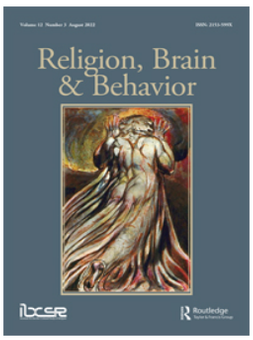

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Religion, Brain & Behavior

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rrbb20

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To cite this article: Hannah I. Pearson, Ronda F. Lo & Joni Y. Sasaki (2022): How do culture and religion interact worldwide? A cultural match approach to understanding religiosity and well-being in the Many Analysts Religion Project, Religion, Brain & Behavior, DOI: 10.1080/2153599X.2022.2070265

To link to this article: https://doi.org/10.1080/2153599X.2022.2070265

RELIGION, BRAIN & BEHAVIOR
https://doi.org/10.1080/2153599X.2022.2070265

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COMMENTARY

How do culture and religion interact worldwide? A cultural match approach to understanding religiosity and well-being in the Many Analysts Religion Project

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Religion is prevalent worldwide and has important implications for well-being (Newman & Graham, 2018), yet the way religiosity predicts well-being may depend on features of both the individual and the broader cultural context (e.g., national culture; Sasaki et al., 2011). In the Many Analysts Religion Project (MARP), research teams analyzed the relationship between religiosity and well-being from 24 countries ($N = 10{,}535$). Preliminary results show that while there is robust evidence for the link between religiosity and well-being, the relationship may be moderated by perceived cultural norms of religion, or the extent to which people perceive that being religious is acceptable within a given cultural context (Hoogeveen et al., 2022). These results suggest that the link between religion and well-being depends on whether an individual's values (e.g., religiosity) match the broader culture (e.g., highly religious context).

Although religion itself is a form of culture with its own set of values and norms (Cohen, 2009), the broader cultural context may also *interact* with religion to produce unique outcomes (Sasaki et al., 2011). We use a cultural psychological perspective to discuss how broader cultural contexts, such as nations, may interact with religion in the MARP using two cultural factors as examples: 1) *tightness–looseness*, the degree to which societies uphold strict norms and monitor norm violations; and 2) *multiculturalism*, the experience of multiple cultures within a given society (Benet-Martínez, 2012). We present a rationale for tightness–looseness and multiculturalism, suggesting these cultural factors may interact with religion, crucially shaping the way religiosity predicts well-being in societies with varying perceived cultural norms of religion.

Using cultural mismatch to predict religion–culture interactions

Some individuals may feel that their individual traits are relatively less suited to the general culture around them, producing a "cultural mismatch[1]" that can impact psychological outcomes (Fulmer et al., 2010). For example, among a sample of first-generation college students, a cultural mismatch between the university's relatively independent values (e.g., self-expression) and students' personal interdependent values (e.g., adjusting to others' needs) led to decreased psychological well-being and increased cortisol (Stephens et al., 2012). Importantly, the degree to which cultural mismatches are detrimental for well-being may depend on whether the broader cultural context emphasizes the need to fit with the culture in the first place. Building on this cultural mismatch approach, we propose that variation in *tightness–looseness* and *multiculturalism* across nations may predict when cultural mismatch is especially consequential. In the context of the MARP data, these cultural factors may shape the way individual religiosity and perceived cultural norms of religion jointly predict well-being.

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Cultural tightness (vs. looseness) may intensify the importance of cultural match

A question proposed in the MARP was whether the relationship between religiosity and well-being was stronger when individuals perceived religiosity as an accepted cultural norm. Preliminary results from the MARP team suggested that not all teams found support for this hypothesis (Hoogeveen et al., 2022). We argue that the heterogeneity of results may come from the diverse nations represented in the MARP that vary in cultural factors such as tightness (vs. looseness), which is the extent to which societies uphold cultural norms and tolerate deviance (Gelfand et al., 2011, 2021).

For example, consider an individual who is highly religious. If they perceive that the society they live in is also religious, then this would likely be a good cultural match, and a poor cultural match if they perceive the society they live in is not religious. However, the impact of cultural match (e.g., high personal religiosity and perceiving high cultural norms of religion) may be particularly important in tight nations because there are greater social repercussions for non-adherence to cultural norms. We theorize that perceived cultural norms should moderate the relationship between religiosity and well-being to a greater extent in tight countries than in loose countries. Specifically, individual religiosity may predict well-being when people perceive the broader society is also religious (vs. not), but primarily in tight nations. In loose nations, because there are likely fewer social repercussions for deviating from the cultural norms of religiosity, cultural mismatches may not change the relationship between religiosity and well-being to the same extent as in tight nations.

We re-analyzed the MARP data by inputting two different nation-level indices of tightness–looseness reported in two different papers by Gelfand and colleagues (2011 and 2021). All models controlled for gender, age, socio-economic status (SES), education, and nation-level gross domestic product (see Appendix A for the analytic plan and osf.io/6cqv2 for the data and R syntax). Using the 2011 tightness index, we observed a 3-way interaction between nation-level tightness × person-level religiosity × person-level perceived cultural norms on psychological well-being (b = 0.12, SE = 0.04, p = .005). We also replicated this interaction on psychological well-being with the 2021 tightness index (b = 1.15, SE = 0.32, p < .001). We did not observe any evidence from models with general, social, and physical well-being (models failed to converge, see Appendix A for further information). These initial results suggest that the influence of religiosity on psychological well-being may be greater when people perceive their country to be more religious, but that this matters more when that country is culturally tighter (Figures 1 and 2).

Multiculturalism may dampen the importance of cultural match

Multiculturalism, or the experience of multiple cultures via background, identification, or orientation (Benet-Martínez, 2012), is another society-level cultural factor that may matter for the relationship between religiosity and well-being. On the one hand, a highly multicultural society may encourage individuals to maintain their own unique cultural customs, practices, and beliefs (Rosenthal & Levy, 2012), resulting in cultural norms being less important. On the other hand, it is possible that in a multicultural society, society-level norms are valued because they facilitate smooth social interactions with those from other socio-cultural and linguistic groups. We initially predicted that the extent to which perceived cultural norms of religiosity shape the link between religiosity and well-being would be weaker within nations that are highly multicultural (i.e., those that encourage maintaining different individual cultures) and stronger in nations that are less multicultural (i.e., those that encourage assimilation to the broader culture).

We tested this by re-analyzing the MARP data with three different diversity indices, making the assumption that greater societal-level diversity is linked to a greater societal-level endorsement of multiculturalism. We used the ethnic, religious, and linguistic fractionalization index, reported in Alesina and colleagues (2003), which is the probability of two randomly drawn people from a country being from different ethnicities, religions, or linguistic groups. Models had the same control variables

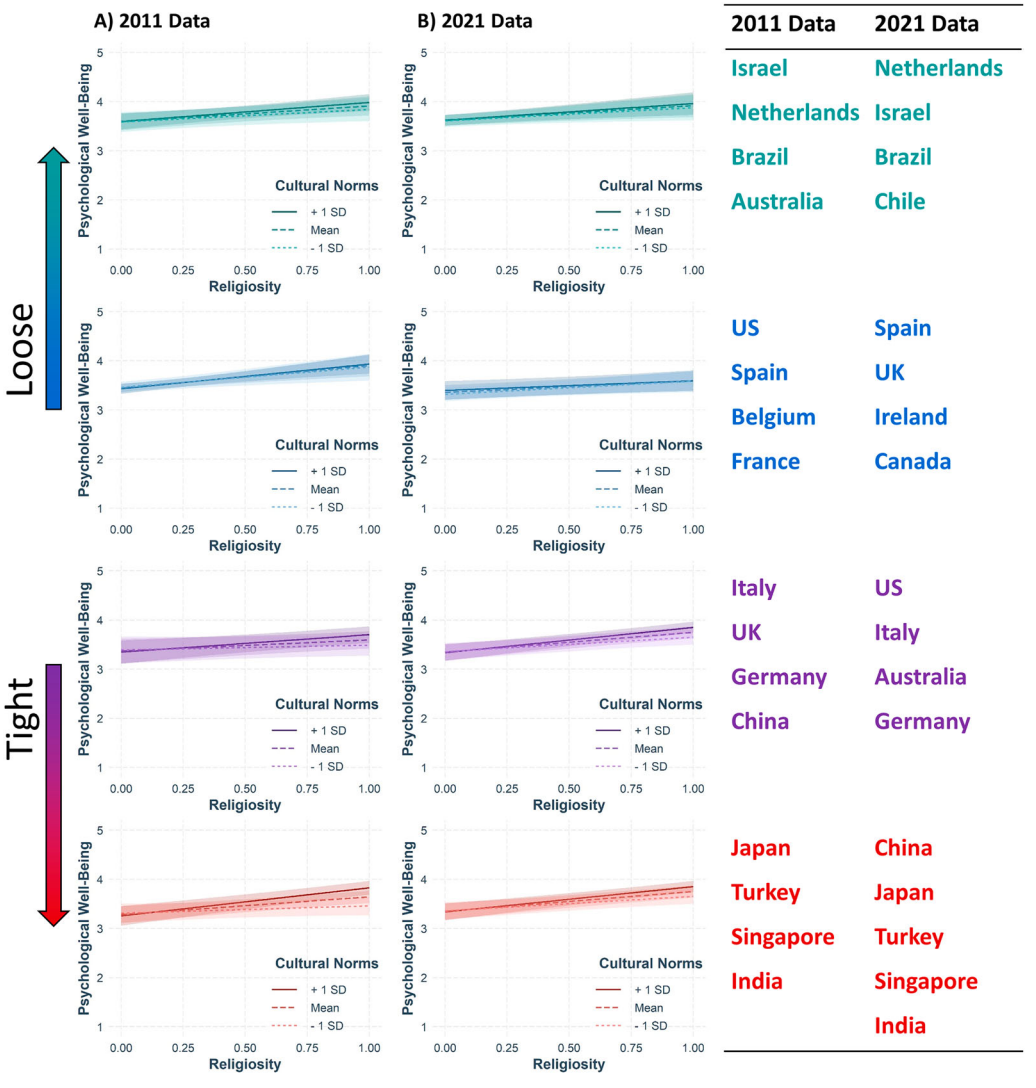

Figure 1. Religiosity x Cultural Norms on Psychological Well-Being by Tightness-Looseness.

Note. This is for psychological well-being only. Some countries were not found in Gelfand et al., 2011 and 2021, so results and visualizations excluded those countries. A) Psychological well-being using Gelfand et al., 2011. B) Psychological well-being using Gelfand et al., 2021.

mentioned previously. We did not observe evidence of the 3-way interaction between nation-level diversity × person-level religiosity × person-level perceived cultural norms using ethnic or religious diversity (some of these models did not converge; see Appendix A for further information), but we did observe evidence of the 3-way interaction using linguistic diversity on social ($b = 1.51$, $SE = 0.50$, $p = .003$) and psychological well-being ($b = 1.35$, $SE = 0.39$, $p < .001$). Upon visualization, we observed evidence in favor of the opposite pattern from our initial prediction. Whereas we predicted that cultural norms would matter less in more multicultural societies, we found that cultural norms mattered the most for multicultural societies. Overall, initial results suggest that cultural norms of religion may shape the link between religiosity and well-being in particularly multicultural societies. The presence of many different socio-cultural linguistic groups may make the shared overarching cultural norms more important. A great limitation of these results, however, comes from the way we use ethnic, religious, and linguistic diversity as proxy measures for multiculturalism.

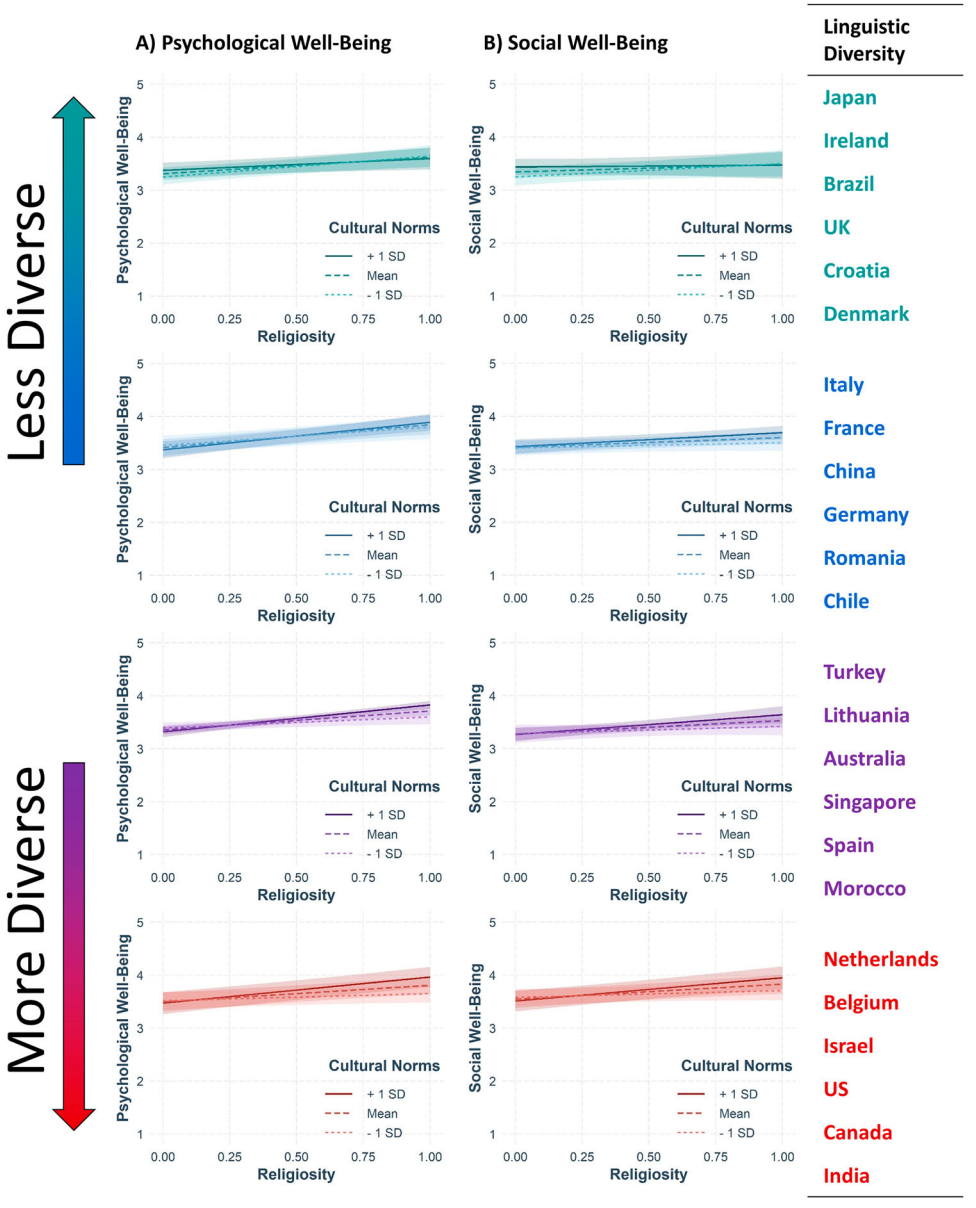

Figure 2. Religiosity x Cultural Norms on Psychological and Social Well-Being by Linguistic Diversity.
Note. These are visualizations for linguistic diversity only. A) Psychological well-being. B) Social well-being.

Conclusion

Although religiosity may generally predict higher well-being, it is important to consider how cultural contexts may shape this relationship. The MARP provided some evidence that perceived cultural norms of religion can moderate the religiosity and well-being link, but the story was not exactly clear. It is possible that specific cultural contexts – such as tightness–looseness and multiculturalism – shape the nature of this relationship, demonstrating how a cultural perspective may at the same time complicate and clarify the story. By examining the country-level variation of tightness–looseness, we observed evidence that the influence of religiosity on psychological

well-being specifically may be greater when people perceive their religiosity as being a social norm within their nation, particularly when nations are culturally tight. Additionally, when looking at multiculturalism within the country, our initial results suggest that cultural norms of religion may shape the link between religiosity and well-being in particularly multicultural societies, which is contrary to our predictions about multiculturalism. Additionally, our three-way interaction was significant for some forms of well-being, but not for others. Our initial results illustrate the need to consider how the cultural context can shape the religion and well-being link. Future research should empirically test potential moderating effects of culture, notably tightness–looseness and multiculturalism. Future research should also note the importance of obtaining more data across a larger sample of countries, and larger sample size within countries, to obtain enough statistical power to test these proposed three-way interactions.

Note

1. Similar to the person–culture match hypothesis, which suggests when a person's traits match the prevalent traits in the broader culture it increases well-being (Fulmer et al., 2010).

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendix A

All multilevel models were fitted with lmerTest package, and lmer() function in R. Restricted maximum likelihood was used.

Fixed effects: Religiosity, cultural norms of religion, (nation-level) tightness/diversity index, gender, age, SES, education, (nation-level) GDP.

Random effects nested by country: Intercept, religiosity, cultural norms of religion, gender, age, SES, education.

Example R script with tightness index:

$$
\begin{aligned}
mod < - \ & lmer(well\_being \sim religiosity{*}cultural\_norms{*}tightness + \\
& gender + age + ses + education + gdp + (1 + religiosity + \\
& cultural\_norms + gender + age + ses \ + education|country), \\
& data = DATA\_NAME, REML = T)
\end{aligned}
$$

$$
summary(mod)
$$

All R analyses can be found on our OSF page (osf.io/6cqv2).

Original analyses are on p. 2. We address the non-convergence issues on p.3.

All 3-way interaction (religiosity × cultural norms × tightness) statistics for tightness models:

Outcome Variable		*b*	*SE*	*p*
Gelfand et al., 2011*				
	General well-being	–	–	–
	Psychological well-being	0.12	0.04	.005
	Social well-being	–	–	–
	Physical well-being	–	–	–
Gelfand et al., 2021				
	General well-being	–	–	–
	Psychological well-being	1.15	0.32	< .001
	Social well-being	–	–	–
	Physical well-being	–	–	–

Note. *The Gelfand et al., 2011 paper computed a score for both West and East Germany. The West Germany score is used in this model. All models that were re-run with East Germany reported similar coefficients to those with West Germany but failed to converge, so they are not reported here. Missing coefficients indicate model failed to converge. *b* coefficients are unstandardized. Tightness indices from the 2011 and 2021 data are on different scales.

All 3-way interaction (religiosity × cultural norms × diversity) statistics for each diversity model:

Outcome Variable		*b*	*SE*	*p*
Ethnic Diversity				
	General well-being	–	–	–
	Psychological well-being	–	–	–
	Social well-being	–	–	–
	Physical well-being	0.48	0.45	.288
Religious Diversity				
	General well-being	0.29	0.34	.392
	Psychological well-being	0.25	0.31	.420
	Social well-being	–	–	–
	Physical well-being	–	–	–
Linguistic Diversity				
	General well-being	0.41	0.44	.344
	Psychological well-being	1.35	0.39	< .001
	Social well-being	1.51	0.50	.003
	Physical well-being	0.56	0.37	.131

Note. Missing coefficients indicate model failed to converge. *b* coefficients are unstandardized.

Resolving non-converging models.

Our final analyses resulted in several non-converging models. Non-convergence usually suggests that the model is either too complex relative to the sample size, the model is poorly specified (e.g., none of the variables are related to another), or both.

We simplified the models by removing covariate random effects by nation (i.e., gender, age, SES, education), then re-running the model. If the model continued to not converge, then we removed GDP (nation-level fixed effect). All models below are reported with removed random effects unless specified that GDP was removed as well.

All 3-way interaction (religiosity × cultural norms × tightness) statistics for tightness models:

Outcome Variable		*b*	*SE*	*p*
Gelfand et al., 2011*				
	General well-being	0.08	0.05	.114
	Psychological well-being	–	–	–
	Social well-being	0.05	0.06	.427
	Physical well-being†	0.02	0.04	.689
Gelfand et al., 2021				
	General well-being	0.63	0.34	.061
	Psychological well-being	–	–	–
	Social well-being	0.70	0.43	.103
	Physical well-being	0.19	0.31	.545

Note. Models that fully converged are not reported here. *West Germany scores were used in this model. †Physical well-being model required removing GDP as well before it converged.

All 3-way interaction (religiosity × cultural norms × diversity) statistics for each diversity model:

Outcome Variable		*b*	*SE*	*p*
Ethnic Diversity				
	General well-being	0.91	0.53	.089
	Psychological well-being	0.71	0.48	.135
	Social well-being	1.30	0.63	.038
	Physical well-being	–	–	–
Religious Diversity				
	General well-being	–	–	–
	Psychological well-being	–	–	–
	Social well-being	0.29	0.28	.469
	Physical well-being†	0.13	0.29	.647

Note. Linguistic Diversity fully converged in the original results and are thus not reported here. Other models that fully converged are not reported here. †Physical well-being model required removing GDP as well before it converged.

We were able to reach convergence by removing a few of the covariate random or fixed effects. These new models, however, did not result in any strong evidence towards most 3-way interactions. This suggests that the non-convergence stemmed from a combination of models being both too complex and poorly specified.

The only observed 3-way interaction was with ethnic diversity on social well-being. The effect size is similar in magnitude to the other significant 3-way interaction coefficients from linguistic diversity, but standard error was somewhat high. This suggests this 3-way interaction is a true effect, but did not converge originally because the model was too complex.