

## II. METHODS

### *A. Materials*

To answer these questions, we constructed a three-part questionnaire, with specific formulations modeled off of recent work by Martínez and Winter (2021a, 2021b) and Martínez and Tobia (2023). We constructed this questionnaire in English, Spanish, Japanese and Korean.

Below is an overview of the English version of the questionnaire.<sup>1</sup> The complete English-,

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<sup>1</sup> The non-English-language translations were all prepared by a native speaker in the respective language with extensive legal experience in both English- and Japanese-, Korean-, and/or Spanish-speaking jurisdictions. Each

Spanish-, Japanese-, and Korean-language versions of the materials can be found on our Open Science Framework repository.<sup>2</sup>

For the first part of the survey (Part I), we first designed a set of materials that asked participants to rate how much their legal system descriptively does and normatively should protect the welfare (broadly understood as the rights, interests, and/or well-being) of nine groups:

- a) Humans inside the jurisdiction (e.g., citizens or residents of your country)
- b) Humans outside the jurisdiction
- c) Corporations
- d) Unions
- e) Non-human animals
- f) Environment (e.g., rivers, trees, or nature itself)
- g) Sentient artificial intelligence (capable of feeling pleasure and pain, assuming its existence)
- h) Humans not yet born but who will exist in the near future (up to 100 years from now)
- i) Humans who will only exist in the very distant future (more than 100 years from now)

The descriptive and normative prompts were presented as follows:

- 1) One a scale of 0–100, how much **does** your country’s legal system protect the welfare (broadly understood as the rights, interests, and/or well-being) of the following groups?

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translation was also reviewed by a second native speaker in the language and machine-translated back into English to verify its faithfulness to the original.

<sup>2</sup> [https://osf.io/zh4bj/?view\\_only=cb8651df947143aab52e56109d2c7fe9](https://osf.io/zh4bj/?view_only=cb8651df947143aab52e56109d2c7fe9).

- 2) One a scale of 0–100, how much **should** your country’s legal system protect the welfare (broadly understood as the rights, interests, and/or well-being) of the following groups?

With regard to the rating scale, 0 represented “not at all” and 100 represented “as much as possible.”

We also constructed a separate version of these materials that asked the same questions about the same groups but with respect to international legal institutions (such as the United Nations) as opposed to a country’s legal system. The two descriptive and normative prompts of these materials were presented respectively as follows:

- 3) One a scale of 0–100, how much do international organizations (such as the United Nations) protect the welfare (broadly understood as the rights, interests, and/or well-being) of the following groups?
- 4) One a scale of 0–100, how much **should** international organizations (such as the United Nations) protect the welfare (broadly understood as the rights, interests, and/or well-being) of the following groups?

Given that laypeople are not typically experts regarding how the law is or currently works, the purpose of the descriptive questions was not meant to establish the “legal truth”, but rather to establish a baseline for comparison to the normative question—in other words, to better understand not only how much people think certain groups ought to be protected overall, but also how much they think certain groups ought to be protected relative to how much they think they are currently being protected and relative to other groups.

For the second part (Part II), we designed materials that related specifically to two fundamental legal concepts: personhood and standing. Personhood, also known as legal personality, refers to “the particular device by which the law creates or recognizes units to which it ascribes certain powers and capacities” (Paton & Derham, 1972; Garner & Black, 1999), whereas standing, also known as *locus standi*, refers to “a party’s right to make a legal claim or seek judicial enforcement of a duty or right” (Garner & Black, 1999).

With regard to personhood, following Martínez and Tobia (2023) and Martínez and Winter (2021b), and standing, we asked:

- 5) Insofar as the law should protect the rights, interests, and/or well-being of ‘persons,’ which of the following categories includes at least some ‘persons?’
- 6) Which of the following groups should have the right to bring a lawsuit (or have a lawsuit brought on their behalf) in at least some possible cases?

Both questions asked participants to rate the same groups as in the first part. For each of these groups, the main answer choices were “reject,” “lean against,” “lean towards,” and “accept.” Participants could instead select one of several “other” choices: “no fact of the matter,” “insufficient knowledge,” “it depends,” “question unclear,” or “other.”

For the third part (Part III), we designed materials that related specifically to whether people thought the welfare of future generations ought to outweigh the welfare of present generations, in at least some possible cases. We constructed two prompts that asked about this in the context of national and international law-/policy-making respectively:

- 7) In the context of national law- and policy-making, there are at least some possible scenarios in which the welfare (broadly understood as the rights, interests and/or wellbeing) of future people should outweigh that of present people.
- 8) In the context of international law- and policy-making, there are at least some possible scenarios in which the welfare (broadly understood as the rights, interests and/or wellbeing) of future people should outweigh that of present people.

As in Part II, the main answer choices were “reject,” “lean against,” “lean towards,” and “accept.” Participants could instead select one of several “other” choices: “no fact of the matter,” “insufficient knowledge,” “it depends,” “question unclear,” or “other.”

In addition to these main materials, we also designed a political affiliation question that asked “How do you identify politically?” and provided response choices of “strongly liberal/left-leaning,” “moderately liberal/left-leaning,” “somewhat liberal/left-leaning,” “centrist,” “somewhat conservative/right-leaning,” “moderately conservative/right-leaning,” and “strongly right-leaning.” Finally, we designed an attention-check question that asked participants to solve a simple multiplication problem.

### *B. Participants and Procedure*

Participants (n = 3,301) were recruited from the following ten countries: United States, Canada, Australia, United Kingdom, South Africa, Chile, Spain, Mexico, Korea, and Japan.<sup>3</sup>

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<sup>3</sup> Countries were chosen based on a number of considerations similar to those of other cross-cultural work, such as Spamann et al. (2021) and Hannikainen et al. (2021a), including the goal of achieving geographic, cultural, and linguistic diversity, as well as maintaining a balance of civil and common law jurisdictions. For more comprehensive information about how these countries differ, *see*, for example, World Bank (2022) and Juriglobe (2022).

For each country, at least 300 participants were recruited either via the online platform Prolific<sup>4</sup> or via Survey Monkey.<sup>5</sup> To be eligible to participate in the study, participants were required to be adult citizens of the respective country.<sup>6</sup>

With regard to procedure, participants were first shown the first two questions of Part I, followed by the attention check question. Next, on a separate screen participants were shown the next two questions of Part I, followed by the materials to Part II on a third screen, and the materials to Part III on a fourth screen. The order of questions on each screen, as well as the order of the groups for the questions pertaining to Parts I and II, were randomized to minimize framing effects.

Participants who completed the study were retained in the analysis if they answered the attention check correctly. 343 of the original 3,301 participants failed the attention check, either by not answering it at all or by answering it incorrectly. We therefore report the results of the remaining 2,938 participants in our analysis below. A breakdown of these participants is presented in Table 24.1.

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<sup>4</sup> Participants from the following countries were recruited via Prolific: United States, Canada, Australia, United Kingdom, South Africa, Chile, Spain, and Mexico.

<sup>5</sup> Participants from the following countries were recruited via Survey Monkey: Japan and Korea.

<sup>6</sup> Note that hereinafter we use the phrase “participants in [country]” as synonymous with “citizens of [country]” or “those with nationality in [country].”

Country	Number Participants	% Female	% Left-leaning
Australia	287	53.2	63.4
Canada	278	51.8	61.5
Chile	297	32.3	57.9
Japan	253	38.0	15.2
Korea	313	45.5	29.6
Mexico	293	45.1	39.3
South Africa	291	63.3	18.9
Spain	298	40.7	57.4
United Kingdom	280	55.6	45.4
United States	285	44.9	59.7

**Table 24.1:** Demographic breakdown of participants in each country

*C. Analysis Plan*

We analyzed our results using forms of both parameter estimation and hypothesis testing. With regard to the former, for each question we calculated a confidence interval of the mean response using the bias-corrected and accelerated (BCa) bootstrap method based on 5000 replicates of the sample data. In reporting the standing and personhood results, as well as the results of the rights question, we follow Bourget and Chalmers (2014), Martínez and Tobia (2023), Martínez and Winter (2021a), and Martínez and Winter (2021b) by combining all “lean towards” and “accept” responses into an endorsement measure and the “lean against” and “reject” responses into a rejection measure.

With regard to hypothesis testing, for Part I, we conducted three separate mixed-effects linear regressions, one each with participant responses of (a) desired protection, (b) current protection, and (c) [desired - current] protection as the outcome variable. For each of these

regressions, we used the following fixed-effect predictors: (a) group, (b) level (international vs. national law), (c) nationality, (d) the interaction between group and level, and (e) the interaction between group and nationality.<sup>7</sup> These regressions also used response as a random effect.

For Part II, we conducted separate mixed-effects logistic regressions, one each with participant responses to the standing and personhood questions<sup>8</sup>. For each of these regressions, we used the following fixed-effect predictors: (a) group, (b) nationality, and (c) the interaction between group and nationality. These regressions also used response as a random effect.

For Part III, we conducted a mixed-effects logistic regression with (a) participant responses as the outcome variable<sup>9</sup>; (b) nationality, level, the interaction between nationality and level as fixed-effect predictors; and (c) participants as a random effect.

In order to test the effect of politics and gender on one's responses to the questions we conducted separate versions of each of the above regressions adding (a) politics or gender, and (b) the interaction between politics/gender and each group surveyed on. Politics was recentered to a -3 to 3 scale, with "centrist" coded as 0, "strongly liberal/left-leaning" coded as 3, and "strongly conservative/right-leaning" coded as -3. Gender was treatment coded, with "male" as the reference group.

In order to draw regional and cultural differences beyond individual country, we conducted separate analyses to test whether responses were affected by whether a participant was a citizen of a Global North or Global South country. To do so, we conducted separate versions of our main

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<sup>7</sup> Note that for the purpose of these and other regressions, level was treatment coded, and nationality was sum coded.

<sup>8</sup> For the purposes of this question, all "lean towards" and "accept" responses (i.e., those coded as "endorse") coded as a "1", and "lean against" and "reject," responses were coded as "0." All "other" responses were omitted from the analysis.

<sup>9</sup> Responses to this question were coded the same way as those in Part II.

regression analyses in which we replaced “nationality” with “region” (i.e., Global North and Global South) as a fixed-effect predictor.<sup>10</sup>

### **III. RESULTS**

#### *A. Current vs. Desired Legal Protection*

Results of Part I are visualized in Figures 1, 2 and 3. Here we describe those results of each question of Part I in more detail in turn.

#### **1. Current Levels of Legal Protection**

At the national level, the full set of participants and those in every country except South Africa<sup>11</sup> perceived humans living in the near future and humans living in the far future respectively as having the third- and second-lowest perceived levels of protection of the nine groups surveyed on.

At the international level, participants perceived international organizations as providing more protection for humans living in the near future (39.9; 95% CI: 39.0 to 41.0) and for humans living in the far future (38.2; 95% CI: 37.1 to 39.3) compared to national legal systems, both overall and relative to other groups.

Our regression analyses revealed that participants overall, across both national legal systems and international organizations, (a) had significantly higher ratings for humans living in the jurisdiction ( $\beta=1.345e+01$ ,  $SE=3.648e-01$ ,  $p<2e-16$ ), humans outside the jurisdiction ( $\beta=5.782$ ,

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<sup>10</sup> For the purposes of this analysis, Chile, Mexico, and South Africa are considered part of the Global South. All other countries are considered part of the Global North.

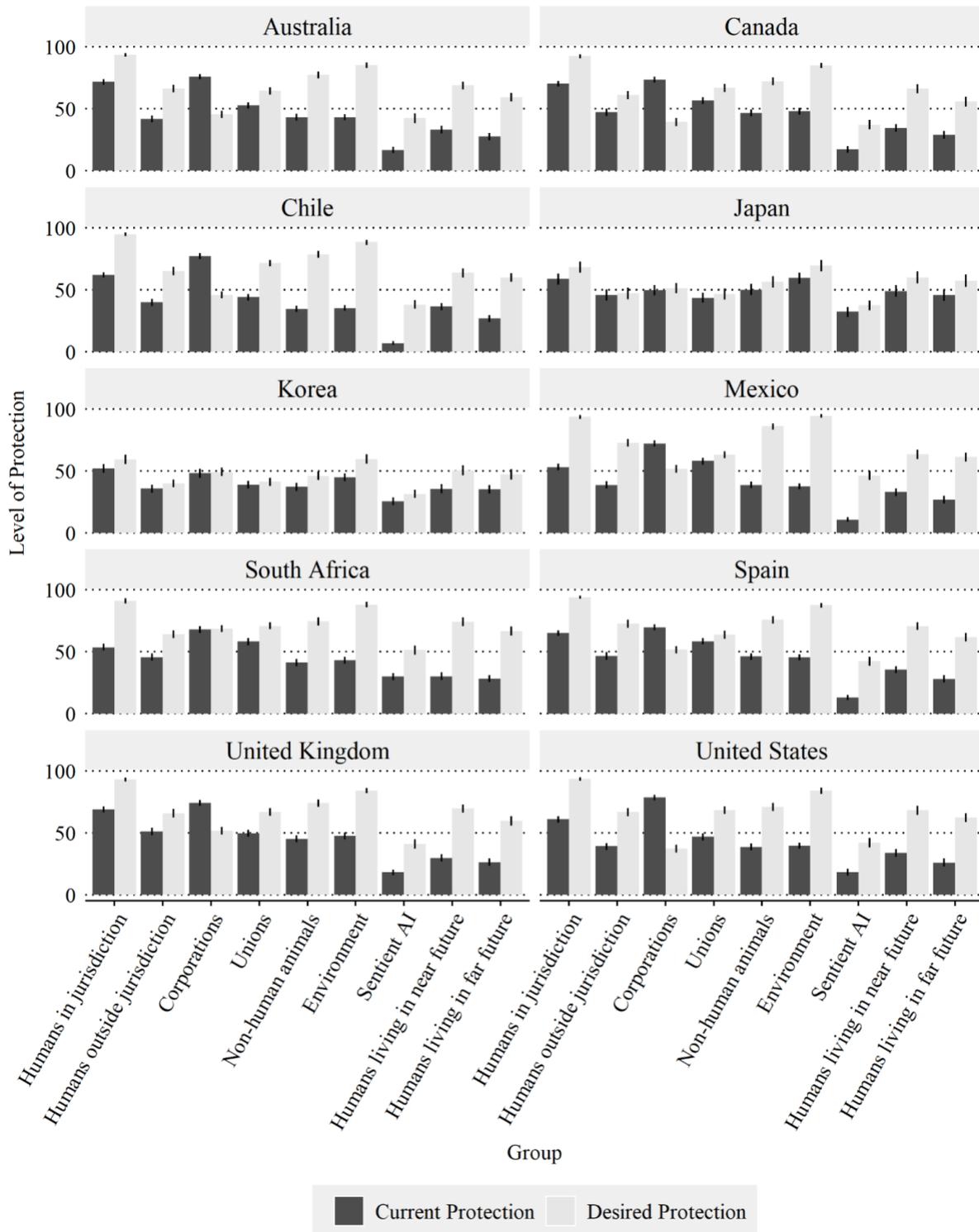
<sup>11</sup> In South Africa, “humans living in the near-term future” was the group with the third-lowest current level of protection, and “humans living in the far-future” was the group with the lowest current level of protection (sentient AI was the 2nd-lowest).

SE=3.648e-01,  $p < 2e-16$ ), corporations ( $\beta=9.345$ , SE=3.648e-01,  $p < 2e-16$ ), and the environment ( $\beta= 6.637$ , SE=3.648e-01,  $p < 2e-16$ ), and (b) had significantly lower ratings for unions ( $\beta=-4.465$ , SE=3.648e-01,  $p < 2e-16$ ), humans living in the near future ( $\beta=-3.577$ , SE=3.648e-01,  $p < 2e-16$ ), humans living in the far future ( $\beta=-5.287$ , SE=3.648e-01,  $p < 2e-16$ ), and sentient AI ( $\beta=-2.118e+01$ , SE=3.648e-01,  $p < 2e-16$ ). There was no significant difference between participant ratings of non-human animals and ratings overall ( $p = .050973$ ).

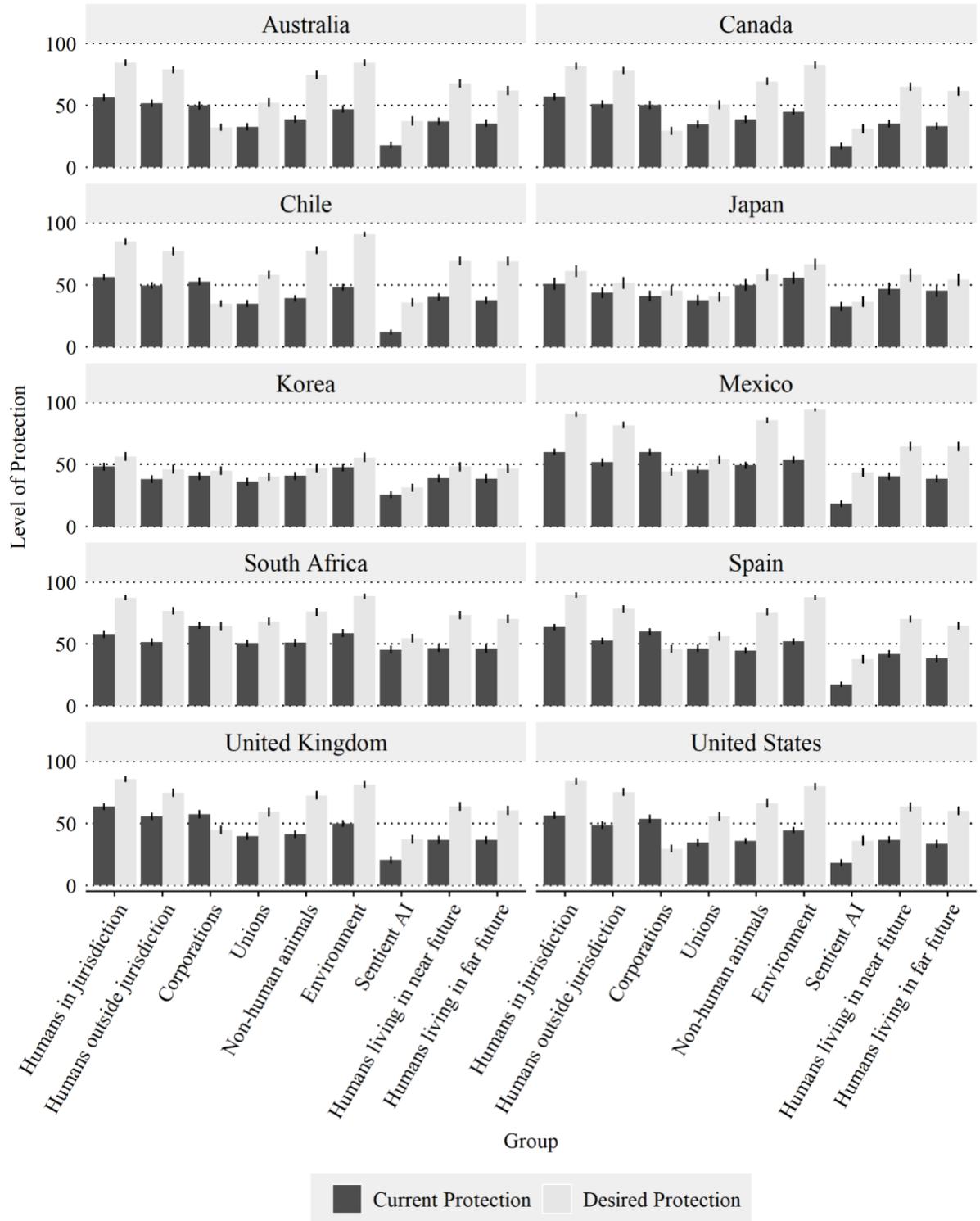
Concerning international vs. national law,<sup>12</sup> our model revealed no significant difference in perceived protection from national law relative to international law ( $p=.599303$ ). However, our model did find a significant interaction between level of law and group, such that participants gave disproportionately lower ratings for desired protection of humans living in the near future ( $\beta=-5.157$ , SE=5.141e-01,  $p < 2e-16$ ) and far future ( $\beta=-8.609$ , SE=5.141e-01,  $p < 2e-16$ ) at the national level relative to the international level compared to other groups. Other results of the model, including main effects of different countries, as well as interactions between countries and groups, are reported in the Appendix.

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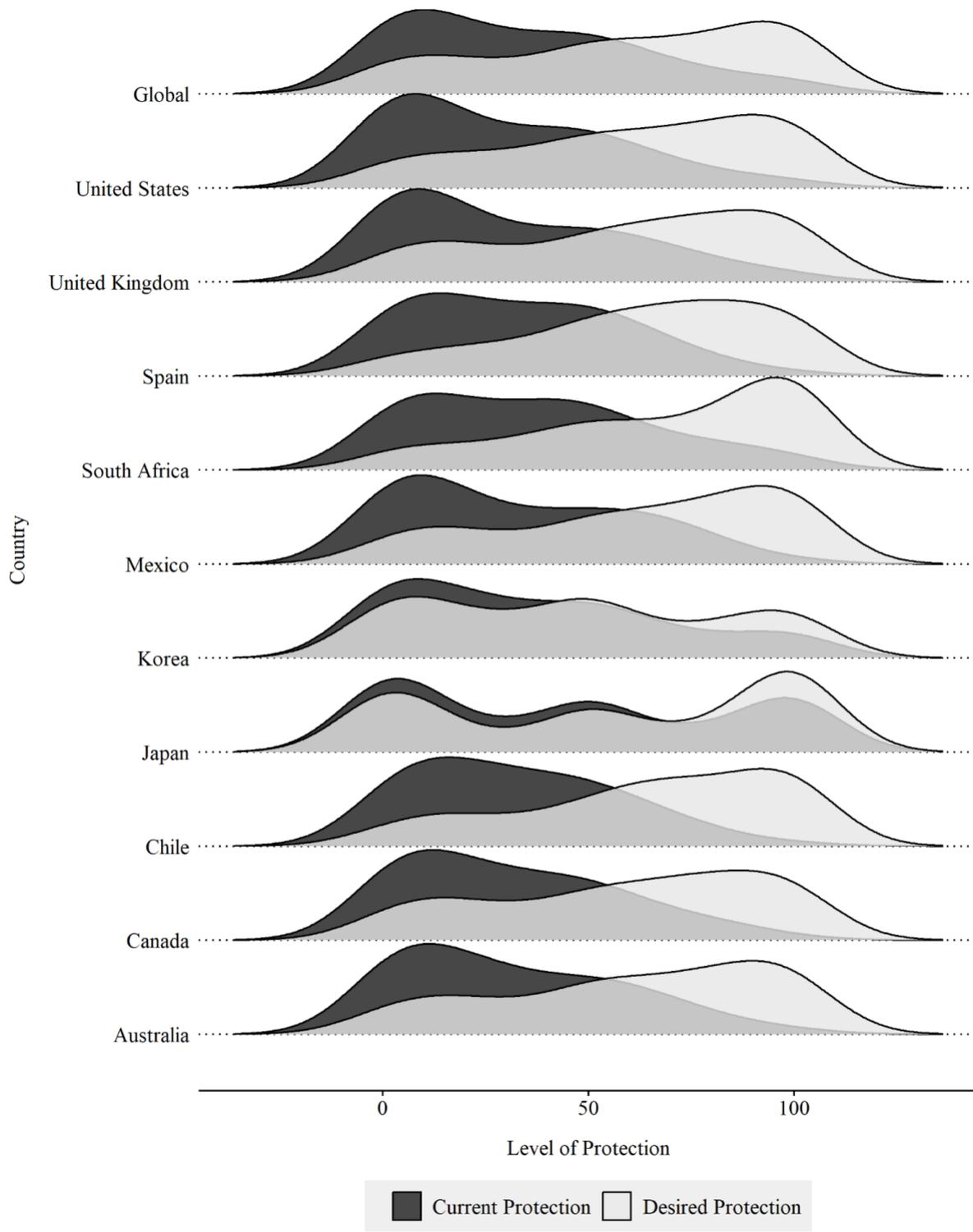
<sup>12</sup> Note that we use “national law” here as synonymous with some uses of the term “domestic law”—that is, the law pertaining to a given country’s legal system.



**Figure 1:** Current vs. desired *national* legal protection of far-future humans and other groups as judged by participants across countries



**Figure 2:** Current vs. desired *international* legal protection of far-future humans and other groups as judged by participants across sample countries.



**Figure 3:** Distribution of participant ratings of current vs. desired legal protection for humans living in the far future. Note that areas shaded in medium gray refer to overlap between the two distributions.

## 2. Desired Levels of Legal Protection

At the national level, across all participants, humans living in the near future had the fourth-highest level of desired protection of the nine groups, while humans living in the far future had the seventh-highest level of desired protection. Similar ordinal tendencies were observed within each individual country, as well as at the international level.

Our regression analyses revealed that participants overall (a) had significantly higher ratings for humans living in the jurisdiction ( $\beta=18.1557$ ,  $SE=0.405$ ,  $p<2e-16$ ), humans outside the jurisdiction ( $\beta=9.351$ ,  $SE=0.405$ ,  $p<2e-16$ ), non-human animals ( $\beta=7.776$ ,  $SE=.2877$ ,  $p<2e-16$ ), the environment ( $\beta=18.63$ ,  $SE=0.405$ ,  $p<2e-16$ ), and humans living in the near future ( $\beta=1.832$ ,  $SE=0.405$ ,  $p=7.47e-07$ ), (b) had significantly lower ratings for corporations ( $\beta=-18.1253$ ,  $SE=0.405$ ,  $p<2e-16$ ), unions ( $\beta=-5.5957$ ,  $SE=0.405$ ,  $p<2e-16$ ), humans living in the far future ( $\beta=-1.157$ ,  $SE=0.405$ ,  $p=.004255$ ), and sentient AI ( $\beta=-24.47$ ,  $SE=0.405$ ,  $p<2e-16$ ).

With respect to international vs. national law, our model revealed that participants desired more protection from national law than international law ( $\beta=1.979$ ,  $SE=.202$ ,  $p<2e-16$ ). In particular, participants believed that humans living in the far future should receive disproportionately more protection from national legal systems relative to international organizations, as compared to other groups ( $\beta=-4.237$ ,  $SE=.570$ ,  $p=1.10e-13$ ).

Other results of the model, including main effects of different countries, as well as interactions between countries and groups, are reported in the Appendix.

### *p*<3. Desired vs. Current Legal Protection

The difference between the desired and current levels of legal protection reflect how much more protection respondents wanted for different groups. When comparing the desired vs. current level of legal protection, across all participants, the mean difference (i.e., desired minus current)

at the national level was 30.5 for humans living in the near future (95% CI: 29.2 to 31.8) and 29.3 for humans living in the far future (95% CI: 28.0 to 30.5)—the second and third largest gaps across all groups.

At the international level, the mean difference (i.e., desired minus current) was 24.5 for humans living in the near future (95% CI: 23.3 to 25.7) and 23.2 for humans living in the far future (95% CI: 22.1 to 24.4)—the third and fifth largest differences among the nine groups.

Our regression analyses revealed that the difference between participant ratings of desired and current legal protection was (a) significantly higher for humans living in the jurisdiction ( $\beta=4.703$ ,  $SE=4.783e-01$ ,  $p<2e-16$ ), humans outside the jurisdiction ( $\beta=3.569$ ,  $SE=4.783e-01$ ,  $p=8.69e-14$ ), non-human animals ( $\beta=8.488$ ,  $SE=4.783e-01$ ,  $p<2e-16$ ), the environment ( $\beta=1.199e+01$ ,  $SE=4.783e-01$ ,  $p<2e-16$ ), humans living in the near future ( $\beta=5.410$ ,  $SE=4.783e-01$ ,  $p<2e-16$ ), and humans living in the far future ( $\beta=4.130$ ,  $SE=4.783e-01$ ,  $p<2e-16$ ); and (b) significantly lower for unions ( $\beta=-4.638$ ,  $SE=4.783e-01$ ,  $p<2e-16$ ), corporations ( $\beta=-3.036e+01$ ,  $SE=4.783e-01$ ,  $p<2e-16$ ), and sentient AI ( $\beta=-3.295$ ,  $SE=4.783e-01$ ,  $p=5.68e-12$ ).

Concerning international vs. national law, our model revealed that the difference between desired and current legal protection was significantly higher for national law than international law ( $\beta=1.878$ ,  $SE=2.387e-01$ ,  $p=3.67e-15$ ), and was disproportionately higher for humans living in the near future ( $\beta=4.344$ ,  $SE=6.740e-01$ ,  $p=1.16e-10$ ) and far future ( $\beta=4.372$ ,  $SE=6.740e-01$ ,  $p=8.83e-11$ ) at the national level relative to the international level compared to other groups. Other results of the model, including main effects of different countries, as well as interactions between countries and groups, are reported in the Appendix.

## *B. Personhood and Standing*

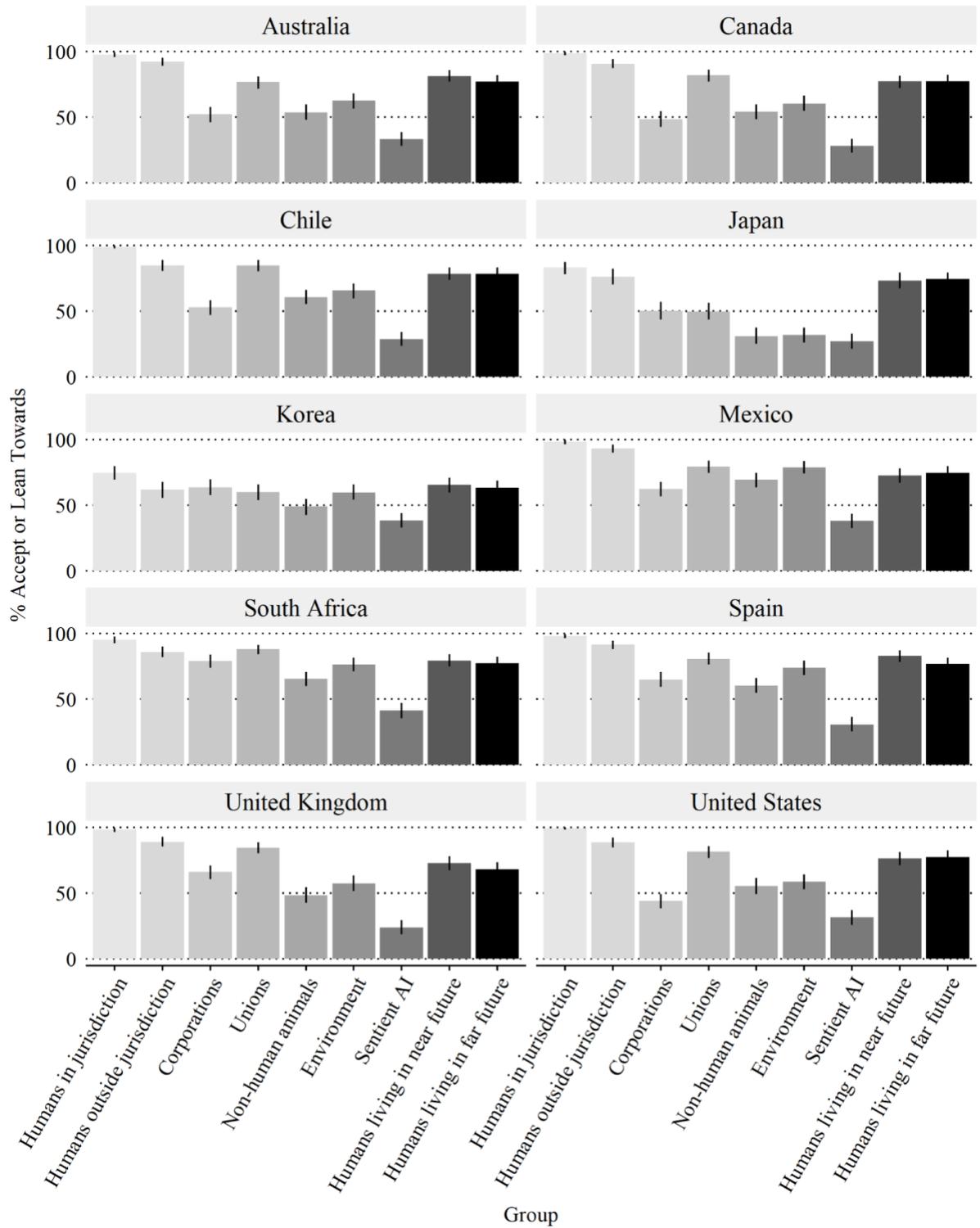
### **1. Personhood**

Personhood results are visualized in Figure 24.4. Across all participants overall and within every country, the majority of participants endorsed personhood for humans living in the near future (76.0%; 95% CI: 74.4 to 77.7), as well as humans living in the far future (74.5%; 95% CI: 72.9 to 76.1).

Across all participants, the group with the highest endorsement percentage was humans living in the jurisdiction (94.5%; 95% CI: 93.7 to 95.3), followed by humans outside the jurisdiction (85.7%; 95% CI: 84.4 to 87.0), unions (77.4%; 95% CI: 75.7 to 78.9), humans living in the near future (76.0%; 95% CI: 74.4 to 77.7), humans living in the far future (74.5%; 95% CI: 72.9 to 76.1), the environment (63.3%; 95% CI: 61.5 to 65.1), corporations (58.5%; 95% CI: 56.6 to 60.3), non-human animals (55.3%; 95% CI: 53.4 to 57.2), and sentient artificial intelligence (32.1%; 95% CI: 30.4 to 34.0). Similar patterns were observed across countries (see Figure 4).

Our regression analysis revealed that participants overall were (a) significantly more likely to endorse personhood for humans in the jurisdiction ( $\beta=2.607011$ ,  $SE=0.125821$ ,  $p<2e-16$ ), humans outside the jurisdiction ( $\beta=0.963567$ ,  $SE=0.058892$ ,  $p<2e-16$ ), unions ( $\beta=0.281501$ ,  $SE=0.049700$ ,  $p=1.48e-08$ ) and humans living in the near future ( $\beta=0.179445$ ,  $SE=0.047657$ ,  $p=0.000166$ ) than the overall average; (b) significantly less likely to endorse personhood for non-human animals ( $\beta=-0.912175$ ,  $SE=0.043089$ ,  $p<2e-16$ ), the environment ( $\beta=-0.528039$ ,  $SE=0.044367$ ,  $p<2e-16$ ), sentient AI ( $\beta=-1.959534$ ,  $SE=0.045477$ ,  $p<2e-16$ ), and corporations ( $\beta=-0.717517$ ,  $SE=0.043387$ ,  $p<2e-16$ ); and (c) neither significantly more nor significantly less likely to endorse personhood for humans living in the far future and unions. Other results of the model, including main effects of different countries, as well as interactions between countries and

groups, are reported in the Appendix.



**Figure 4:** Endorsement rates of personhood for future humans and other groups across participants in sample countries.

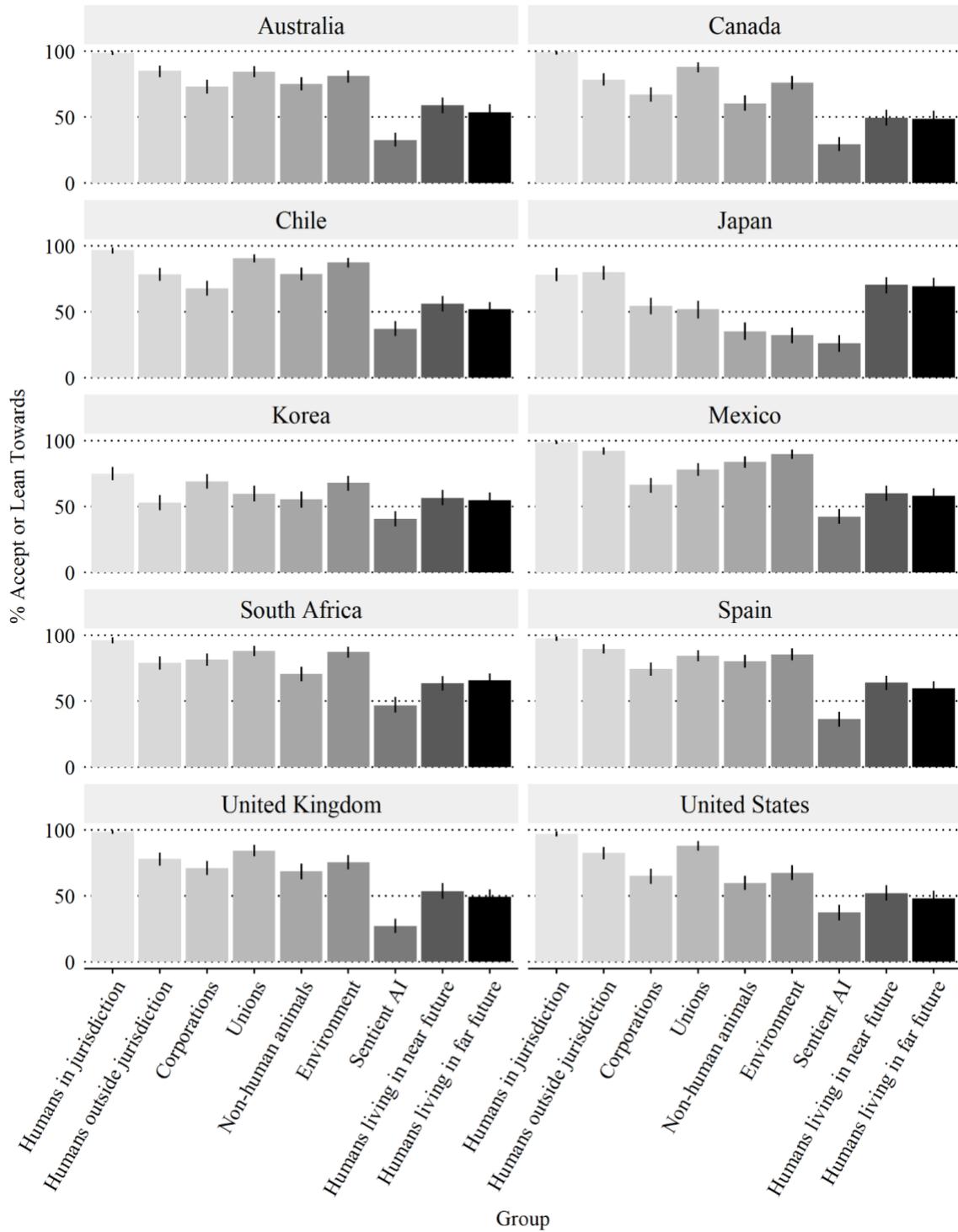
## 2. Standing

Standing results are visualized in Figure 24.5. Across all participants, a majority endorsed standing for humans living in the near future (58.2%; 95% CI: 56.3 to 60.0), as well as humans living in the far future (55.6%; 95% CI: 56.3 to 60.1). Within each individual country, for every country except Canada, a majority endorsed standing for humans living in the near-future, and for every country except Canada, the United Kingdom, and the United States, a majority endorsed standing for humans living in the far future.

Across all participants, the group with the highest endorsement percentage was humans living in the jurisdiction (94.0%; 95% CI: 93.0 to 94.9), followed by unions (80.5%; 95% CI: 79.0 to 82.0), humans outside the jurisdiction (79.8%; 95% CI: 75.7 to 78.9), the environment (76.1%; 95% CI: 74.4 to 77.6), corporations (69.3%; 95% CI: 67.5 to 71.1), non-human animals (67.6%; 95% CI: 66.0 to 69.4), humans living in the near future (58.2%; 95% CI: 56.3 to 60.0), humans living in the far future (55.6%; 95% CI: 56.3 to 60.1), and sentient artificial intelligence (35.8%; 95% CI: 34.1 to 37.6). Similar patterns were observed across countries (see Figure 1).

Our regression analysis for standing revealed that participants overall were (a) significantly more likely to endorse standing for humans in the jurisdiction ( $\beta=2.524$ ,  $SE=.116$ ,  $p<2e-16$ ), humans outside the jurisdiction ( $\beta=0.5264309$ ,  $SE=0.0525465$ ,  $p<2e-16$ ), unions ( $\beta=0.5668615$ ,  $SE=0.0532697$ ,  $p<2e-16$ ), and the environment ( $\beta=0.2564719$ ,  $SE=0.0510534$ ,  $p=5.07e-07$ ); and (b) significantly less likely to endorse standing for humans living in the near future ( $\beta=-0.7359774$ ,  $SE=0.0439306$ ,  $p<2e-16$ ), humans living in the far future ( $\beta=-0.8588590$ ,  $SE=0.0438439$ ,  $p<2e-16$ ), non-human animals ( $\beta=-0.274$ ,  $SE=0.046$ ,  $p=3.10e-09$ ), corporations ( $\beta=-0.1866865$ ,  $SE=0.0451599$ ,  $p=3.57e-05$ ), and sentient AI ( $\beta=-1.8183220$ ,  $SE=0.0451470$ ,  $p<2e-16$ ). Other results of the model, including main effects of different countries, as well as interactions

between countries and groups, are reported in the Appendix.



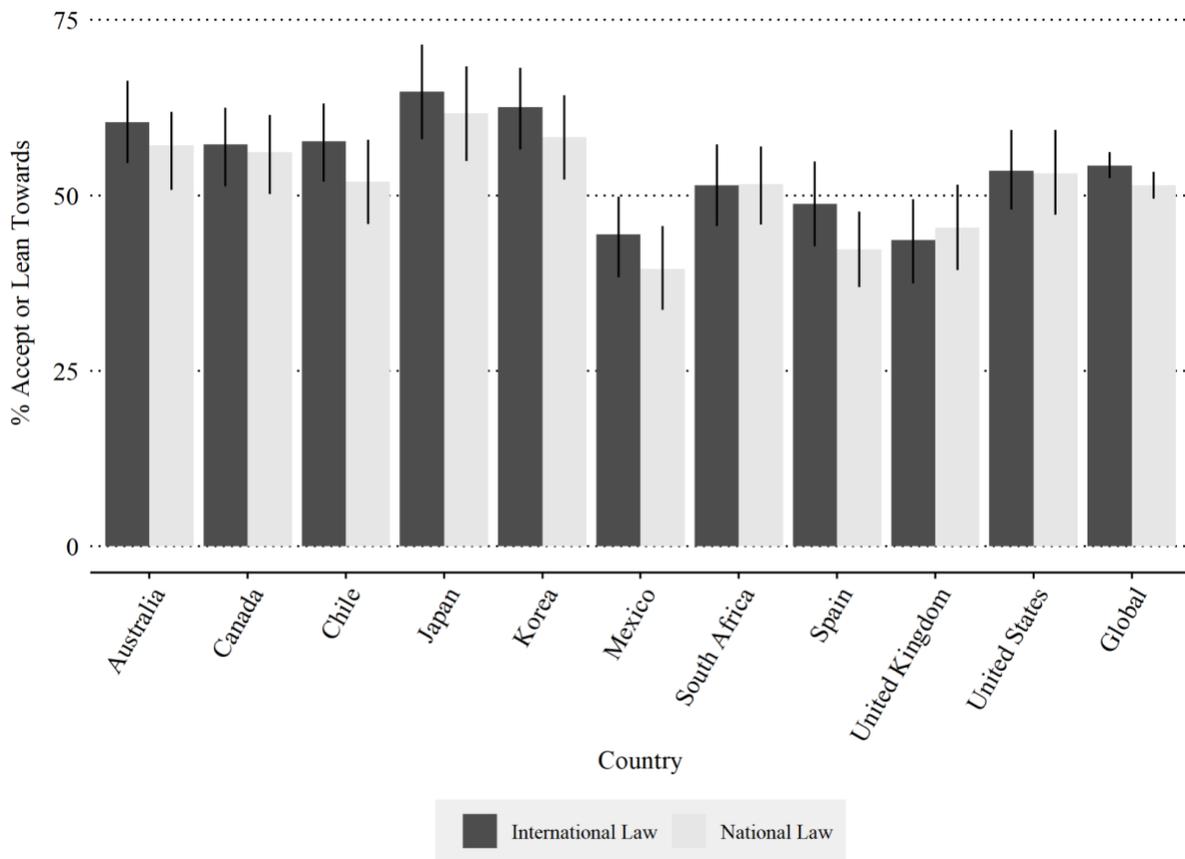
**Figure 5:** Endorsement rates of standing for future humans and other groups across participants in sample countries.

### *C. Rights of Future vs. Present Humans*

Results of Part III are visualized in Figure 6. Across all participants, the majority (54.1%; 95% CI: 52.2 to 55.9) of participants endorsed the proposition that there are at least some possible scenarios in the context of international law- and policy-making in which the welfare of future people should outweigh that of present people.

In the context of national law-making, the majority of all participants (51.4; 95% CI: 49.5 to 53.2) likewise endorsed the proposition that there are at least some possible scenarios in which the welfare of future people should outweigh that of present people.

Our regression models revealed endorsement rates to be significantly higher at the international level than at the national level. Our regression model also revealed overall endorsement rates to be significantly lower than average in the United Kingdom ( $\beta=-1.068e-01$ ,  $SE=2.898e-02$ ,  $p=.0002$ ), and Mexico ( $\beta=-1.014e-01$ ,  $SE=2.815e-02$ ,  $p=.000319$ ), and significantly higher in Australia ( $\beta=5.857e-02$ ,  $SE=2.845e-02$ ,  $p=.039575$ ), Japan ( $\beta=9.986e-02$ ,  $SE=3.328e-02$ ,  $p=.002712$ ), and Korea ( $\beta=8.023e-02$ ,  $SE=2.878e-02$ ,  $p=0.005344$ ).



**Figure 6:** Endorsement rates for the proposition that there are at least some possible scenarios in the context of [international and national] law- and policy-making in which the welfare of future people should outweigh that of present people.

#### *D. Influence of Demographic Factors*

Although our main results were largely robust to demographic differences, there were also significant correlations and effects among demographic variables such as politics and gender and participant responses. These results are reported in the Appendix.

## IV. DISCUSSION

In this paper, we set out to answer three main questions. Here we discuss to what extent the results of our study answered these questions, including whether people across cultures endorse

(a) increasing legal protection for future humans beyond current levels via national and international law and policy (Section IV.A); (b) extending personhood and standing to some subset of humans living in the near and far future (Section IV.B); and (c) prioritizing the interests of future people over those of present people in some possible cases (Section IV.C). We also discuss to what extent, according to our results, said endorsement may differ based on cultural, political and gender differences among people (Section IV.D).

In addition, we discuss the broader implications of the results for informing theoretical debates relating to legal philosophy, doctrine, and policy. This includes what these findings contribute to our understanding of the ordinary concept of law across cultures (Section IV.E), the legal validity of protecting the long-term future (Section IV.F), and the future of future generations across the world's legal systems (Section IV.G).

#### *A. General Legal Protection for Future Generations*

The first question we set out to answer was to what extent people across different cultures generally endorse providing legal protection to future generations.

Here, in each of the ten countries in our sample, the mean level of desired legal protection towards humans living in the near future and the far future was higher than the perceived current level of legal protection, both at the national and international level, suggesting that increasing legal protection for future generations beyond the current level is endorsed not only by laypeople and experts within the English-speaking world (as demonstrated by previous work: Martínez & Winter, 2021a; Martínez & Winter, 2021b; Martínez & Tobia, 2023) but cross-culturally, as well.

Moreover, across all participants, the difference between the desired and current level of legal protection was not only positive but significantly higher for both humans living in the near

future and humans living in the far future than for groups as a whole, suggesting that people across various cultures not only endorse increasing protection for future generations but view increasing legal protection for future generations as more neglected than for other groups.

Additionally, the fact that participants gave similar ratings of desired protection to humans living in the near future and far future may suggest that people do not discount desired legal protection substantially across time. This is in line with the views of some moral philosophers and theoretical economists<sup>13</sup> but contrary to views of many regulatory agencies and lawmakers around the world.<sup>14</sup>

Finally, the difference between desired and current legal protection for humans living in the near future and far future was disproportionately higher at the national level relative to the international level. This suggests that people view legal protection for future generations as even more neglected in the context of national law than international law. At the same time, it is important to note that these are small effects, and that the gap at both levels remains large, suggesting that people consider both national and international lawmakers to be responsible for substantially increasing legal protection to future generations.

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<sup>13</sup> For more information on discounting future welfare, *see* Beckstead (2019, pp. 89–90), Greaves et al. (2020, pp. 32–35), and Greaves (2017) (surveying discounting in public policy, including a survey of the arguments for and against a positive rate of pure time preference). Greaves (2017) points out that a zero rate of pure time preference is endorsed by, among others, Broome (2008), Buchholz and Schumacher (2010), Cline (1992), Cowen and Parfit (1992), Dasgupta (2008), Dietz et al. (2008), Gollier (2013), Harrod (1948), Pigou (1932), Ramsey (1928), Sidgwick (1907), Solow (1974), and Stern (2007). Other related philosophical work includes Mogensen (2019) and Parfit (1984). In a survey of experts on social discounting, 38% accepted a zero rate of pure time preference (Drupp et al., 2018).

<sup>14</sup> For an overview of discount rates employed by legal systems across the world, *see* Zhuang et al. (2007).

## B. Standing and Personhood for Future Generations

The second question we set out to answer was to what extent people across various cultures endorse granting personhood and standing to future generations. Contrary to the legal status quo,<sup>15</sup> we find that intuitive granting of standing and personhood to humans living in the near and far future is widely endorsed across cultures.

With regard to personhood, for example, within each country, the majority of participants endorsed personhood for at least some individuals within the categories of “humans living in the near future” and “humans living in the far future,” indicating that granting personhood to future humans is widely supported cross-culturally.

Endorsement rates of personhood were significantly higher for humans living in the near future than for groups as a whole, but were neither higher nor lower for humans living in the far future. This suggests that granting personhood is more favored cross-culturally for humans living in the near future than for humans living in the far future. At the same time, the fact that these differences were small provides further support for the view that people do not discount desired legal protection substantially across time.

Across all participants (and in the majority of the countries in our sample), the majority endorsed standing both for humans living in the near future and for humans living in the far future,

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<sup>15</sup> While standing requirements can vary widely across jurisdictions, the vast majority of jurisdictions have not explicitly extended the doctrine of *locus standi* to future generations. See, e.g., Bogojević (2020) (discussing the challenges and failures of extending the doctrine of standing in climate law cases); Albers (2018) (noting that “Standing to future generations has not yet been awarded in regional human rights courts, but it has been in a number of national cases” and discussing examples); Gonzalez-Ricoy & Fey (2019) (discussing the development of diffuse standing and reviewing landmark decisions enforcing environmental principles that granted standing to future generations). For notable examples of standing being granted to future generations in national cases, see *Minors Oposa* (Supreme Court of the Philippines, 1993, stating “We find no difficulty in ruling that [petitioners] can, for themselves, for others of their generation and for the succeeding generations, file a class suit.”); Sahoutara 2016; *Rabab Ali v. Pakistan* (Petition to Supreme Court of Pakistan, 2016: paras. 1, 6–7, 31, xviii) (granting standing to petitioner challenging various government actions related to Thar coal, on behalf of present and future generations).

indicating that granting standing to humans living in the future likewise enjoys substantial cross-cultural support outside the English-speaking world.

At the same time, endorsement rates of standing were significantly lower for humans living in the near future and for humans living in the far future than for groups overall. This suggests that granting standing to future generations enjoys less cross-cultural support than for other groups, such as the environment and non-human animals.

### *C. The Welfare of Future vs. Present Humans*

The third question we set out to answer was whether people believe that the welfare (broadly understood as the rights, interests and/or wellbeing) of future generations should ever outweigh that of the present generation.

Across all participants, and in the majority (7 out of 10) of countries in our sample, the majority of participants endorsed the proposition that there are at least some possible scenarios in which the welfare of future people should outweigh that of present people, both in the context of national law-making and in the context of international law-making. This suggests that there is robust cross-cultural support, not only for increasing legal protection to future generations, but for prioritizing this protection over other groups in certain cases, both at the national and international level.

Moreover, endorsement rates were significantly higher in the context of international law-making than in national law-making, which suggests that people believe the interests of future generations should be especially prioritized in the context of international law-making relative to national law-making.

#### *D. Cultural, Political and Demographic Influences*

In addition to our main questions, we also sought to determine to what extent support for legal protection of future generations could be accounted for by various cultural, political, and demographic factors. Previous work studying U.S. lay adults (Martínez & Winter 2021b) and legal experts across the anglosphere (Martínez & Winter 2021a) suggests that protection for future generations enjoys robust support independent of political and other demographic factors.<sup>16</sup> Here we found that this support was robust, not only to political differences within individual countries, but also across countries with different cultures and languages, indicating that the overall takeaway is one of cross-cultural and demographic stability rather than variation with regarding how people view the law's role in protecting the long-term future. At the same time, we also found several small but significant effects of certain demographic variables on participant ratings, which we outline here in turn.

##### **1. Culture**

With respect to nationality, we found several small but significant differences among countries with regard to participant ratings on all substantive portions of our materials, as described in the results.<sup>17</sup> For example, with regard to general legal protection, although in every country participants desired much higher rates of legal protection for future generations than the perceived current level, the difference between desired and current legal protection was significantly higher among participants from Spain, South Africa, Mexico, Chile, and Australia, while the difference was significantly lower among participants from Mexico, Japan, and Korea.

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<sup>16</sup> Summaries and discussion of this work can be found in Martínez and Winter (2022) and Martínez and Winter (forthcoming).

<sup>17</sup> Note that country samples were likely not perfectly representative of their national populations. Furthermore, it is also likely that the level of representativeness differed across nations. Thus, the cross-cultural effects reported here could in part be driven by such differences in the level of national representativeness.

Concerning personhood and standing, participants from Japan were significantly more likely to endorse personhood and standing for humans living in the near and far future than other groups, whereas participants from Mexico were significantly less likely to endorse personhood and standing for humans living in the near and far future than other groups. With respect to Part III of the study on whether the welfare of future generations ought to outweigh the welfare of present generations in at least some cases, overall endorsement rates were significantly lower among participants in the United Kingdom and Mexico, and significantly higher among participants in Australia, Japan, and Korea. As noted above, the magnitude of these effects are small compared to the overall similarities participants across countries displayed in their overwhelming endorsement for providing legal protection to future generations. Nonetheless, these findings indicate that there is substantial cross-cultural variation with regard to perceptions of how future generations are and ought to be treated under the law.

When clustering countries based on region, similar parity was observed, as participants from both the Global North and Global South (a) desired higher rates of legal protection for future generations than the perceived current level; (b) endorsed standing and personhood for humans living in the near and far future; and (c) endorsed the proposition that the interests of future generations ought to outweigh those of the present generation in the context of international lawmaking in at least some possible cases. Here again, small but statistically significant differences were observed, as the first two findings were stronger among Global South participants than Global North participants; and the third finding was stronger among Global North participants.

## **2. Politics**

With respect to politics, participants from both sides of the political aisle desired far more legal protection for future generations than the amount currently afforded to them under existing

legal systems. At the same time, our results also revealed several significant differences between left-leaning participants and conservatives. Politically left-leaning participants were significantly more likely to endorse both personhood and standing for humans living in the near future and far future than were centrists and conservatives, and were significantly more likely than centrists and conservatives to endorse the proposition there are at least some possible scenarios in which the welfare of future people should outweigh that of present people, indicating that support for protection of future generations may be higher among politically left-leaning individuals than political conservatives.

At the same time, although left-leaning participants gave significantly higher ratings of desired legal protection overall than did centrists and conservatives, they gave disproportionately lower ratings to humans living in the near future and far future relative to other groups compared to centrists and conservatives, suggesting that their apparently higher endorsement of general legal protection to future generations may relate to a more expansive moral circle overall as opposed to a more specific preference towards protecting future generations (cf. Waytz et al. 2016; Waytz et al. 2019).

### **3. Gender**

Overall, the main results were even more robust to gender differences than political differences among participants, as male and female participants endorsed similar levels of legal protection to future generations. With regard to the differences that were observed, female participants gave significantly higher ratings for the desired level of legal protection to groups overall, and male participants gave disproportionately higher ratings for humans living in the near future relative to other groups compared to female participants. Male participants were also significantly more likely to endorse standing for humans living in the near future and far future

compared to other groups, and were also significantly more likely than female participants to endorse the proposition that there are at least some possible scenarios in which the welfare of future people should outweigh that of present people. While these results should not be taken to overshadow the overwhelming parity among genders in their responses, these results do indicate potential connections between gender and perceptions of how future generations ought to be treated under the law.

#### *E. Towards a Cross-Cultural Understanding of the Ordinary Concept of Law*

Beyond documenting the intuitive appeal of attitudes towards law and future generations, these results also have implications regarding our understanding of people's perceptions of the law more generally.

For example, participants in our sample rated the desired level of legal protection as higher than the perceived current level of protection afforded to several groups in addition to future generations, including the environment, humans outside the jurisdiction, and non-human animals, suggesting that people across the world desire greater levels of legal protection to groups that are currently neglected by national and international law.

Conversely, in virtually every country in our sample, participants rated the desired level of legal protection for corporations to be lower than the perceived current level of protection afforded to corporations, indicating that people cross-culturally do not desire greater protection for all groups across the board, but may in fact perceive law as providing too much legal protection to certain groups.

Our results also provide information about people's varying perceptions of the role of national vs. international law. On the one hand, our results revealed no significant difference

between participant ratings of the perceived current level of legal protection afforded to groups on average at the national vs. international level, indicating that people across the world view their national government and international organizations as providing similar levels of legal protection to different groups relative to their capacity to do so (albeit distributed differently across groups). On the other hand, the fact that participant ratings of the desired level of legal protection afforded to different groups overall were significantly higher at the national level indicates that people view their national government as being more responsible for providing legal protection than international organizations.

Finally, our results add to a burgeoning literature within the experimental jurisprudence landscape concerned with documenting cross-cultural stability and variation of legally relevant concepts and theories, such as textualism (Hannikainen et al., 2021b) and retrospective laws (Hannikainen et al., 2021a). The results of the present study similarly reveal cross-cultural stability and variation regarding the ordinary understanding of (a) the role of nation-states and international organizations in protecting various entities, as well as (b) the ordinary understanding of concepts such as personhood and standing.

With regard to (a), on the one hand, our results revealed surprising cross-cultural convergence in terms of which groups participants rated as over- or under-protected in their current legal system. Virtually every country rated the environment as the most under-protected group and corporations as the most over-protected group, as measured by the mean difference between desired and perceived current legal protection. On the other hand, there was also high cross-cultural variability regarding the degree to which participants believed law should provide general legal protection to certain groups. Most notably, the desired level of legal protection, as well as the gap between the desired and current level of legal protection was significantly lower in certain

countries (such as Japan and Korea) than other countries in our sample, indicating that cultures may vary in the degree to which they view law as having a responsibility to provide general legal protection to certain entities.

Concerning (b), participants within each country displayed surprisingly similar endorsement rates for personhood and standing for different groups. For example, as mentioned before, for every country in our sample, a majority of participants endorsed personhood for humans living in the near and far future, while the same was also true for standing in the majority of countries in our sample. At the same time, there was also substantial variation, as participants in Japan and Korea, for example, had significantly lower endorsement rates for standing and personhood overall than participants as a whole, suggesting that cultures may also vary in the degree to which they view entities as having the fundamental right to access to the legal system.

#### *F. Evaluating the Legal Validity of Protecting Future Generations*

As mentioned above, these results reveal robust cross-cultural support for the view that law should protect the interests of future generations and ensure that the long-term future goes particularly well. In addition to this descriptive contribution, some may also view this as having normative implications regarding the validity of this view.

There is a burgeoning literature in the area of experimental jurisprudence dedicated to advancing philosophical, doctrinal, and policy arguments on the basis of experimental results (see, e.g., Tobia, 2022; Prochownik, 2021; Martínez & Winter, forthcoming). Within this literature, there is considerable debate regarding to what degree and how lay judgments—as opposed to expert judgments—should inform or dictate questions of legal philosophy, doctrine, and policy,

depending largely on the degree to which one views law through a democratic (as opposed to, say, technocratic) lens (Tobia, 2022; Jimenez, forthcoming; Martínez & Winter, forthcoming).

Insofar as one believes that lay attitudes should guide legal doctrine and policy, our results provide support for the validity of granting legal protection to future generations.<sup>18</sup> From this perspective, the robust cross-cultural support for increasing the protection of humans living in the near and far future significantly beyond their current level supports that existing legal institutions should be reformed so as to increase protection well beyond the current level afforded to them.<sup>19</sup> Additionally, the robust cross-cultural support for endorsing standing and personhood suggests that personhood and standing ought to be granted not only to present generations but also to future generations in at least some possible cases.

Finally, recall that the majority of participants endorsed the proposition that there are at least some possible scenarios in which the welfare of future people should outweigh that of present people, in the context of both national and international policymaking. This suggests through a democratic lens that national and international lawmakers should not only prioritize future generations beyond their current level but potentially prioritize their interests over those of the present generation in at least some possible scenarios.

### *G. Predicting the Future of Future Generations in Law*

Adequately increasing legal protection for future generations may seem far-fetched given current legal and political systems' neglect of those generations. However, recent literature

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<sup>18</sup> Note also that, as mentioned above, the idea of providing protection to future generations and/or more generally not discounting welfare as a function of time is endorsed by moral philosophers, theoretical economists, and legal experts around the English-speaking world, indicating that one might draw similar conclusions regarding the validity of legal protection for future generations even if one believes expert attitudes (as opposed to lay attitudes) should inform legal doctrine and policy.

<sup>19</sup> For examples of such reform proposals, *see e.g.* John & MacAskill (2021); Phillips-Robins (2022); Farber (2022); Livermore (2022).

suggests that legal mechanisms already exist to protect future generations across a variety of jurisdictions. For example, in Martínez and Winter's (2021a) global law professor survey, a majority of respondents from across the English-speaking world endorsed the proposition that there is a reasonable legal basis for granting standing to humans living in the near future. Meanwhile, in Martínez and Tobia's (2023) United States law professor survey, a majority of respondents endorsed granting personhood to at least some subset of humans living in the near-future. Insofar as legal academics are experts on these issues, their responses should be taken as evidence of there being a plausible legal basis for increasing legal protection for future generations according to existing legal doctrine.

Furthermore, consulting legal sources more directly, recent work by Araújo and Koessler (2021) found that constitutions referencing future generations now comprise roughly one-third of all constitutions in force. Although most of these reference future generations alongside or in the context of environmental protection (62%) and natural resources (35%), some constitutions (22%) mention future generations *stricto sensu*, by themselves without another theme mentioned, suggesting that the desire to protect future generations is shared not only by the global citizenry but also by law-makers at the highest level.

Although by themselves these provisions merely constitute *de jure* legal protection, the results of the present study may provide encouraging signs that such protection may ultimately become *de facto* legal protection. For example, some legal scholars have hypothesized that the application of the law is sensitive to—and perhaps even determined by—the will of the people, such that a legal provision theoretically granting party X certain privilege Y will only be (a) interpreted as such by a judge in a relevant legal decision, and/or (b) commensurately enforced as

such by the relevant jurisdiction insofar as a sufficient proportion of the populace is in favor of it being interpreted as such.<sup>20</sup>

In the context of legal protection for future generations, for example, suppose that country Z's constitution contained a provision providing for the general protection of the rights of future generations. According to this view, the courts may choose to enact that provision only if country Z's citizenry are sufficiently in favor of actually granting legal protection to future generations. Accordingly, the fact that the present study revealed robust cross-cultural support for future generations should provide a source of optimism for the prospect that law will protect future generations.<sup>21</sup>

## V. CONCLUSION

The present study has provided the first cross-cultural investigation of people's beliefs regarding law's role in protecting the long-term future. Surveying laypeople from 10 different countries spanning all inhabited continents, we found that participants widely endorsed (a) increasing legal protection for future humans beyond current levels via national and international law and policy; (b) extending personhood and standing to some subset of humans living in the near

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<sup>20</sup> See Post & Siegel (2007) ("judicial authority to enforce the Constitution, like the authority of all government officials, ultimately depends on the confidence of citizens. If courts interpret the Constitution in terms that diverge from the deeply held convictions of the American people, Americans will find ways to communicate their objections and resist judicial judgments."); Bliss (2021) (making the same point regarding *Shelley v. Kraemer*, that the justices appeared to have been swayed by the overwhelming sense of public policy importance); cf. Klarman (2004) (noting that the *Brown* decision was the product of its historical moment more than doctrinal developments).

<sup>21</sup> Indeed, recent judgments indicate that this process has already started. For instance, the German Federal Constitutional Court in *Neubauer et al. v. Germany* (2021) relied on Art. 20a German Basic Law to protect future generations, nearly 20 years after the Article's enactment. The judgment further developed a novel constitutional argument viewing fundamental rights as "intertemporal guarantees of freedom." Given that this approach does not rely on the uniqueness of German fundamental rights law, it seems reasonable to suppose that it may be adopted elsewhere, particularly in light of this study's results showing the global public's desire for more protection for future generations. For further examples, see *State of the Netherlands v. Urgenda Foundation* (Supreme Court of the Netherlands 2019); *Millieudefensie et al. v. Royal Dutch Shell plc* (Hague District Court 2021). But see *Juliana v. United States* (United States Supreme Court 2020) at 1175.

and far future; and (c) prioritizing the interests of future people over those of present people in some possible cases.

While these findings were robust to major demographic differences, we also found significant correlations between participant ratings and factors such as politics, gender, and country of origin. We also found significant differences between how participants rated legal protection of various groups at the national level relative to the international level. While it is important to be cautious about the generalizability beyond the surveyed sample (for example, the views of South Africans may not be the most representative of those of African countries as a whole), taken together, our results suggest that the notion of granting rights and legal protection to future generations is in fact endorsed across a range of cultures and demographic factors. This wide-ranging support carries implications not only for the intuitive appeal of legal protection for future generations, but also for broader debates of legal theory, doctrine, and policy.

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## APPENDIX

Here we present additional results from each part of our experiment not reported in the main text.

### *A. Current vs. Desired Legal Protection*

#### **1. Current Levels of Legal Protection**

The group with the highest perceived current level of legal protection at the national level was corporations (68.7; 95% CI: 67.7 to 69.6), followed by humans inside the jurisdiction (61.5; 95% CI: 60.7 to 62.4), unions (50.7; 95% CI: 49.8 to 51.6), the environment (44.2; 95% CI: 43.3 to 45.1), humans outside the jurisdiction (43.0; 95% CI: 42.1 to 43.9), non-human animals (42.0; 95% CI: 41.0 to 42.9), humans living in the near future (35.0; 95% CI: 33.9 to 35.9), humans living in the far future (29.8; 95% CI: 28.8 to 30.8), and sentient artificial intelligence (18.7; 95% CI: 17.8 to 19.5). Similar ordinal tendencies were observed within each individual country.

At the international level, participants perceived international organizations as providing more protection for humans living in the near future (39.9; 95% CI: 39.0 to 41.0) and for humans living in the far future (38.2; 95% CI: 37.1 to 39.3) compared to national legal systems, both overall and relative to other groups. International organizations were perceived as providing the greatest protection to humans living in the jurisdiction (57.1; 95% CI: 56.2 to 58.1), followed by corporations (53.3; 95% CI: 52.3 to 54.4), the environment (50.1; 95% CI: 49.2 to 51.0), humans outside the jurisdiction (49.4; 95% CI: 48.4 to 50.4), non-human animals (42.8; 95% CI: 41.9 to 43.8), humans living in the near future (39.9; 95% CI: 39.0 to 41.0), unions (39.3; 95% CI: 38.2 to 40.3), humans living in the far future (38.2; 95% CI: 37.1 to 39.3), and sentient artificial intelligence (22.3; 95% CI: 21.3 to 23.3). Similar ordinal tendencies were observed within each individual country. With regard to different countries, our model revealed that (a) participants from

Spain ( $\beta=2.094$ ,  $SE=0.948$ ,  $p=5.56*10^{-6}$ ), South Africa ( $\beta=4.622$ ,  $SE=0.958$ ,  $p=1.47*10^{-6}$ ), Japan ( $\beta=3.079$ ,  $SE=1.022$ ,  $p=.003$ ), and Korea ( $\beta=3.067$ ,  $SE=1.022$ ,  $p=0.003$ ) gave significantly higher ratings for perceived current level of protection than participants as a whole, and (b) participants from Mexico ( $\beta=-2.977$ ,  $SE=0.949$ ,  $p=0.002$ ), and United States ( $\beta=-0.248$ ,  $SE=0.966$ ,  $p=0.010$ ) gave significantly lower ratings than participants as a whole.

Our model also revealed several significant interactions between nationality and group. Relative to other groups, the perceived current protection for humans living in the near future was (a) significantly lower in South Africa ( $\beta=-3.84$ ,  $SE=0.765$ ,  $p=*10^{-7}$ ), United Kingdom ( $\beta=-5.742$ ,  $SE=0.779$ ,  $p=1.66*10^{-13}$ ), Canada ( $\beta=-2.510$ ,  $SE=0.781$ ,  $p=.001$ ), and Australia ( $\beta=-1.683$ ,  $SE=0.770$ ,  $p=.029$ ) and (b) significantly higher in Chile ( $\beta=3.715$ ,  $SE=0.758$ ,  $p=9.7*10^{-7}$ ), Japan ( $\beta=7.581$ ,  $SE=0.827$ ,  $p<2*10^{-16}$ ) and Korea ( $\beta=4.074$ ,  $SE=0.748$ ,  $p<2*10^{-16}$ ).

With regard to humans living in the far future, relative to other groups, the perceived current protection was (a) significantly lower among participants in Spain ( $\beta=-2.984$ ,  $SE=7.573*10^{-1}$ ,  $p=8.15*10^{-5}$ ), South Africa ( $\beta=-1.563$ ,  $SE=0.765$ ,  $p=0.041$ ), United Kingdom ( $\beta=-4.127$ ,  $SE=0.779$ ,  $p=1.16*10^{-7}$ ), Canada ( $\beta=-2.862$ ,  $SE=0.781$ ,  $p=.0002$ ), Australia ( $\beta=-1.882$ ,  $SE=0.770$ ,  $p=.015$ ) and United States ( $\beta=-2.029$ ,  $SE=0.772$ ,  $p=0.009$ ); and (b) significantly higher among participants from Japan ( $\beta=8.703$ ,  $SE=0.827$ ,  $p<2*10^{-16}$ ) and Korea ( $\beta=7.109$ ,  $SE=0.748$ ,  $p=2.60*10^{-5}$ ).

## **2. Desired Levels of Legal Protection**

The group with the highest level of desired legal protection at the national level was humans inside the jurisdiction (87.3; 95% CI: 86.5 to 88.1), followed by the environment (82.6; 95% CI: 81.7 to 83.5), non-human animals (71.2; 95% CI: 70.1 to 72.2), humans living in the near future (65.4; 95% CI: 64.3 to 66.7), unions (62.4; 95% CI: 61.3 to 63.4), humans outside the

jurisdiction (62.2; 95% CI: 61.1 to 63.3), humans living in the far future (59.0; 95% CI: 57.8 to 60.3), corporations (49.2; 95% CI: 48.1 to 50.3), and sentient artificial intelligence (40.9; 95% CI: 39.8 to 42.1). Similar ordinal tendencies were observed within each individual country.

At the international level, the group with the highest level of desired legal protection was the environment (81.3; 95% CI: 80.3 to 82.3), followed by humans inside the jurisdiction (80.9; 95% CI: 80.0 to 82.0), humans outside the jurisdiction (72.1; 95% CI: 71.0 to 73.3), non-human animals (70.5; 95% CI: 69.4 to 71.6), humans living in the near future (64.4; 95% CI: 63.2 to 65.6), humans living in the far future (61.4; 95% CI: 60.2 to 62.6), unions (53.6; 95% CI: 52.5 to 54.8), corporations (41.5; 95% CI: 40.4 to 42.7), and sentient artificial intelligence (38.1; 95% CI: 37.0 to 39.3). Similar ordinal tendencies were observed within each individual country.

Our regression analyses revealed that participants overall (a) had significantly higher ratings for humans living in the jurisdiction ( $\beta=18.156$ ,  $SE=0.405$ ,  $p<2*10^{-16}$ ), humans outside the jurisdiction ( $\beta=9.351$ ,  $SE=0.405$ ,  $p<2*10^{-16}$ ), non-human animals ( $\beta=7.776$ ,  $SE=0.405$ ,  $p<2*10^{-16}$ ), the environment ( $\beta=18.63$ ,  $SE=0.405$ ,  $p<2*10^{-16}$ ), and humans living in the near future ( $\beta=1.832$ ,  $SE=0.405$ ,  $p=7.47*10^{-7}$ ), (b) had significantly lower ratings for corporations ( $\beta=-18.125$ ,  $SE=0.405$ ,  $p<2*10^{-16}$ ), unions ( $\beta=-5.596$ ,  $SE=0.405$ ,  $p<2*10^{-16}$ ), humans living in the far future ( $\beta=-1.157$ ,  $SE=0.405$ ,  $p=0.004$ ), and sentient AI ( $\beta=-24.47$ ,  $SE=0.405$ ,  $p,2*10^{-16}$ ).

With regard to international vs. national law, our model revealed that participants desired more protection from national law than international law ( $\beta=1.978$ ,  $SE=0.202$ ,  $p<2*10^{-16}$ ). In particular, participants believed that humans living in the far future should receive disproportionately more protection from national legal systems relative to international organizations, as compared to other groups ( $\beta=-4.237$ ,  $SE=0.570$ ,  $p=1.10*10^{-13}$ ).

With regard to different countries, our model revealed that (a) participants from Korea ( $\beta=-17.063$ ,  $SE=0.987$ ,  $p<2*10^{-16}$ ) and Japan ( $-9.651$ ,  $SE=1.086$ ,  $p<2*10^{-16}$ ) desired less protection than participants as a whole, and (b) participants from Spain ( $\beta=4.588$ ,  $SE=1.007$ ,  $p=5.48*10^{-6}$ ), South Africa ( $\beta=9.178$ ,  $SE=1.020$ ,  $p<2*10^{-16}$ ), the United Kingdom ( $\beta=2.327$ ,  $SE=1.036$ ,  $p=0.025$ ), Mexico ( $\beta=6.195$ ,  $SE=1.015$ ,  $p=1.18*10^{-9}$ ), and Chile ( $\beta=3.445$ ,  $SE=1.009$ ,  $p=.0006$ ) desired more.

Our model also revealed several significant interactions between nationality and group. Relative to other groups, the desired protection for humans living in the near future was (a) significantly lower among participants in Mexico ( $\beta=-7.218$ ,  $SE=0.846$ ,  $p<2*10^{-16}$ ) and Chile ( $\beta=-1.704$ ,  $SE=0.841$ ,  $p=0.043$ ) and (b) significantly higher among participants from Japan ( $\beta=3.825$ ,  $SE=0.918$ ,  $p=3.09*10^{-5}$ ).

With regard to humans living in the far future, relative to other groups, the desired protection was (a) significantly lower among participants in Spain ( $\beta=-1.651$ ,  $SE=0.840$ ,  $p<.05$ ), United Kingdom ( $\beta=-2.593$ ,  $SE=0.864$ ,  $p=0.003$ ), and Mexico ( $\beta=-3.653$ ,  $SE=0.846$ ,  $p=1.59*10^{-5}$ ) and (b) significantly higher among participants from Japan ( $\beta=5.429$ ,  $SE=0.918$ ,  $p=3.35*10^{-9}$ ) and Korea ( $\beta=3.490$ ,  $SE=0.830$ ,  $p=2.60*10^{-5}$ ).

### **3. Desired vs. Current Legal Protection**

The difference between the desired and current levels of legal protection reflect how much more protection respondents wanted for different groups. When comparing the desired vs. current level of legal protection, across all participants, the mean difference (i.e., desired minus current) at the national level was 30.5 for humans living in the near future (95% CI: 29.2 to 31.8) and 29.3 for humans living in the far future (95% CI: 28.0 to 30.5)—the second and third largest gaps across all groups.

The group with the highest mean difference between desired and current legal protection at the national level was the environment (38.4; 95% CI: 37.3 to 39.6), followed by humans living in the near future (30.4; 95% CI: 29.2 to 31.8), humans living in the far future (29.3; 95% CI: 28.0 to 30.5), non-human animals (29.2; 95% CI: 28.0 to 30.3), humans inside the jurisdiction (25.8; 95% CI: 24.9 to 26.8), sentient artificial intelligence (22.2; 95% CI: 21.0 to 23.4), humans outside the jurisdiction (19.2; 95% CI: 17.8 to 20.5), unions (11.7; 95% CI: 10.4 to 13.0), and corporations (-19.4; 95% CI: -20.7 to -18.2). Similar ordinal tendencies were observed within each individual country.

At the international level, the mean difference (i.e., desired minus current) was 24.5 for humans living in the near future (95% CI: 23.3 to 25.7) and 23.2 for humans living in the far future (95% CI: 22.1 to 24.4)—the third and fifth largest differences among the nine groups.

The group with the highest mean difference between desired and current legal protection at the international level was the environment (31.2; 95% CI: 30.0 to 32.4), non-human animals (27.7; 95% CI: 26.5 to 28.9), followed by humans living in the near future (24.5; 95% CI: 23.3 to 25.7), humans inside the jurisdiction (23.8; 95% CI: 22.8 to 24.8), humans living in the far future (23.2; 95% CI: 22.1 to 24.4), humans outside the jurisdiction (22.7; 95% CI: 21.6 to 23.8), sentient artificial intelligence (15.8; 95% CI: 14.7 to 16.9), unions (14.3; 95% CI: 13.2 to 15.4), and corporations (-11.7; 95% CI: -13.0 to -10.5). Similar ordinal tendencies were observed within each individual country.

With regard to different countries, our model revealed that the difference between desired and current legal protection: (a) was significantly higher for participants from Spain ( $\beta=2.480$ ,  $SE=0.8742$ ,  $p=0.005$ ), South Africa ( $\beta=4.658$ ,  $SE=0.885$ ,  $p=1.51*10^{-7}$ ), Mexico ( $\beta=6.313$ ,  $SE=0.881$ ,  $p=9.67*10^{-13}$ ), Chile ( $\beta=6.408$ ,  $SE=0.876$ ,  $p=3.23*10^{-13}$ ), and Australia ( $\beta=2.723$ ,

SE=0.889,  $p=0.002$ ), and (b) significantly lower for participants from Japan ( $\beta=-12.7$ , SE=0.944,  $p<2*10^{-16}$ ) and Korea ( $\beta=-12.44$ , SE=0.858,  $p<2*10^{-16}$ ).

Our model also revealed several significant interactions between nationality and group. Our model revealed that, relative to other groups, the difference between desired and current legal protection of humans living in the near future was (a) significantly higher among participants from South Africa ( $\beta=3.480$ , SE=1.003,  $p<0.001$ ), United Kingdom ( $\beta=5.014$ , SE=1.021,  $p=9.03*10^{-7}$ ), Canada ( $\beta=4.178$ , SE=1.024,  $p=4.5*10^{-5}$ ), and Australia ( $\beta=3.221$ , SE=1.01,  $p=.001$ ) compared to other countries and (b) disproportionately lower among participants from Mexico ( $\beta=-6.467$ , SE=1.000,  $p=1.03*10^{-10}$ ), Chile ( $\beta=-5.419$ , SE=.994,  $p=5.06*10^{-8}$ ), Japan ( $\beta=-3.756$ , SE=1.085,  $p<.001$ ), and Korea ( $\beta=-2.406$ , SE=0.757,  $p=0.003$ ).

With respect to humans living in the far future, relative to other groups, the difference between desired and current legal protection was (a) significantly higher among participants from Canada ( $\beta=2.377$ , SE=1.024,  $p=0.02$ ) and the United States ( $\beta=3.008$ , SE=1.013,  $p=0.003$ ), and (b) significantly lower among participants from Mexico ( $\beta=-3.275$ , SE=0.758,  $p<2*10^{-16}$ ), Japan ( $\beta=3.715$ , SE=1.085,  $p=0.003$ ), and Korea ( $\beta=-3.619$ , SE=0.981,  $p<.001$ ).

## *B. Personhood and Standing*

### **1. Personhood**

With respect to nationality, our analysis revealed that (a) participants in Spain ( $\beta<0.300$ , SE=0.086,  $p<0.0005$ ), Mexico ( $\beta=0.337$ , SE=0.088,  $p<0.001$ ), and South Africa ( $\beta<0.362$ , SE=0.081,  $p=8.89*10^{-6}$ ) endorsed personhood at a significantly higher rate than participants overall; and (b) participants in Japan ( $\beta=-0.822$ , SE=0.083,  $p<2*10^{-16}$ ) and Korea ( $\beta=-0.657$ , SE=0.075,  $p<2*10^{-16}$ ) endorsed personhood at a significantly lower rate than participants overall. Our analysis also revealed several significant interactions between nationality and group; with

regard to future humans specifically, relative to other countries: (a) participants from the United Kingdom ( $\beta=-0.367$ ,  $SE=0.134$ ,  $p=0.006$ ) and Mexico ( $\beta=-0.367$ ,  $SE=0.138$ ,  $p=0.008$ ) were significantly less likely to endorse personhood for humans living in the far future compared to other groups, (b) participants from Mexico were significantly less likely to endorse personhood for humans living in the near future ( $\beta=-0.582$ ,  $SE=0.136$ ,  $p=1.90*10^{-5}$ ) compared to other groups; and (c) participants from Japan were significantly more likely to endorse personhood for humans living in both the near future ( $\beta=0.719$ ,  $SE=0.147$ ,  $p=9.57*10^{-7}$ ) and the far future ( $\beta=0.879$ ,  $SE=0.149$ ,  $p=3.27*10^{-9}$ ) compared to other groups.

## 2. Standing

Regarding nationality, our analysis revealed that (a) participants in Spain ( $\beta=0.392$ ,  $SE=0.090$ ,  $p=1.31*10^{-5}$ ), Chile ( $\beta=0.188$ ,  $SE=0.087$ ,  $p=0.030$ ), Mexico ( $\beta=0.447$ ,  $SE=0.097$ ,  $p=3.88*10^{-6}$ ), South Africa ( $\beta=0.360$ ,  $SE=0.088$ ,  $p=424*10^{-5}$ ) and Australia ( $\beta=0.267$ ,  $SE=0.096$ ,  $p=.005$ ) endorsed standing at a significantly higher rate than participants overall, and (b) participants in Japan ( $\beta=-0.867$ ,  $SE=0.089$ ,  $p<2*10^{-16}$ ) and Korea ( $\beta=-0.677$ ,  $SE=0.081$ ,  $p<2*10^{-16}$ ) endorsed standing at a significantly lower rate than participants overall. Our analysis also revealed several significant interactions between nationality and group; with regard to future humans specifically, relative to other countries: (a) participants from Australia ( $\beta=-0.362$ ,  $SE=0.134$ ,  $p=0.007$ ), Chile ( $\beta=-0.368$ ,  $SE=0.124$ ,  $p=0.003$ ), Canada ( $\beta=-0.321$ ,  $SE=0.136$ ,  $p=0.018$ ), Mexico ( $\beta=-0.349$ ,  $SE=0.132$ ,  $p=0.008$ ), the United Kingdom ( $\beta=-0.307$ ,  $SE=0.134$ ,  $p=0.022$ ) and the United States ( $\beta=-0.266$ ,  $SE=0.125$ ,  $p=0.033$ ) were significantly less likely to endorse standing for humans living in the far future compared to other groups; (b) participants from participants from Chile ( $\beta=-0.299$ ,  $SE=0.124$ ,  $p=0.016$ ), Canada ( $\beta=-0.411$ ,  $SE=0.136$ ,  $p=0.002$ ), and Mexico ( $\beta=-0.378$ ,  $SE=0.132$ ,  $p=0.004$ ) were significantly less likely to endorse

standing for humans living in the near future compared to other groups; and (c) participants from Japan and Korea were significantly more likely to endorse standing for humans living in both the near future (Japan:  $\beta=1.393$ ,  $SE=0.149$ ,  $p<2*10^{-16}$ ; Korea:  $\beta=0.526$ ,  $SE=0.053$ ,  $p=1.47*10^{-6}$ ) and the far future (Japan:  $\beta=1.447$ ,  $SE=0.149$ ,  $p<2*10^{-16}$ ; Korea:  $\beta=0.635$ ,  $SE=0.124$ ,  $p=2.77*10^{-7}$ ) compared to other groups.

### *C. Rights of Future vs. Present Humans*

The country with the highest endorsement percentage for the proposition at the international level was Japan (64.8%; 95% CI: 58.0 to 71.5), followed by Korea (62.5%; 95% CI: 56.9 to 68.2), Australia (60.4%; 95% CI: 54.2 to 66.3), Chile (57.7%; 95% CI: 52.0 to 63.8), Canada (57.2%; 95% CI: 51.3 to 63.2), United States (53.5%; 95% CI: 47.3 to 59.0), South Africa (51.4%; 95% CI: 46.0 to 57.2), Spain (48.8%; 95% CI: 42.7 to 54.4), Mexico (44.4%; 95% CI: 39.1 to 50.5), and the United Kingdom (43.6%; 95% CI: 37.8 to 49.8).

In the context of national law-making, the country with the highest endorsement percentage was Japan (61.7%; 95% CI: 54.4 to 68.4), followed by Korea (58.3%; 95% CI: 52.3 to 64.3), Australia (57.1%; 95% CI: 51.5 to 63.1), Canada (56.2%; 95% CI: 50.2 to 62.2), the United States (53.1%; 95% CI: 46.9 to 59.3), Chile (51.9%; 95% CI: 45.9 to 57.6), South Africa (51.6%; 95% CI: 45.5 to 57.7), the United Kingdom (45.4%; 95% CI: 39.3 to 51.5), Spain (42.3%; 95% CI: 36.6 to 47.7), and Mexico (39.5%; 95% CI: 33.7 to 45.7).

Our regression models revealed endorsement rates to be significantly higher at the international level than at the national level ( $\beta=-2.691*10^{-2}$ ,  $SE=6.779*10^{-3}$ ,  $p<7.4*10^{-5}$ ). Our regression model also revealed overall endorsement rates to be significantly lower than average in the United Kingdom ( $\beta=-1.067*10^{-1}$ ,  $SE=2.898*10^{-2}$ ,  $p<.001$ ), and Mexico ( $\beta=-1.013*10^{-1}$ ,  $SE=2.815*10^{-2}$ ,  $p<.001$ ), and significantly higher in Australia ( $\beta=5.873*10^{-2}$ ,  $SE=2.845*10^{-2}$ ,

$p=0.04$ ), Japan ( $\beta=1.000*10^{-1}$ ,  $SE=3.328*10^{-2}$ ,  $p=0.003$ ), and Korea ( $\beta=8.023*10^{-2}$ ,  $SE=2.878*10^{-2}$ ,  $p=0.005$ ).

#### *D. Influence of Demographic Factors*

As reported in the main text, our main results were largely robust to demographic differences. However, there were also significant correlations and effects among demographic variables such as politics and gender and participant responses. Here we discuss these effects in turn.

##### **1. Politics**

With regard to current legal protection, among left-leaning participants, the mean overall perceived current level of protection for humans living in the near future was 36.1 (95% CI: 35.1 to 37.2), and for humans living in the far future 31.8 (95% CI: 30.7 to 32.8). Among centrist and right-leaning participants, the mean perceived current level of protection for humans living in the near future was 38.6 (95% CI: 37.6 to 39.7), and for humans living in the far future 35.8 (95% CI: 34.9 to 36.9).

With regard to desired legal protection, among left-leaning participants, the mean overall desired level of protection for humans living in the near future was 67.4 (95% CI: 66.3 to 68.6), and for humans living in the far future 63.5 (95% CI: 62.3 to 64.7). Among centrist and right-leaning participants, the mean desired level of protection for humans living in the near future was 63.7 (95% CI: 62.5 to 64.7), and for humans living in the far future 58.2 (95% CI: 57.0 to 59.5).

Adding politics as a fixed effect to our regression models yielded several significant results. With regard to legal protection, our models revealed that politically left-leaning participants, relative to conservative-leaning participants: (a) gave significantly lower ratings of current legal protection overall ( $\beta=-9.078*10^{-1}$ ,  $SE=2.349*10^{-1}$ ,  $p=.0001$ ); (b) gave significantly higher ratings

of desired legal protection ( $\beta=2.204$ ,  $SE=0.2471$ ,  $p<2*10^{-16}$ ) overall, but disproportionately lower ratings to humans living in the near future ( $\beta=-9.749*10^{-1}$ ,  $SE=2.136*10^{-1}$ ,  $p<5.02*10^{-6}$ ); and (c) had a significantly higher difference between desired and current legal protection ( $\beta=3.111$ ,  $SE=2.158*10^{-1}$ ,  $p<2*10^{-16}$ ), but disproportionately lower difference for humans living in the near future ( $\beta=-1.285$ ,  $SE=2.523*10^{-1}$ ,  $p<3.54*10^{-7}$ ).

With regard to personhood, 78.1% of left-leaning participants endorsed personhood for humans living in the near future (95% CI: 75.6 to 80.4), and 77.8% of male participants endorsed personhood for humans living in the far future (95% CI: 75.5 to 80.3). Among centrist and right-leaning participants, 74.5% endorsed personhood for humans living in the near future (95% CI: 72.5 to 77.2), and 72.2% endorsed personhood for humans living in the far future (95% CI: 69.8 to 74.5).

With regard to standing, 57.5% of left-leaning participants endorsed personhood for humans living in the near future (95% CI: 54.6 to 60.2), and 53.5% endorsed personhood for humans living in the far future (95% CI: 50.9 to 56.2). Among centrist and right-leaning participants, 58.9% endorsed personhood for humans living in the near future (95% CI: 56.2 to 61.5), and 57.3% endorsed personhood for humans living in the far future (95% CI: 54.7 to 59.9).

Our personhood and standing models revealed that left-leaning participants were significantly more likely to endorse personhood ( $\beta=0.078$ ,  $SE=0.020$ ,  $p<.001$ ) and standing ( $\beta=0.155$ ,  $SE=0.0216$ ,  $p=8.09*10^{-13}$ ) overall than were conservative participants. Relative to conservative participants, left-leaning participants were also disproportionately more likely to endorse standing for humans living in the near future ( $\beta=-0.139$ ,  $SE=0.031$ ,  $p=1.02*10^{-5}$ ) and far future ( $\beta=-0.143$ ,  $SE=6.51*10^{-6}$ ,  $p<3.54*10^{-7}$ ) than for other groups.

With regard to valuing present vs. future welfare, 59.1% of left-leaning participants endorse the proposition that there are at least some possible cases in which the welfare of future generations should outweigh that of the present generation in the context of international lawmaking (95% CI: 56.3 to 62.0), and 55.2% endorsed the proposition in the context of national lawmaking (95% CI: 52.3 to 58.2). Among centrist and right-leaning participants, 50.0% endorsed personhood for humans living in the near future (95% CI: 47.3 to 52.6), and 48.1% endorsed personhood for humans living in the far future (95% CI: 45.6 to 51.1).

Our model revealed that left-leaning participants were significantly more likely to endorse the proposition that there are at least some possible cases in which the welfare of future people should outweigh that of present people ( $\beta=3.312*10^{-2}$ ,  $SE=7.112*10^{-3}$ ,  $p=3.34*10^{-6}$ ).

## **2. Gender**

With regard to current legal protection, among male participants, the mean overall perceived current level of protection for humans living in the near future was 38.0 (95% CI: 36.9 to 39.0), and for humans living in the far future 34.2 (95% CI: 33.1 to 35.2). Among female participants, the mean overall perceived current level of protection for humans living in the near future was 36.9 (95% CI: 35.8 to 38.0), and for humans living in the far future 33.8 (95% CI: 32.7 to 34.9).

With regard to desired legal protection, among male participants, the mean overall desired level of protection for humans living in the near future was 65.9 (95% CI: 64.8 to 67.0), and for humans living in the far future 61.2 (95% CI: 60.0 to 62.3). Among female participants, the mean overall desired level of protection for humans living in the near future was 64.9 (95% CI: 63.6 to 66.2), and for humans living in the far future 60.1 (95% CI: 58.9 to 61.5).

Our models did not reveal any significant effect of gender on perceived current levels of legal protection. However, our models did reveal that, relative to male participants, female participants: (a) gave significantly higher ratings of desired legal protection overall ( $\beta=2.096$ ,  $SE=0.688$ ,  $p=0.002$ ), but disproportionately lower ratings to humans living in the near future ( $\beta=-4.048$ ,  $SE=0.589$ ,  $p=6.36 \times 10^{-12}$ ) and far future ( $\beta=-3.535$ ,  $SE=0.589$ ,  $p=1.97 \times 10^{-9}$ ); and (b) had a significantly higher difference between desired and current legal protection ( $\beta=2.025$ ,  $SE=0.613$ ,  $p<0.001$ ), but disproportionately lower difference for humans living in the near future ( $\beta=-3.591$ ,  $SE=.699$ ,  $p=2.78 \times 10^{-7}$ ) and humans living in the far future ( $\beta=-3.443$ ,  $SE=0.699$ ,  $p=8.43 \times 10^{-7}$ ).

With regard to personhood, 76.1% of male participants endorsed personhood for humans living in the near future (95% CI: 73.8 to 78.3), and 74.8% of male participants endorsed personhood for humans living in the far future (95% CI: 72.3 to 78.3). Among female participants, 76.4% of female participants endorsed personhood for humans living in the near future (95% CI: 73.9 to 78.7), and 74.8% endorsed personhood for humans living in the far future (95% CI: 72.2 to 77.3).

With regard to standing, 57.3% of male participants endorsed personhood for humans living in the near future (95% CI: 54.6 to 59.9), and 53.5% of male participants endorsed personhood for humans living in the far future (95% CI: 59.6 to 56.2). Among female participants, 59.5% of female participants endorsed personhood for humans living in the near future (95% CI: 56.9 to 62.3), and 58.2% endorsed personhood for humans living in the far future (95% CI: 55.4 to 60.9).

Our personhood and standing models revealed that female participants were significantly more likely to endorse personhood ( $\beta=0.155$ ,  $SE=0.055$ ,  $p=0.005$ ) and standing ( $\beta=0.305$ ,  $SE=0.059$ ,  $p=1.90 \times 10^{-7}$ ) than men overall. At the same time, female participants, relative to male

participants, were significantly less likely to endorse standing for humans living in the near future ( $\beta=-0.193$ ,  $SE=0.087$ ,  $p=0.027$ ) than other groups.

With regard to valuing present vs. future welfare, 56.7% of male participants endorse the proposition that there are at least some possible cases in which the welfare of future generations should outweigh that of the present generation in the context of international lawmaking (95% CI: 54.1 to 59.2), and 54.5% of endorsed the proposition in the context of national lawmaking (95% CI: 51.9 to 57.1). Among female participants, 51.0% of female participants endorsed personhood for humans living in the near future (95% CI: 47.8 to 53.7), and 47.5% endorsed personhood for humans living in the far future (95% CI: 44.8 to 50.5).

Our model revealed that female participants were significantly less likely to endorse the proposition that there are at least some possible cases in which the welfare of future generations should outweigh that of the present generation ( $\beta=-0.051$ ,  $SE=0.020$ ,  $p<.001$ ).

### **3. Global North and Global South**

With regard to current legal protection, among Global North participants, the mean overall perceived current level of protection for humans living in the near future was 37.3 (95% CI: 36.3 to 38.2), and for humans living in the far future 34.0 (95% CI: 33.0 to 34.9). Among Global South participants, the mean overall perceived current level of protection for humans living in the near future was 37.8 (95% CI: 36.6 to 39.2), and for humans living in the far future 34.0 (95% CI: 32.7 to 35.2).

With regard to desired legal protection, among Global North participants, the mean overall desired level of protection for humans living in the near future was 63.5 (95% CI: 62.4 to 64.6), and for humans living in the far future 58.0 (95% CI: 56.9 to 59.0). Among Global South

participants, the mean overall desired level of protection for humans living in the near future was 68.1 (95% CI: 66.7 to 69.5), and for humans living in the far future 65.3 (95% CI: 63.8 to 66.7).

Our models did not reveal any significant effect of region on perceived current levels of legal protection. However, our models did reveal that, relative to Global North participants, Global South participants: (a) gave significantly higher ratings of desired legal protection overall ( $\beta=8.241$ ,  $SE=0.764$ ,  $p<2*10^{-16}$ ), but disproportionately lower ratings to humans living in the near future ( $\beta=-4.296$ ,  $SE=0.638$ ,  $p=1.65*10^{-11}$ ) and far future near future ( $\beta=-1.537$ ,  $SE=0.638$ ,  $p=0.016$ ); and (b) had a significantly higher difference between desired and current legal protection overall ( $\beta=7.806$ ,  $SE=0.681$ ,  $p<2*10^{-16}$ ) but disproportionately lower difference for humans living in the near future ( $\beta=-4.171$ ,  $SE=0.762$ ,  $p=4.46*10^{-8}$ ).

With regard to personhood, 75.7% of Global North participants endorsed personhood for humans living in the near future (95% CI: 73.9 to 77.7), and 73.5% of Global North participants endorsed personhood for humans living in the far future (95% CI: 71.5 to 75.4). Among Global South participants, 76.7% of Global South participants endorsed personhood for humans living in the near future (95% CI: 73.7 to 79.6), and 76.8% endorsed personhood for humans living in the far future (95% CI: 74.0 to 79.7).

With regard to standing, 57.5% of Global North participants endorsed personhood for humans living in the near future (95% CI: 55.3 to 59.8), and 54.2% of Global North participants endorsed personhood for humans living in the far future (95% CI: 52.0 to 56.4). Among Global South participants, 59.9% of Global South participants endorsed personhood for humans living in the near future (95% CI: 56.4 to 63.4), and 58.5% endorsed personhood for humans living in the far future (95% CI: 55.1 to 61.8).

Our personhood and standing models revealed that Global South participants were significantly more likely to endorse personhood ( $\beta=0.463$ ,  $SE=0.060$ ,  $p=1.33*10^{-14}$ ) and standing ( $\beta=0.959$ ,  $SE=0.230$ ,  $p=3.07*10^{-7}$ ) than Global North participants overall. At the same time, Global South participants, relative to Global North participants, were significantly less likely to endorse personhood for humans living in the near future ( $\beta=-0.962$ ,  $SE=0.259$ ,  $p<.001$ ) and far future ( $\beta=-0.825$ ,  $SE=0.258$ ,  $p=0.001$ ) than other groups; and were also less likely to endorse standing for humans living in the near future ( $\beta=-0.825$ ,  $SE=0.243$ ,  $p<.001$ ) and far future ( $\beta=-0.737$ ,  $SE=0.243$ ,  $p=0.002$ ) than other groups compared to Global North participants.

With regard to valuing present vs. future welfare, 55.5% of Global North participants endorsed the proposition that there are at least some possible cases in which the welfare of future generations should outweigh that of the present generation in the context of international lawmaking (95% CI: 53.1 to 57.7), and 53.0% endorsed the proposition in the context of national lawmaking (95% CI: 50.7 to 55.2). Among Global South participants, 51.2% of Global South participants endorsed personhood for humans living in the near future (95% CI: 47.7 to 54.6), and 47.7% endorsed personhood for humans living in the far future (95% CI: 44.3 to 51.1).

Our model did not reveal any significant differences between Global South and Global North participants with respect to the proposition that there are at least some possible cases in which the welfare of future generations should outweigh that of the present generation.