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What Do Nonreligious Nonbelievers Believe in? Secular Worldviews Around the World

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The global increase in nonreligious individuals begs for a better understanding of what nonreligious beliefs and worldviews actually entail. Rather than assuming an absence of belief or imposing a predetermined set of beliefs, this research uses an open-ended approach to investigate which secular beliefs and worldviews nonreligious nontheistic individuals in 10 countries around the world might endorse. Approximately, one thousand participants were recruited ($N = 996$; approximately 100 participants per country) and completed the online survey. A data-driven coding scheme of the open-ended question about the participants' beliefs and worldviews was created and includes 51 categories in 11 supercategories (agency and control, collaboration and peace, equality and kindness, morality, natural laws and the here and now, nonreligiosity, reflection and acceptance, science and critical thinking, spirituality, truth, and other). The 10 most frequently mentioned categories were science, humanism, critical skepticism, natural laws, equality, kindness and caring, care for the earth, left-wing political causes, atheism, and individualism and freedom. Patterns of beliefs were explored, demonstrating three worldview belief sets: scientific worldviews, humanist worldviews, and caring nature-focused worldviews. This project is a timely data-driven exploration of the content and range of global secular worldviews around the world and matches previous theoretical work. Future research may utilize these data and findings to construct more comprehensive surveys to be completed in additional countries.

Keywords: secular beliefs, worldviews, nonreligion, atheism, cross-cultural

Supplemental materials: https://doi.org/10.1037/rel0000480.supp

Both the global increase in individuals who lack religious faith or do not hold religious beliefs (Inglehart, 2021), as well as the concurrent increase in secular organizations and even secular rituals such as humanist weddings and funerals (Engelke, 2014) beg for a better understanding of what "unbelief" or secular belief entails. Unbelief has been defined as "a general absence of belief in religious tenets" and "the state of lacking (especially religious) faith or belief" (Lee & Bullivant, 2016). Thus, unbelief connotes a negative phenomenon, as lacking in religious beliefs, as scoring zero on a continuous religiosity scale (Beit-Hallahmi, 2007). However, while

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nonbelievers may not hold religious beliefs, they will still hold distinct ontological, epistemological, and ethical beliefs about reality (Coleman et al., 2022; Farias, 2013; Lee, 2015). To date, there have been numerous sociological and historical attempts to investigate these beliefs (Brown, 2017; Hout & Fischer, 2014; Inglehart & Welzel, 2005; Taylor, 2007; Turner, 1985) and worldviews in general (Droogers, 2014; Johnson et al., 2011; Koltko-Rivera, 2004; Taves et al., 2018), but few quantitative studies. The aim of this study was to empirically investigate the range of secular beliefs and worldviews held by people, as well the variation in these beliefs and worldviews across countries. This exploratory study examines the beliefs and worldviews of approximately 1,000 secular individuals in a set of 10 different countries around the world.

The study focused in particular on the *worldviews* of secular individuals, which was taken to signify the *set of beliefs* that describe or allow one to understand reality and one's existence within it: "Not all beliefs are worldview beliefs. Beliefs regarding the underlying nature of reality, 'proper' social relations or guidelines for living, or the existence or nonexistence of important entities are worldview beliefs. Other beliefs are not." (Koltko-Rivera, 2004, p. 5). Worldviews in this sense can be compared to *schemas*, which are cognitive structures that provide a template for concrete everyday objects and actions, generalized from direct, face-to-face experience (Johnson et al., 2011). Worldviews, by contrast, are cognitive structures for abstract concepts and hypothetical objects transmitted culturally (Koltko-Rivera, 2004). Importantly, while one can empirically assess the veracity of schemas, it is less clear how one would disconfirm constituent postulates of a worldview, such as those regarding the nature of human relationships, or the ultimate source of moral guidelines. This means that the disconfirmation of schemas entails simple practical adjustment, whereas the disconfirmation of one's worldview is typically associated with graver psychological consequences (Heine et al., 2006; Jonas et al., 2014): in such personal crises or transformations, one's very sense of reality has been shaken.

Given our definition of worldviews as sets of beliefs about the nature of reality and one's existence within it, it becomes clear that religious belief is not a prerequisite for worldviews, and that worldviews are important for religious believers and nonbelievers alike (Mauritsen & van Mulukom, 2022). Given that nonreligiosity is not institutionalized in the same way as the major religions are however, it is not clear what the range of beliefs and worldviews of nonreligious nonbelievers or nontheists might be, and whether the beliefs are clustered in sets as they might be in certain faith denominations. Theoretically, such clusters have been suggested: In his seminal review article on worldviews, Koltko-Rivera presents seven groups of worldviews: human nature, will, cognition, behavior, interpersonal, truth, world, and life (Koltko-Rivera, 2004). Similarly, distinct philosophical categories (e.g., axiology, teleology, epistemology, ontology, cosmology, and praxeology) have later been suggested by others (Johnson et al., 2011; Taves et al., 2018). There is, however, little empirical research investigating these theoretical proposals.

The present research therefore had three main aims: (a) to examine the content and range of secular (i.e., nonreligious nontheistic) beliefs and worldviews; (b) to investigate whether secular beliefs cluster together in ways similar to theoretical proposals; and (c) to explore how these different types of beliefs might vary across countries. To this end, an open-ended survey was designed to ask nearly 1,000 secular individuals from 10 countries across the globe what their most important worldview, belief, or understanding of the world was. Koltko-Rivera (2004) argues that the complexity of worldviews needs to be embraced, and that future analyses might point out clusters of beliefs within worldviews, and that they should not be imposed theoretically. In line with this argumentation, in order to not put words into the mouths of the participants, and to ensure as broad a range as possible for the secular beliefs and worldviews from our selected countries, an open-ended question format was selected, as well data-informed or "on-the-fly" coding. This means that there was no coding scheme set up prior to data collection or analysis, but that an ethnographic bottom-up approach was used, whereby the data defined the categories would be used (see Methods section).

Our aim was to recruit 100 participants with a 50/50 female/male distribution from 10 countries that were selected (here in alphabetical order with universal three-letter codes, or International Organization for Standardization (ISO) 3166-1 α-3 codes): Australia (AUS), Brazil (BRA), Canada (CAN), Czech Republic (CZE), Denmark (DNK), Finland (FIN), the United Kingdom/Great Britain (GBR), the Netherlands (NLD), Turkey (TUR), and the United States of America (USA), see Figure 1. These countries were chosen as this is where we are internationally based with belief and unbelief expertise. Our samples exhibit cultural, geographical, and economic variety, and have differences in terms of importance given to religion in daily life (see Figure 2 and Supplemental Materials SM.1 for exact numbers and references).

Method and Measures

Participants

Participants were recruited through online forums such as Reddit, and relevant Facebook groups and pages in the summer of 2018. As to the desired target population consisted of nonreligious nontheistic individuals specifically, ads were placed on pages, websites, and newsletters of atheists, agnostic, and other secular organizations—see Supplemental Materials SM.2 for a list of sources. Participants were not reimbursed for their time but raffles were organized for most countries to stimulate participation numbers.

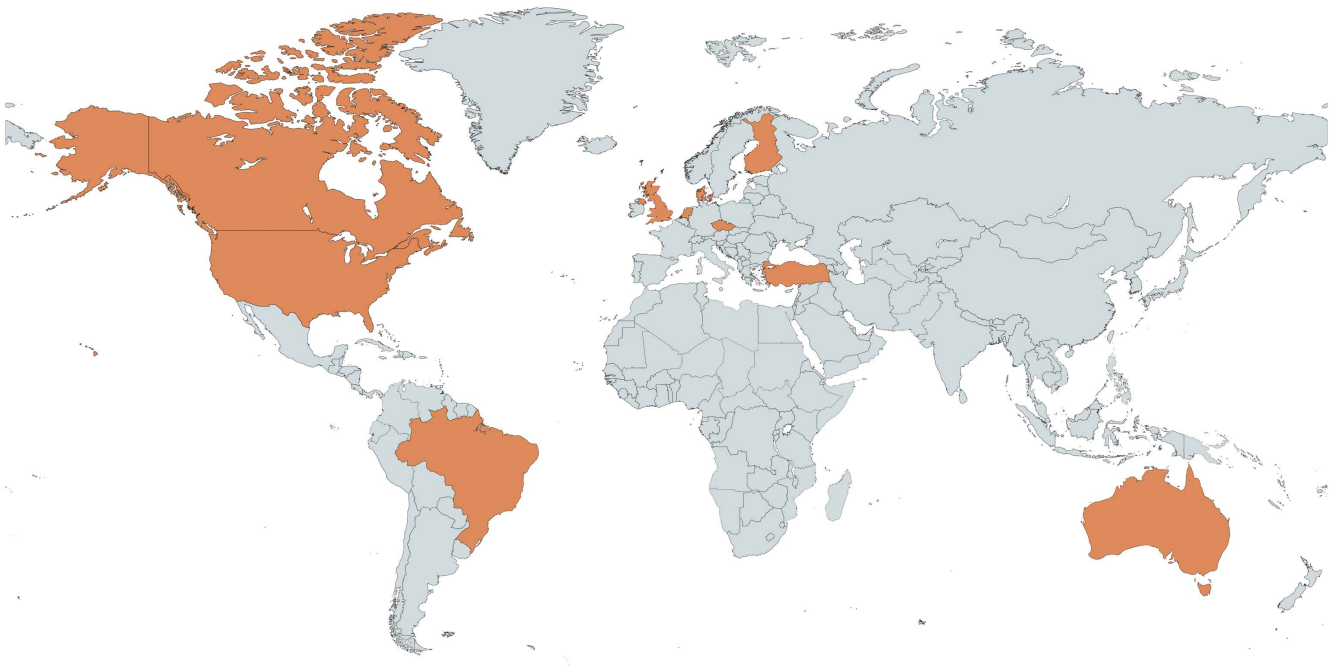
Two main exclusion criteria for the participants—that they do not believe in God (i.e., are nontheistic) and were not religious—were implemented automatically in the survey, through two questions: (1) "Do you believe in God?" with the option to answer "Yes" or "No." If they ticked "Yes," the survey automatically ended; and (2) "What is your affiliation?" with the options "atheist," "agnostic," "no religion," "indifferent," "spiritual but not religious," "other, namely," and "religious." If they selected "religious," the survey ended automatically as well.

Using these recruitment strategies and exclusion criteria, 100 participants were recruited from each country[1] except for Canada ($n = 96$). For most countries, the planned 50/50 gender distribution was achieved, with exception of Turkey, Czech Republic, and Canada, see Table 1. The gender frequencies however do not differ significantly between the countries, $\chi^2(9, N = 996) = 10.52$, $p = .31$. The age of the participants ranged from 15 to 87 years old and years of education from 5 to 37 years. Age differed significantly between the

[1] In countries where *more* than 100 participants were recruited, 100 participants were randomly chosen from the pool, while maintaining a 50/50 gender distribution. Moreover, participants whose nationality and country of residence matched were selected where possible, in an attempt to obtain "country-representative" individuals as much as possible.

Figure 1

Map of the World With Countries (Highlighted in Orange) From Which Participants Were Sampled (Figure Created Through https://mapchart.net/world.html*)*



Note. See the online article for the color version of this figure.

countries, $F(9, 979) = 29.53$, $p < .001$, $\eta_p^2 = .21$, as did years of education, $F(9, 979) = 2.64$, $p = .005$, $\eta_p^2 = .02$; see Supplemental Materials SM.1 for post hoc comparisons. Participants were also asked to indicate how spiritual they consider themselves to be on a scale from 0 = *not at all* to 6 = *extremely so* (see Table 1), but not religiosity, as participants had been asked whether they were religious or not beforehand, and all religious individuals were automatically excluded from participation (see above). Average self-reported spirituality differed significantly between the countries, $F(9, 986) = 9.49$, $p < .001$, $\eta_p^2 = .08$, see Supplemental Materials SM.1.

The frequencies of affiliations or unbeliever labels were also significantly different between the countries, Figure 3; χ^2 (117, $N = 996$) = 208.05, $p < .001$. However, while most participants indicated they were atheists, many declared in their answers to the open-ended question also to be antitheists or rationalists, for example, a label which was not provided by us. Therefore, we consider this label to be a rough indication only. Under "other" categories, the most frequently participant-provided labels included "antitheist" (0.8% of the total sample across all countries), "agnostic atheist" (0.7%), ignostic (0.3%), buddhist (0.2%), apatheist (0.2%), rationalist (0.2%), and materialist (0.1%), with a further 1.0% not specified in any of the previously mentioned categories.

Measures

The data of this study was part of a larger survey. In the present article, the most important worldview(s) the participants held are reported, as well as ratings on a predetermined set of beliefs/worldviews, to explore what the nonreligious nontheistic participants believe in.

Most Important Worldview

Our main aims included to investigate what types beliefs and of worldviews are held by nonreligious nontheistic individuals, and how this may vary across countries around the world. As such, as little guidance as possible was given (i.e., no predetermined lists of worldviews), but to make sure that respondents did not just list their political stance, for example, the worldview question was preceded by an explanation of the researchers' stance on secular beliefs and worldviews:

> There has been a global increase in individuals who hold no religious affiliation or have no religious beliefs, and a concurrent increase in secular organisations and secular rituals (e.g., humanist weddings and funerals). We are interested in understanding better what forms of 'non-religious belief' entail. While non-believers do not hold religious beliefs, they may still have distinct secular views, for example moral or ethical beliefs or views. Moreover, such secular worldviews may provide non-religious individuals with sources of meaning which are important to explain the world and which may also function as coping mechanisms." This piece of text was followed by: "If you do not believe in God, what worldviews, beliefs, or understandings of the world do you hold? Please list the worldviews, beliefs, or understandings of the world that are particularly meaningful to you.

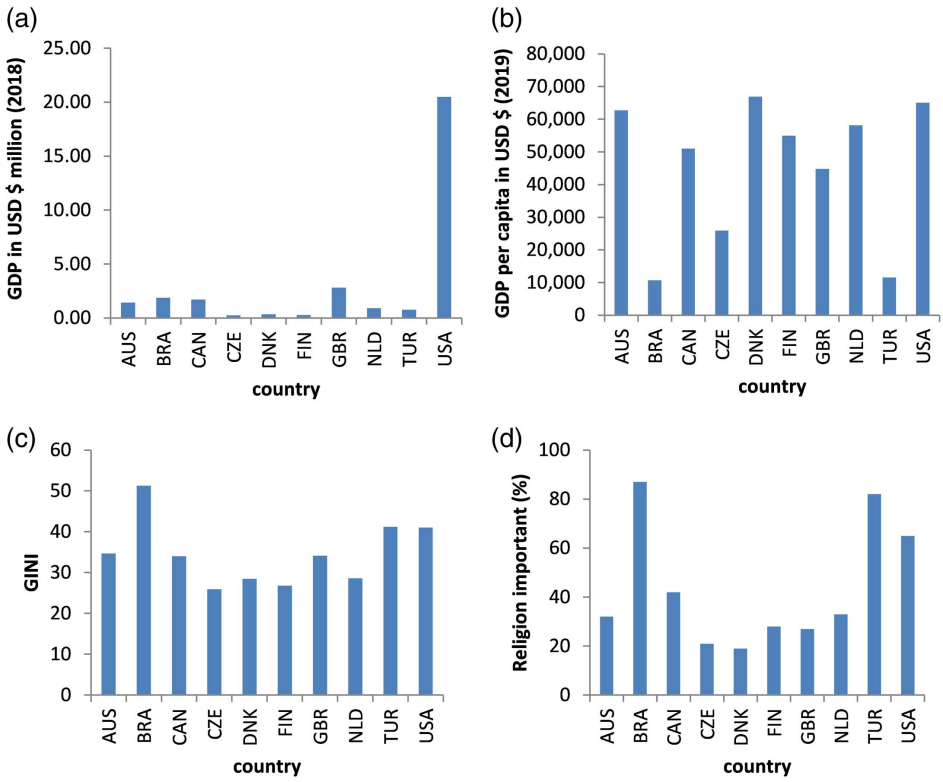
The participants were provided with a text box to type their answers in (with no restrictions to text length).

Beliefs

In addition to the open-ended worldview question, to get an idea of which beliefs/views were adhered to/believed in compared

Figure 2

Distribution of (a) Country GDP, (b) GDP per Capita, (c) GINI, and (d) Whether Religion Is Considered Important per Sampled Country



Note. GDP = gross domestic product. See the online article for the color version of this figure.

between the different countries, and since we did not know what to expect from the open-ended questions (providing the participants with a lot of freedom to write either lots or hardly anything), a predetermined list of beliefs was created. This list is based on previous pilot studies and research on unbelief and belief done by the authors of the present article. Participants were asked the question "Which of the following worldviews/understandings of the world/beliefs do you hold? A belief in or a worldview or understanding of the world that primarily relies on" followed by a list of 26 items, see Table 2 below. Participants chose one of the following options for each of the items: *I definitely do not hold this belief/view* (−2), *I do not hold this belief/view* (−1), *neutral* (0), *I hold this belief/view* (1) and *I definitely hold this belief/view* (2). Importantly, this question was asked after the open-ended question so as not to influence the participants' answers there.

Demographics

Participants were asked to indicate their gender (female/male/other), age (in years), and years of education (starting from 1st

Table 1

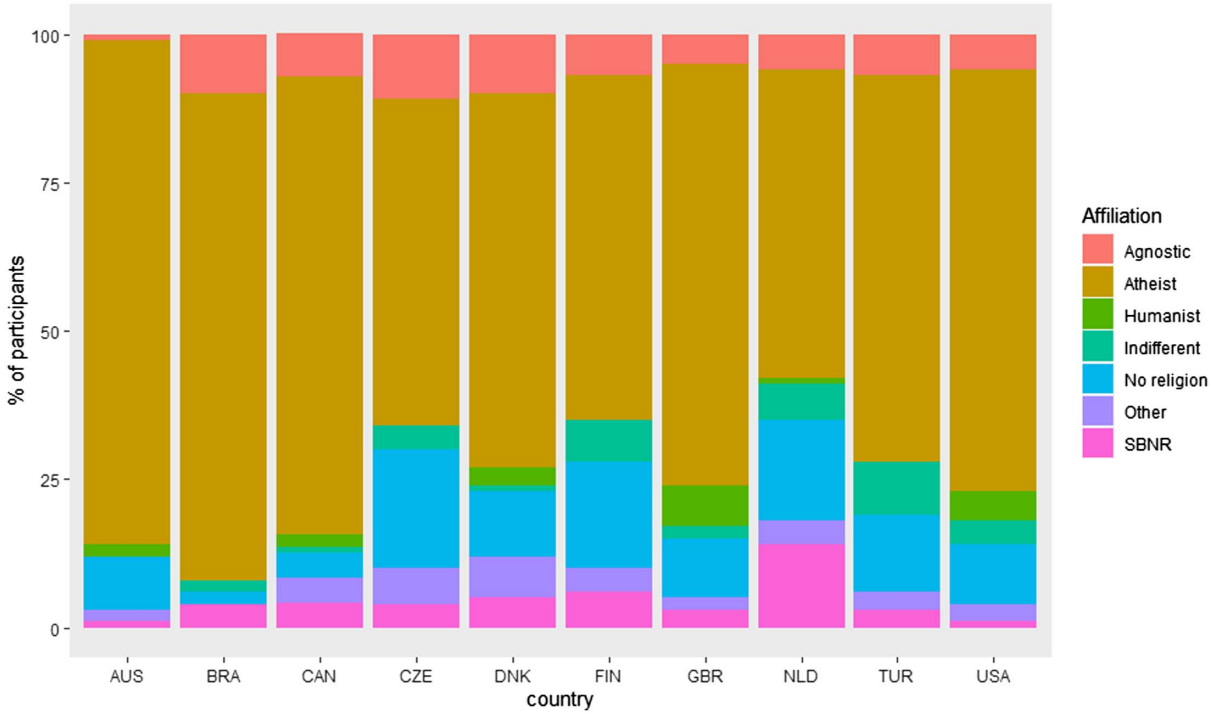
Proportion of Gender and Means (Standard Deviations) for Age and Years of Education, and Self-Reported Spirituality per Country

Country	Gender distribution	Age (years)	Years of education	Self-reported spirituality
Australia	50F/50M	59.1 (14.5)	17.4 (3.9)	0.60 (1.23)
Brazil	50F/50M	40.0 (13.6)	17.1 (4.2)	0.25 (0.66)
Canada	46F/50M	47.7 (12.4)	16.7 (3.3)	0.56 (1.10)
Czech Republic	33F/67M	33.5 (10.9)	17.8 (4.1)	0.81 (1.25)
Denmark	50F/50M	46.8 (13.4)	17.4 (2.8)	0.53 (1.05)
Finland	50F/50M	44.6 (12.9)	18.1 (3.8)	1.42 (1.59)
United Kingdom	50F/50M	49.2 (13.1)	17.1 (3.9)	0.76 (1.32)
Netherlands	50F/50M	42.9 (14.9)	18.0 (3.3)	1.32 (1.58)
Turkey	44F/56M	35.7 (10.9)	16.1 (3.8)	1.41 (1.86)
United States	50F/50M	44.3 (14.1)	16.9 (3.0)	0.71 (1.13)
Average	47F/52M	44.34 (14.76)	17.26 (3.68)	0.84 (1.37)

Note. Spirituality was measured on a scale from 0 = *not at all* to 6 = *extremely so*.

Figure 3

Stacked Barplot of Percentages of Nonreligious Affiliations of the Participants per Country



Note. See the online article for the color version of this figure.

grade/1st year of primary school). Participants were also asked: "How spiritual do you rate yourself to be?" where they were provided with options ranging from 0 = *not at all* to 6 = *extremely so* (with only number labels in between).

Translations and Coding

All translations were done by co-authors on this article, who were also involved in the coding. For some countries, additional people helped out with the translation and coding. Moreover, three research assistants from Coventry University coded data from United Kingdom, Canada, and Australia. Translation included both the survey and the participants' answers. The survey was translated and back-translated for every country where English is not the first language (Finnish rather than Swedish was used for Finland).

Coding Procedure

One of the strengths of this study is the ambition to obtain a data-driven rather than a prespecified/hypothesis-driven description of secular beliefs. Thus, the coding template was developed bottom-up by each of the national co-authors (native speakers) and then agreed upon across countries. First, each national coder identified thematic categories in their data sets and returned these to the first and second author. The first and second author then integrated identified categories to align the national codes to a common coding template both within and across the countries, and ways to make the number of categories more succinct (some countries had initial coding templates of 200 categories). The new and final coding template, consisting of 51 categories (see Supplemental Materials SM.4 for the full coding template), was sent back to the national coders, who recoded the data of their countries. Finally, the second author (Hugh Turpin) coded every country (according to the template), and through an examination of the difference between the coding, and in discussion between the country's main coder and Hugh Turpin, an agreed coding was settled on for each country, which was then used in the analyses.

The percentage agreement between Hugh Turpin and the country coder ranged from 92.56 to 96.82%, with the following agreements per country: United States (92.98%), Brazil (94.08%), Denmark (95.38%), Finland (96.50%), Turkey (96.62%), Czech Republic (96.82%), the Netherlands (93.70%), United Kingdom (92.56%), Canada (95.44%), and Australia (96.02%). Cohen's κ was calculated with the formula: Pr(a)-Pr(e)/1-Pr(e), whereby Pr(a) represents the actual observed agreement, and Pr(e) represents chance agreement, in this case 0.50 as the only scores were *present* (1) or *absent* (0). Cohen's κ for each of the countries was: United States (0.86), Brazil (0.88), Denmark (0.91), Finland (0.93), Turkey (0.93), Czech Republic (0.94), the Netherlands (0.87), United Kingdom (0.85), Canada (0.83), and Australia (0.92), all > 0.80, which we deemed satisfactory.

Results

Predetermined Secular Belief Sets

The responses to the predetermined belief sets were investigated first, to obtain a baseline beliefs measure irrespective of the variety of the participants' responses. An exploratory principal axis factor

Table 2
Exploratory Factor Analysis on Predetermined Belief Items

Belief/worldview item	F1	F2	F3
Science	**−0.49**	**0.40**	**0.50**
Logic/reason	−0.37	**0.44**	**0.43**
Common sense	0.06	**0.47**	0.03
Nature	0.12	**0.54**	0.08
Natural order/Order of the universe	0.16	**0.50**	0.01
Chance/randomness	−0.10	0.27	0.07
Big bang	−0.30	0.36	0.33
Evolution	**−0.44**	**0.41**	0.25
Progress	−0.07	**0.51**	0.11
Morality/moral truths/doing and/or being just or good	−0.02	**0.55**	−0.03
Humanity/human ability	−0.04	**0.66**	−0.13
Human goodness/love	0.12	**0.63**	−0.24
Emotions/feelings/gut feelings	0.34	**0.56**	−0.22
Self	0.15	**0.50**	−0.14
Enjoyment/seize the day attitude	0.10	0.39	−0.11
Soul	**0.76**	0.09	−0.03
Karma	**0.74**	0.15	−0.02
Fate/destiny	**0.61**	0.00	−0.04
Positive thinking	0.36	0.39	−0.11
Universal consciousness/awareness	**0.59**	0.28	−0.10
Energy/energies	**0.67**	0.20	−0.08
Spiritual realm/beings	**0.78**	−0.06	0.18
A creator	**0.63**	−0.14	0.34
A higher power	**0.72**	−0.12	0.36
Afterlife	**0.76**	−0.14	0.26
Reincarnation	**0.76**	−0.13	0.20

Note. Items with a factor loading of <.40 or >−.40 are in bold.

analysis was run on the list of provided belief items to examine whether there are certain patterns in the type of beliefs that secular individuals hold. The scree plot tapering off after three factors led to a decision to keep three factors, with a cumulative explained variance of 47.7%. The first factor has an eigenvalue of 6.34 and explains 24.4% of the variance, the second factor has an eigenvalue of 4.49 and explains 17.3% of the variance, while the third factor has an eigenvalue of 1.58 and explains 6.1% of the variance. See Table 2, for the items and factor loadings.

Factor 1 includes the endorsement of more spiritual beliefs such as soul, karma, afterlife, reincarnation, and a higher power is combined with a lack of endorsement for belief in science and evolution. This set of beliefs reflects that of the "spiritual but not religious individuals" (Fuller, 2001; Lindeman et al., 2019), also called "spiritual seekers" (Manning, 2015), and appears to emphasize ontology and cosmology. Factor 2 includes not only science, logic, evolution, natural order, progress, but also a belief in human ability and goodness, and similar human-centric values such as belief in the self and belief in emotions. We suggest that these beliefs together reflect a "secular humanist" package (Lee, 2015; Taylor, 2007; Turner, 1985). These beliefs appear to focus on epistemology, axiology, and praxeology. Notably, two beliefs—belief in seizing the day, and a belief in positive thinking—fall just short of the threshold of factor loadings of >.40, with a .39 factor loading for Factor 2. Belief in the Big Bang falls short with a factor loading of .36, thus differentiating it from beliefs in science and evolution, which currently may not be at the forefront of people's minds and worldviews. Factor 3 is comprised of just belief in science and in logic and reason. This belief set appears particularly fitting for individuals who have been described as "philosophical secularist" (Manning, 2015) and "intellectual atheist/agnostic" individuals (Silver et al., 2014) who proactively try to educate themselves and acquire knowledge in the search for truth (ontology) and enjoy discussing the epistemological positions (epistemology).

The scores for each belief set for each participant were calculated by averaging all items loading into each belief set (Spiritual Beliefs, $\alpha = .891$; Humanistic Beliefs, $\alpha = .797$; Belief in Science and Logic, $\alpha = .809$). On a range from −2 (*i definitely do not hold this belief/view*) to 2 (*i definitely hold this belief/view*), Spiritual Beliefs scored negatively on average ($M = -1.43$, $SD = 0.63$) indicating an average lack of endorsement for the individuals of this overall sample, with Humanistic Beliefs ($M = 1.15$, $SD = 0.51$) and Belief in Science and Logic scoring positively on average ($M = 1.74$, $SD = 0.53$), indicating endorsement (see Supplemental Materials SM.3 for averages for each of the belief sets per country). Given the composition of our sample—that is, high numbers of participants selecting an atheist label and lower numbers selecting the spiritual but not religious label—we suggest that these results are not unexpected.

Open-Ended Secular Belief and Worldview Question

Belief Categories and Worldview Supercategories

Next, we turn to the open-ended question about the participants' most important secular beliefs and worldviews. First, the final coding scheme will be presented. In this coding scheme, the final 51 categories were grouped in 11 supercategories of secular beliefs (see Figure 4, and Supplemental Materials SM.4 for the full coding template).

Next, the supercategories were compared to previously proposed theoretical components, see Table 3. There is a relatively good match with the theorized components; the only category which we were not able to place is the "other" category, which is unsurprising given its idiosyncratic contents. Nonreligiosity is the only category occurring twice: both in the "epistemology"/"world and life" component and in the "ontology-cosmology"/"cognition; truth" component.

Next, the categories which were mentioned most often across all countries were investigated. The top ten most-named categories across all countries are listed in Table 4 below, with the percentage of participants mentioning each particular category. After the global top 10, all other categories are mentioned by 8.4% of the participants or less.

To investigate whether participants globally responded in a systematic way, a principal components analysis with varimax rotation was conducted on the data of all participants (all countries) for the top 10 categories. Three factors were extracted, and varimax rotation was used to create three maximally orthogonal factors (i.e., every item–in this case the category loads maximally onto one of the three factors), since there likely is overlap between the categories. The result of the analysis showed that there are three significant factors—see Table 5 below. Of the entered categories, only atheism did not load on any of the factors despite a varimax rotation, indicating that atheism is not connected uniquely to any one of these factors.

The first factor we might call the *left-wing humanist* responses (or care for humans). It bears resemblance to Lee's (2015) definition of humanism, though with more focus on praxeology than Lee's conceptualization, which emphasizes epistemology. The second

Figure 4

Overview of All 51 Coding Categories of the Template Within Their 11 Supercategories

Note. Both categories and supercategories are ordered alphabetically with "other" added last; colors hold no particular significance and are used for visual assistance. See the online article for the color version of this figure.

factor we might call the *scientific skeptic* responses (or how to think), which emphasizes epistemology. Given that this factor includes both belief in science and critical skepticism, it might include individuals who are not necessarily convinced about the "truth" of current scientific knowledge but ascribe to the scientific method as a meaningful worldview. Thus, this component might overlap with previously described worldview types that value an open disposition toward knowledge, such as "seeker agnostics" in Silver et al. (2014), but also other nontheists who are attuned to the intellectual, such as analytic atheists in Lindeman et al. (2019) or "intellectual atheist/agnostic" individuals in Silver et al. (2014) and possibly "philosophical secularists" in Manning's (2015) typology. The third factor we might call the *environmental caring* responses (or care for earth and acceptance of nature). These responses focus on humans as a natural part of nature and hence nothing "special" (Haimila & Muraja, 2021; Zuckerman, 2020) and also indicate an interconnectedness, as discussed in the existential culture of agnosticism (Lee, 2015), thus combining cosmology/ontology with praxeology.

To further investigate possible connections with other belief sets, a correlation analysis was conducted with the predetermined belief sets (see Predetermined Secular Belief Sets section), see Table 6. The correlations between *scientific skeptic beliefs* and the predetermined belief sets are as predicted: negative correlations with spiritual beliefs and positive correlations with science and logic beliefs. The other correlations are somewhat more surprising however: *left-wing humanist beliefs* do not correlate with humanist beliefs ($p = .08$), but like scientific skeptic beliefs correlate negatively with spiritual beliefs and positively with science and logic beliefs. *Environmental caring beliefs* did not correlate significantly with any of the predetermined belief sets, with a trend for a positive correlation with humanist beliefs ($p = .06$). One reason for these somewhat surprising findings might be that these correlations are run across countries, and there may be differences in correlations between the countries. However, the country-level sample size, while sizable for open-ended questions, is too small to run sufficiently powered correlations, so we are not able to further examine this possibility.

Table 3
Theoretical Proposals of Worldview Categories Matched With the Categories Found in the Present Research

Koltko-Rivera (2004)	Johnson et al. (2011)	Taves et al. (2018)	Present study	Description
Human nature; behavior (moral)	Axiology	Axiology	Morality	What is the good that we should strive for, what is good and evil
Will; behavior (control)	Teleology	—	Agency and control; Reflection and acceptance	What can we control, do we have free will
Cognition; truth	Epistemology	Epistemology	Science and critical thinking; truth; and nonreligiosity	What can we know, how do we know what is true, how should we reason
World and life	Ontology	Ontology; cosmology	Natural laws and the here and now; nonreligiosity; and spirituality	What exists, what is real; Where do we come from and where are we going (incl. afterlife)
Interpersonal; behavior (moral)	Praxeology	Praxeology	Collaboration and peace; equality and kindness	What actions should we take (in particular within the context of communities)

Cross-Cultural Variation in Secular Beliefs and Worldviews

Finally, the top ten categories of each country were examined, and how they might differ, see Table 7. As is visible from this table, all countries' top ten lists contain categories that are mentioned in 9%–59% of the participants' responses, with the most intracountry agreement for Canada, in which 11%–59% of the responses include the top ten categories, and the least agreement for the Netherlands, where the top 10 categories only cover 9%–24% of the Netherlands's responses. Interestingly, the top 10 most frequently named categories are very similar across the different countries, despite the geographical spread and cultural differences between the countries (see Table SM5.1, for an overview of the cultural distance between the countries, Muthukrishna et al., 2020). In particular, the six top categories occur frequently in each of the countries separately: science, critical skepticism, natural laws, and humanism, equality, and kindness and caring.

Together, these six frequently occurring categories seem to reflect a worldview based on scientific, critical thinking, and human-centered values surrounding equality and care, and is consistent with prior descriptions on the belief systems of secular group affiliates (Pasquale, 2009; Smith, 2017; Smith & Halligan, 2021). Many have noted the importance of the scientific and humanistic frameworks for secular individuals (e.g., Bullivant et al., 2019; Lee, 2015); and, in some studies, these provide a common ground for the worldviews of secular group affiliates (Kontala, 2016). Furthermore, scholars such as Pasquale (2009) and Bullivant et al. (2019) have previously reported the importance of intuitive care (e.g., compassion, friendship) and rational care (human dignity, equality) for secular individuals' sense of meaning in life and the world.

Differences between the top ten lists of the different countries are interesting also—a few categories appeared where they were not necessarily expected or lacked where they may have been expected. For example, while left-wing political causes ranks first in Turkey, this category does not occur at all in the top 10 of Denmark or Finland. This may be considered surprising given what is known about these countries: left-wing political causes such as abortion and euthanasia are currently forbidden in Turkey, while Denmark and Finland are some of the most progressive, left-wing countries on earth. We suggest here that what these most frequently named categories reflect is the current political or societal climate in these countries in interaction with the country-specific secular identities. Thus, taking the example of Turkey, there was, at the time of the survey, a strong opposition to Erdogan's de-secularizing policies. People opposing Erdogan are often strongly left, and see themselves as defending Kemalism, the legacy of the country's secularizing modernizer Ataturk, which could be why left-wing political causes are so important to these people. We suggest that in Denmark and Finland on the other hand, these topics are not highly important to secular individuals specifically.

Discussion

This research project had three main aims: (a) to examine the content and range of secular (i.e., nonreligious nontheistic) beliefs and worldviews; (b) to investigate whether secular beliefs cluster together in ways similar to theoretical proposals; and (c) to explore how these different types of beliefs might vary across countries.

Table 4
Global Top Ten of Most Frequently Mentioned Belief/worldview Categories

Category	%	Description
Science	35.1	Responses that endorse science in general, scientific methodology, or perspectives (including responses such as believing in "evidence" or "observations" or methodological naturalism), or scientific expertise and authority (including responses indicating a trust in scientific and medical experts).
Humanism	25.5	Responses that fall under the general umbrella of humanism or related worldviews, including beliefs that human beings are special (human relativism), that human history is inherently progressive, that human reason or ingenuity can overcome all problems (belief in human ability).
Critical skepticism	17.4	Responses that espouse the value of a questioning, critical disposition toward information. It includes responses that simply state a belief in "skepticism," "rationalism," "logic," and "reason" but also answers that include belief in mathematics, philosophy, or philosophical reasoning. In addition, answers indicating belief in open-mindedness and the ability to change your beliefs were included here as well.
Natural laws	15.6	Responses that talk about the laws underlying biological or physical systems, and/or emphasize that humans are subject to the same laws as the rest of the physical universe. This includes answers reflecting a belief in nature, naturalism and biology. Answers that indicate a belief in "Big Bang," and "evolution" are also included here, as well as statements such as "We are all made of stardust/particles, and we will return to this when we die".
Equality	14.0	Responses that emphasize the equality of human beings, their inherent value or dignity, the importance of legal or philosophical innovations ensuring such equality is respected (such as democracy and human rights), and the general obligation to make society more equal (including universal health care and general (rational) care for all humans).
Kindness and caring	13.6	Responses that praise the importance of empathy or concern for others, and/or the importance of caring actions, and helping and supporting others. It includes beliefs in human goodness and kindness (though not human ability, see Humanism) and beliefs in compassion, empathy, being kind and loving, and love. It encompasses belief in a more intuitive rather than rational care (see Equality).
Care for the earth	11.5	Responses that emphasize the importance of environmentalism, looking after the planet, and respecting and caring for other species, including beliefs in care and respect for all flora and fauna, and in animal rights. It also includes the belief that we have a legacy, and that we need to leave the Earth in a good state for future generations.
Left-wing political causes	10.1	Responses that mention a cause or worldview associated with left-wing politics (regardless of actual mentioning of left-wing politics). This category includes feminism, socialism, marxism, and anarchism, as well as being a vegetarian, pro-choice, pro-euthanasia and an advocate for the lesbian, gay, bisexual, transgender, and questioning (LGBTQ) movement.
Atheism	9.9	Responses that reject religious belief, particularly a belief in God. However, this category does not include responses that adopt a negative or critical stance toward belief in God (antitheism), or those that focus on the separation between state and Church (secularization), a rejection of belief in an afterlife (no afterlife), a rejection of belief in the supernatural more generally (reject superstition), or an endorsement of a belief in secular morality (secular morality).
Individualism and freedom	9.8	Responses that emphasize the importance of individual liberty (including answers that simply state "individualism" or "libertarianism"), and/or advocate resisting the imposition of excess constraints on behavior. This category includes responses that indicate a belief in freedom of speech or freedom more broadly, and that state "live and let live".

To meet these aims, we designed a survey with a predetermined list of beliefs as well as an open-ended question asking participants about their most important secular beliefs and worldviews. Approximately, one thousand nonreligious nontheistic individuals were recruited from ten countries around the world (~100 participants from each country) to complete the survey. These countries included Australia, Brazil, Canada, Czech Republic, Denmark, Finland, the Netherlands, Turkey, United Kingdom, and the United States. The majority of these participants indicated to be atheists, followed by individuals who indicated to have "no religion," followed by agnostics, humanists, and spiritual but not religious individuals, as well as indifferent individuals.

Table 5
Global Response Patterns for the Global Top Ten of Category Frequencies

Category	F1	F2	F3
Equality	**0.63**	−0.04	0.39
Left-wing political causes	**0.59**	0.07	0.10
Individualism and freedom	**0.52**	−0.06	−0.03
Humanism	**0.43**	0.24	−0.23
Care for the earth	0.22	−0.03	**0.67**
Critical skepticism	0.16	**0.68**	−0.11
Atheism	−0.03	0.03	−0.07
Science	−0.11	**0.81**	0.02
Kindness and caring	−0.15	−0.03	**0.62**
Natural laws	−0.35	0.21	**0.41**

Note. Factor loadings are reported; factor loadings >.40 in bold.

First, endorsements of prelisted beliefs were investigated, and it was found that they clustered together in three separate clusters: spiritual beliefs (e.g., belief in reincarnation, souls, karma, etc.), humanist beliefs (belief in nature, human ability and goodness, science), and science and logic beliefs (belief in science and logic or reason). These sets, respectively, represent the worldviews of spiritual but not religious individuals (Fuller, 2001; Lindeman et al., 2019), secular humanists (Lee, 2015), and intellectual atheist/agnostic individuals (Silver et al., 2014). On average, spiritual beliefs were not endorsed in this sample, which was unsurprising given a majority of atheists and minority of spiritual but not religious individuals in the participant distribution.

Next, the responses to the open-ended question about the participants' most important or meaningful worldviews, beliefs, or understandings of the world were examined. To code these responses, a bottom-up,

Table 6
Correlations Between Open-Ended Secular Belief Sets and Predetermined Belief Sets

Factor	Spiritual beliefs	Humanist beliefs	Science and logic beliefs
Left-wing humanist beliefs	−.11** [−.17, −.05]	.06 # [−.01, .12]	.09** [.03, .15]
Scientific skeptic beliefs	−.20** [−.26, −.14]	−.04 [−.10, .02]	.16** [.10, 22]
Environmental caring beliefs	.01 [−.05, .08]	.06 # [−.00, .12]	.02 [−.04, .09]

Note. Correlations for 995 observations.
** $p < .01$. # $p < .10$.

data-driven method was used to develop a coding scheme. This resulted in a coding scheme with 51 categories within 11 supercategories (listed alphabetically): agency and control, collaboration and peace, equality and kindness, morality, natural laws and the here and now, nonreligiosity, reflection and acceptance, science and critical thinking, spirituality, truth, and *other*. These supercategories each fit within previously proposed theoretical worldview components (Koltko-Rivera, 2004), such as axiology, teleology, epistemology, ontology/cosmology, and praxeology (Johnson et al., 2011; Taves et al., 2018), with the category nonreligiosity fitting under both epistemology and ontology/cosmology. In other words, while having emerged from a data-driven rather than theory-driven approach, the supercategories are together able to answer the "big questions" (Taves, 2020), including the following: "What is the good that we should strive for, what is good and evil," (axiology) "What can we control, do we have free will," (teleology) "What can we know, how do we know what is true, how should we reason," (epistemology) "What exists, what is real; where do we come from and where are we going (incl. afterlife)" (ontology and cosmology), and "What actions should we take (in particular within the context of communities)" (praxeology).

In terms of the individual categories, the top 10 categories that responses fell into, were as follows: science (mentioned in 35.1% of all responses), humanism (25.5%), critical skepticism (17.4%), natural laws (15.6%), equality (14.0%), kindness and caring (13.6%), care for the Earth (11.5%), left-wing political causes (10.1%), atheism (9.9%), individualism and freedom (9.8%). Science was the top category for eight of the 10 countries (second place for Turkey, and third place for United Kingdom). This is in line with previous research, which suggests that science is secular individuals' central epistemological worldview component: atheists and other secular people emphasize evidence-based, rational thought in their narratives (Hunsberger & Altemeyer, 2006), unbelievers are more likely than the general population to perceive science as the "only reliable path

Table 7
Top Ten Most Important Worldviews per Country With Percentages of Individuals Mentioning Responses in Each Category

Australia	%	Brazil	%	Canada	%	Czech republic	%	Denmark	%
Science	41	Science	35	Science	44	Science	26	Science	39
Critical skepticism	29	Natural laws	18	Humanism	25	Critical skepticism	21	Humanism	36
Humanism	23	Philosophical materialism	15	Equality	20	Humanism	20	Natural laws	27
Natural laws	17	Reject superstition	12	Kindness and caring	20	Atheism	15	Critical skepticism	16
Secularism	14	Equality	12	Critical skepticism	16	Equality	12	Kindness and caring	16
Equality	13	Peace and collaboration	12	Natural laws	14	Natural laws	11	Equality	11
Flourish	12	Secular morality	11	Care for the earth	13	Left-wing political causes	11	Responsibility and free will	10
Antitheism	11	Responsibility and free will	10	Peace and collaboration	11	Existent	10	Secularism	9
Reject superstition	11	Atheism	9	Responsibility and free will	10	Philosophical materialism	8	Philosophical materialism	9
Philosophical materialism	11	Individualism and freedom	9	Unattainable truth	10	Individualism and freedom	8	Individualism and freedom	9

Finland	%	United Kingdom	%	Netherlands	%	Turkey	%	United States	%
Science	59	Humanism	34	Science	24	Left-wing political causes	29	Science	39
Humanism	37	Kindness and caring	26	Humanism	20	Science	21	Humanism	31
Natural laws	21	Science	23	Critical skepticism	16	Humanism	21	Critical skepticism	21
Care for the earth	18	Equality	19	Care for the earth	16	Critical skepticism	17	Kindness and caring	20
Critical skepticism	17	Just one life	18	Natural laws	12	Atheism	16	Flourish	19
Equality	15	Golden rule	17	Peace and collaboration	12	Equality	16	Equality	16
Antitheism	12	Care for the earth	17	Left-wing political causes	10	Kindness and caring	14	Golden rule	13
Atheism	12	Critical skepticism	16	Kindness and caring	10	Care for the Earth	14	Care for the Earth	13
Individualism and freedom	12	Peace and collaboration	15	Individualism and freedom	10	Natural laws	11	Just one life	12
Philosophical materialism	11	Natural laws	14	Antitheism	9	Intuitive morality	9	Atheism	11

Note. Countries are ordered alphabetically.

to knowledge" (Bullivant et al., 2019), effects which are especially pronounced for atheists in the United States (Pasquale, 2009). Science can also feature as an ontological/cosmological feature however: it can allow atheists to feel part of something greater than themselves (Caldwell-Harris et al., 2011; Haimila, 2020) and allow one to find "one"s place in the universe' (Lee, 2015, p. 146). Thus, the identification with science may provide a sense of meaning for secular individuals and can help find meaning in the world (Bullivant et al., 2019; Farias et al., 2013; Haimila, 2020).

Humanism, the category mentioned second most often, is interesting in that it overlaps with a high appreciation for science and scientific method (indeed, secular individuals have been found to often rely on a secular-scientific and humanist belief system in certain samples; Smith, 2017), but also places much value on humans and their goodness and ability (Lee, 2015). This extends to praxeology, whereby actively contemplating—and even seeking to change—societal structures and values is important (Kontala, 2016; Taylor, 2007). Critical skepticism is again similar to the science category, but it emphasizes epistemology and may include a more critical view on the scientific method, thus allowing more uncertainty (Smith & Halligan, 2021) and for more critical or logical thought (Pasquale, 2009). The natural laws category reflect the previously researched secular beliefs that humans are a natural creature (Smith & Halligan, 2021), like other animals (Zuckerman, 2020), and consist wholly of matter (Wilkinson & Coleman, 2010), a clear ontology/cosmology worldview component.

Notably, in the present research, the participants were asked about their "worldviews, beliefs, or understandings of the world that are particularly meaningful," which was phrased this way to get at the participants' worldview or "existential" beliefs (Lee, 2015). Other research has indicated however that, when asked "what provides [the participants] meaning" (note the slightly different angle), the answer is generally first and foremost "family" (Bullivant et al., 2019; Pasquale, 2009), followed by freedom or friendship, equality or compassion (Bullivant et al., 2019) or helping or caring for others, and on fifth and sixth place "people, social relations in general" and "friends, friendship" (Pasquale, 2009). These responses did appear in the current research as well (family, friends, and community were coded under the category "connection," supercategory "collaboration and peace"), but were not a highly frequent response, although the supercategory equality and kindness and caring did occur in the top 10 (50 and sixth place, respectively). These discrepancies may be the result of the question formulation or sample recruitment, among other things.

A principal components analysis on the top 10 most mentioned categories (across countries) demonstrated further patterns: equality, left-wing political causes, individualism and freedom, and humanism all loaded onto a factor which we called "left-wing humanist responses"; science and critical skepticism loaded onto a factor which we called "scientific skeptic responses," and care for the earth, kindness and caring, and natural laws loaded onto a factor we called "environmental caring responses." Atheism did not uniquely load onto a single factor. We suggest that this may have the same underlying reason as nonreligiosity as a category fitting into multiple worldview components: secular individuals (in particular a sample comprised of mostly atheists as the current one) may dissociate themselves from religion in several ways, such as denying religion as a way of knowing things (epistemology) and as a way of understanding where we come from and what is real (cosmology and ontology).

While the predetermined belief sets or patterns did not always correlate significantly with these worldview patterns, it was telling that three similar sets were found across both: predetermined spiritual beliefs reflecting cosmology and ontology components and environmental caring responses reflected cosmology and praxeology, predetermined humanist beliefs reflecting praxeology, epistemology and axiology and left-wing humanist responses reflecting praxeology, and predetermined science and logic beliefs reflecting epistemology and ontology and scientific skeptic responses reflecting epistemology. Thus, this research demonstrates several of the ways in which secular individuals fill in these "big questions" that worldviews address. Interestingly, in this sense, future research may consider running a similar version of this survey for religious individuals. While theologies may prescribe certain answers to the big questions, there is space for individual variation as well as between theological traditions (even of the same religion).

While we do not have comparative data, it is worth speculating how much secular worldviews may differ from those of religious people in the same countries. This is an enormous question and we can only briefly consider it here. On the one hand, some recent evidence suggests that religious and nonreligious individuals overlap greatly in their reported values (Bullivant et al., 2019), and historians have noted that secular humanism has Christian roots (e.g., Holland, 2019; Taylor, 2007), something that likely entails common core values (equality and compassion, for instance). On the other hand, some studies suggest underlying differences in moral cognition between religious and secular individuals, something that would likely impact their worldviews (Haidt & Graham, 2007; Lanman, 2009). More fundamentally, comparisons are complicated by the fact that there is no clean binary division between religious and secular people (highly secularized European societies, for instance, are noteworthy for having large "fuzzy" populations who are neither explicitly religious nor nonreligious; Voas, 2009).

The cross-cultural variation in secular beliefs and worldviews in the 10 countries was examined. A question of interest therein is whether differences in societal values are reflected in country-level differences in the contents of secular worldviews. For instance, left-wing politics is noticeably more salient in the Turkish sample, which probably reflects a rejection of Erdogan's conservative Islamism and the threat it poses to the secular state. However, this stands out as an exception, with our data suggest that "unbelieving" worldviews are broadly similar in the countries studied: despite the geographical, cultural, and socioeconomic differences between these countries, the lists of top ten most frequently named categories of each country showed many overlaps. It could be the case that secular worldviews really do not differ that much country to country. The growth of the nonreligious population in recent decades has coincided with an amplification in the globalization of ideas thanks to developments in communications technology, which may help to transplant new worldviews from place to place with a high degree of fidelity (e.g., Acerbi, 2019), and some observers suggest the internet has been highly influential in spreading and sustaining atheist worldviews (Smith & Cimino, 2012). We must be very cautious about making such inferences though.

Another reason for the similarities might be that despite the variety in the countries, most of the sampled countries are still western or WEIRD (Western Industrialized Educated Rich Democratic; Henrich et al., 2010). The countries were chosen on the basis of a combined desire for cross-cultural variety and presence of

collaborative expertise in belief and/or unbelief. We suggest that future research may go further beyond this selection of countries, in increasing cultural distance (Muthukrishna et al., 2020). For example, it may be particularly interesting to investigate secular beliefs and worldviews in countries where religion is considered important for the majority of the population. The present sample contained three such countries (out of 10): Brazil, Turkey, and the United States. An advantage for such future research may be that rather than using another open-ended survey approach, a questionnaire or list of secular beliefs may be based on the coding categories resulting from the present data set (and overarching supercategories or worldview components). Future research projects utilizing such a survey would then also have the advantage of going beyond a limitation of one hundred participants per country, which was a necessary limitation given the time and other resources it took to translate and code the responses for this open-ended survey.

If there is funding for it, future research may also consider targeting representative samples (e.g., Bullivant et al., 2019; Schnell & Keenan, 2011). Here, recruitment was online without participant reimbursement (though several raffles were organized to stimulate participation), and participants were mostly recruited through online groups (Facebook pages or newsletters). This means that many of the secular individuals that were reached were involved in digital media and had an interest in, or were part of, a secular organization (like much of the previous research, e.g., Kontala, 2016; Langston et al., 2020; Pasquale, 2009; Smith, 2017; Smith & Halligan, 2021). This may indicate that religious nonbelief is an important component of their social identities, and it may be that secular individuals in the general population, outside these digital environments, are more indifferent to religion and less cross-culturally similar than the current sample, which warrants exploring.

While this research did not aim to cluster secular individuals, and instead focused on exploring potential clusters of secular beliefs, overlaps with previously suggested and demonstrated nonreligious groupings (Lee, 2015; Lindeman et al., 2019; Manning, 2015; Silver et al., 2014) were noted. Previous data-driven groupings have been based on qualitative research (Lee, 2015; Manning, 2015) or quantitative research (Lindeman et al., 2019), or combination of qualitative and quantitative research (Silver et al., 2014). These groupings included analytical atheists, spiritual but not religious and uncertain nonbelievers (Lindeman et al., 2019), unchurched believers, spiritual seekers, philosophical secularists and indifferent (Manning, 2015), humanists, agnostics, theists and subjectivists, and antiexistentialists (Lee, 2015), and academic atheists, activist atheist/agnostics, seeker agnostics, antitheists, nontheists, and ritual atheists (Silver et al., 2014). Throughout these groupings, as well as in the present research to some extent, three main lines become evident: individuals who are strongly confident about the scientific method, individuals with nonreligious spiritual beliefs, and those who are uncertain, agnostic, or indifferent. Strong antireligious sentiments are not consistently present in the classifications, and, while they occurred in the present data as well, do not have the overtone.

Nonreligious affiliation labels are a contested topic for researchers (Bullivant & Ruse, 2013; Lee, 2015; Lee & Bullivant, 2016) and secular individuals alike: a recurring lack of established "worldview programmes" for each of the nonreligious affiliations[2] as one might see for, broadly speaking, the Catholic church or Pentecostalism, means that the individuals need to gauge themselves which labels is most befitting to them, even if the labels are not particularly specific ("no religion") or if a restricted range is given (e.g., "humanist" or "rationalist" may be lacking from commonly presented options). Bullivant and Lee (2012), for example, had a question categorizing each "unbeliever" participant as either atheist ("I don't believe in God") or agnostic ("I don't know whether there is a God, and I don't believe there is any way to find out"), but these individuals were still distributed over 12 different labels which they could pick themselves (i.e., atheist, nonreligious, rationalist, free thinker, spiritual but not religious, humanist, "religious label," agnostic, seeker, skeptic, secular, or other). It should be noted that our exclusion criteria—nonreligious nontheistic individuals—may have resulted in an overrepresentation of atheists, and underrepresentation of agnostics or people who do not believe in God but still consider themselves religiously affiliated in some way. However, it was the aim of this study to specifically look at nonreligious nontheistic individuals, and we were interested in an open-ended exploration of beliefs and worldviews rather than group affiliation labels, which may conceal diversity and complexity (Pasquale, 2009), but future research may extend this to larger groups of secular individuals with less stringent criteria.

Finally, it is worth pausing to consider the implications of our findings for atheists and other nonreligious individuals themselves. Cross-cultural evidence suggests that those who do not believe in a God or gods are frequently the targets of prejudice, and that this is based on the implicit assumption that atheists must be amoral nihilists (Gervais et al., 2017). The present research clearly demonstrates that "unbelievers" by no means "believe in nothing." They have principled worldviews which encompass many highly prosocial components, such as the importance of equality and compassion. Hopefully, worldview research and the insights it provides can start making changes to these negative attitudes.

Conclusions

An increase in nonreligious individuals around the world and a concurrent increase in secular organizations ask for a better understanding of secular beliefs and worldviews beyond a simple lack of religious beliefs. This open-ended data-driven exploratory research has demonstrated that there is a range of secular beliefs which answer the big questions about life, broadly in line with previous theoretical work on beliefs and worldviews. These beliefs were found to cluster together in scientific worldviews, humanist worldviews, and caring nature-focused worldviews. This research is a timely exploration of beliefs and worldviews of the growing population of secular individuals around the world.

[2] There are exceptions for certain secular organizations which make explicit their overarching worldview, such as for example, the Rationalist Society of Australia, https://rationalist.com.au/about/about-us/.

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