Muslim afterlife reward and punishment beliefs and expectations profiles

Riyad Salim Al-Issa

University Putra Malaysia, Serdang, Malaysia
E-mail: alissariyad@gmail.com

Steven Krauss

University of Missouri, Columbia, USA
E-mail: skrauss@missouri.edu

Haslinda Abdullah

University Putra Malaysia, Serdang, Malaysia
E-mail: lynn@upm.edu.my

Samsilah Roslan

University Putra Malaysia, Serdang, Malaysia
E-mail: samsilah@upm.edu.my

Bha-Aldan Mundher Oraibi

UNITAR International University, Petaling Jaya, Malaysia
E-mail: bha.aldan@unitar.my

Abstract

Literature from the cognitive and cultural evolutionary sciences of religion indicates that afterlife reward and punishment beliefs increase prosociality. Although Muslims are among the strongest adherents in afterlife reward and punishment belief, there is evidence that there are low levels of prosociality in these societies. This study explores this paradox. Because previous studies have mostly relied on variable-centered approaches to analysis, it is difficult to understand how defferent afterlife beliefs and expectations together affect Muslims. Using a person-centered approach, the current study employed Latent Profile Analysis to understand how Islamic afterlife reward and punishment beliefs and expectations interact with each other, and what profiles result from this interaction. The study further explored the relationships between the resulting profiles with religiosity, prosociality (integrity, rule breaking ability, self-control), death attitude (death anxiety, and acceptance), and future orientation. The study used data collected from Jordanian university students (n= 605). The results indicate that profiles with high levels of afterlife reward and punishment beliefs and afterlife hope expectations have a positive association with religiosity, prosociality and death attitude, while profiles with high levels of afterlife fear expectation, temporary afterlife punishment expectation, and compulsory temporary afterlife punishment belief have a negative association with religiosity, prosociality and death attitude. The profiles that show the best performance constitutes only 23 percent of the sample. The study results confirm the existence of a unique phenomenon in which supernatural punishment beliefs have a negative effect on prosocial behavior resulting from belief in temporary punishment in the afterlife.

Literatur dari ilmu kognitif dan evolusi budaya agama menunjukkan bahwa keyakinan tentang pahala dan hukuman akhirat meningkatkan prososialitas. Meskipun umat Islam termasuk penganut terkuat dalam keyakinan pahala dan hukuman akhirat, ada bukti menunjukkan tingkat prososialitas yang rendah dalam masyarakat ini. Studi ini mengeksplorasi paradoks ini. Karena studi sebelumnya sebagian besar mengandalkan pendekatan analisis yang berpusat pada variabel, sulit untuk memahami bagaimana keyakinan dan harapan akhirat yang berbeda secara bersama-sama memengaruhi umat Islam. Dengan menggunakan pendekatan yang berpusat pada orang, studi ini menggunakan Analisis Profil Laten untuk memahami bagaimana keyakinan dan harapan pahala dan hukuman akhirat Islam berinteraksi satu sama lain, dan profil apa yang dihasilkan dari interaksi ini. Studi ini selanjutnya mengeksplorasi

hubungan antara profil yang dihasilkan dengan religiusitas, prososialitas (integritas, kemampuan melanggar aturan, pengendalian diri), sikap kematian (kecemasan kematian, dan penerimaan), dan orientasi masa depan. Studi ini menggunakan data yang dikumpulkan dari mahasiswa universitas Yordania (n= 605). Hasilnya menunjukkan bahwa profil dengan tingkat keyakinan yang tinggi terhadap pahala dan hukuman akhirat serta harapan-harapan akhirat memiliki hubungan positif dengan religiusitas, prososialitas, dan sikap terhadap kematian, sementara profil dengan tingkat harapan yang tinggi terhadap ketakutan akhirat, harapan terhadap hukuman akhirat sementara, dan keyakinan terhadap hukuman akhirat sementara yang wajib memiliki hubungan negatif dengan religiusitas, prososialitas, dan sikap terhadap kematian. Profil yang menunjukkan kinerja terbaik hanya mencakup 23 persen dari sampel. Hasil studi mengonfirmasi keberadaan fenomena unik di mana keyakinan terhadap hukuman supernatural memiliki efek negatif pada perilaku prososial yang diakibatkan oleh keyakinan terhadap hukuman sementara di akhirat.

Keywords: *Afterlife beliefs; Supernatural punishment; Prosociality; Death attitude; Latent Profile Analysis*

Introduction

The influence of religion on prosociality and the underlying mechanisms of this influence constitute a focal subject within the current landscape of cognitive and cultural evolutionary studies of religion.[1] One of the most important mechanisms through which researchers assume that religion enhances prosociality is the belief in supernatural punishment.[2] Much literature supports the idea that belief in a god who has the ability to punish enhances cooperative behavior.[3] Sociologists are now trying to

---

[1]Benjamin Purzycki, "The Evolution of Religion and Morality project: reflections and looking ahead", *Religion, Brain & Behavior*, Vol. 12, no. 1-2 (2022), 190-211.

[2]Dominic Johnson, *God is watching you: How the fear of God makes us human*, New York: Oxford University Press, USA, 2016; Ara Norenzayan, "The cultural evolution of prosocial religions", *Behavioral and Brain Sciences*, Vol. 39 (2016).

[3]Aiyana Willard et al., "Rewarding the good and punishing the bad: The role of karma and afterlife beliefs in shaping moral norms", *Evolution and Human Behavior*, Vol. 41, no. 5 (2020), 385–396.

link these findings with sociological theories that explain the role that religion plays in society.[4]

Few studies investigate the impact of belief in supernatural punishment on prosociality in contemporary Islamic societies[5] and those that exist are limited by small sample sizes.[6] Nonetheless, contemporary Islamic societies offer an compelling context for investigating the correlation between supernatural punishment beliefs and prosocial behavior, given the robust commitment of Muslims to beliefs in the afterlife, heaven, and hell.[7] This assertion finds support in data from the seventh wave of the World Values Survey.[8] For instance, the prevalence of belief in Hell in Egypt, the most populous Arab nation, stands at 99.5 percent, while in Jordan and Malaysia, it registers at 96.8 percent and 97.1 percent, respectively. The percentage of believers in Heaven are even higher. The importance of these numbers becomes clear when we compare them with other countries such as the United States and Germany, where the percentages of believers in Hell only reach 66.7 and 14.7 percent, respectively.[9]

While researchers have yet to fully understand this phenomenon, the reason for the widespread belief in afterlife reward and punishment among Muslims could be the Holy Qur'an. The Qur'an serves as the primary sacred scripture within the Islamic faith, with Muslims firmly adhering to the belief that it constitutes the verbatim word of God, disclosed to

---

[4]Kevin McCaffree et al., "Big Gods, socio-cultural evolution and the non-obvious merits of a sociological interpretation", *Religion*, Vol. 50, no. 4 (2020), 570.

[5]Onurcan Yilmaz et al., "Supernatural and secular monitors promote human cooperation only if they remind of punishment", *Evolution and Human Behavior*, Vol. 37 (2016), 79–84.

[6]James Saleam et al., "The Influence of Divine Rewards and Punishments on Religious Prosociality", *Front. Psychol.*, Vol. 7 (2016), 1149.

[7]Rachel McCleary, "Religi on and economic development", *Policy Review*, no. 148 (2008), 45.

[8]C. Haerpfer, et al. (eds.), World Values Survey: Round Seven – Country-Pooled Datafile Version 6.0. Madrid, Spain & Vienna, Austria: JD Systems Institute & WVSA Secretariat, 2022. doi:10.14281/18241.24

[9]Haerpfer, "World Values Survey...

the Prophet Muhammad during a span of 23 years. Descriptions of the afterlife, judgment day, heaven and hell, and reward and punishment are among the most prominent topics in the Qur'an.[10] According to the Qur'an, God sent prophets to mankind to bring good tidings of the rewards of heaven and to warn of the punishment of hell.[11] This is one of the primary purposes of the revelation of the Qur'an.[12] A Muslim's prayer is not accepted without reciting the opening chapter of the Qur'an, *Surat Al-Fatihah*. The *surah* (chapter) is a prayer addressed to God, as the master of the day of judgment, in which believers seek salvation from the punishment of hell. In addition, the Qur'an often links belief in God with belief in the day of judgment.[13] The Qur'an considers the reason for people's reluctance to value monotheism (the supreme value in Islam) as a lack of faith in judgment day.[14] The Qur'an portrays human existence as a "moral examination," with the afterlife serving as the outcome or "assessment result."[15] As a result, these beliefs comprise the core tenets of faith for most Muslims.

Coupled with the wealth of studies showing that afterlife beliefs enhance cooperative behavior, the high levels of afterlife belief in contemporary Islamic societies would be expected to correlate with high levels of prosociality. However, much research indicates the opposite. In Islamic nations, it is commonly observed that there are lower levels of integrity

---

[10]Amir Dastmalchian, "*Islam*", in Yujin Nagasawa et al. (eds.), *The Palgrave Handbook of the Afterlife*, London: Palgrave Macmillan, 2017: 153–73; Sebastian Günther, "*Eschatology and the Qur'an*", in Mustafa Shah et al. (ed.), *The Oxford Handbook of Qur'anic Studies*, New York: Oxford University Press, 2020; Christian Lange, *Paradise and Hell in Islamic Traditions*, Cambridge: Cambridge University Press, 2016.

[11]Qur'an 6:48; 18:56; 25:56; 17:105

[12]Qur'an 19:97; 18:1-2

[13]Qur'an, 65:2

[14]Qur'an 39: 45

[15]Grant Shafer, "*Al-Ghayb wa-l'Akhirah: Heaven, Hell, and Eternity in the Qur'an*", in Harold Ellens (ed.), *Heaven, Hell, and the Afterlife: Eternity in Judaism, Christianity, and Islam*, Vol. 3, Westport, CT: Praeger, 2012: 9–42.

and elevated instances of corruption,[16] low adherence to laws,[17] inferior government performance,[18] and low generalized trust,[19] Contrary to Protestants, belief in hell in Islamic countries does not favor economic growth.[20] Nations with predominantly Islamic populations exhibit a tendency toward lower levels of self-control,[21] which is an important factor in activating prosocial behavior.[22] These seemingly contradictory results highlight the need for deeper investigation into how Muslims interpret beliefs surrounding afterlife reward and punishment.

In response to this gap, researchers recently developed five scales that measure different aspects of afterlife reward and punishment beliefs and expectations.[23] These measures have deepened understanding of Muslims'

---

[16]Beets Douglas, "Global Corruption and Religion: An Empirical Examination", *Journal of Global Ethics*, Vol. 3 (2007), 69-85; Rafael La Porta, "The Quality of Government", *The Journal of Law, Economics, and Organization*, Vol. 15 (1999), 222-79; Yaw Mensah, "An Analysis of the Effect of Culture and Religion on Perceived Corruption in a Global Context", *Journal of Business Ethics*, Vol. 121 (2014), 255-82; Charles North, "Religion, Corruption, and the Rule of Law", *Journal of Money, Credit and Banking*, Vol. 45 (2013), 757-79; Martin Paldam, "Corruption and Religion Adding to the Economic Model", *Kyklos*, Vol. 54 (2001), 383-413.

[17]Charles North, "Religion, Corruption…

[18]La Porta et al., "The Quality of Government…

[19]Timur Kuran, "Islam and economic performance: Historical and contemporary links", *Journal of Economic Literature*, Vol. 56, no. 4 (2018), 1292-1359.

[20]Rachel McCleary et al., *The Wealth of Religions: The Political Economy of Believing and Belonging*, Princeton, NJ: Princeton University Press, 2019.

[21]Armin Falk, "Global evidence on economic preferences", *The Quarterly Journal of Economics*, Vol. 133, no. 4 (2018), 1645–1692.

[22]Denise de Ridder, "Taking Stock of Self-Control: A Meta-Analysis of How Trait Self-Control Relates to a Wide Range of Behaviors", *Personality and Social Psychology Review*, Vol. 16 (2012), 76-99.

[23]Riyad Al-Issa et al., "To Heaven or to Hell: Are Muslims' Afterlife Hope and Fear Balanced? A Cross-Cultural Study", *Review of Religious Research*, Vol. 62 (2020), 351-368; Riyad Al-Issa et al., "The Relationship between Afterlife Beliefs and Mental Wellbeing among Jordanian Muslim Youth", *Journal of Muslim Mental Health*, Vol. 15 (2021), 1–18; Riyad Al-Issa et al., "To Heaven through Hell: Are There Cognitive Foundations for Purgatory? Evidence from Islamic Cultures", *Religions*, Vol. 12, no. 11 (2021); Riyad Al-Issa et al., "Can I Pay at Purgatory? The Negative Impact of the Purgatory Ethic in Islamic Societies: Theoretical and Empirical Evidence", *Religions*, Vol. 13, no. 2 (2022); Riyad Al-Issa et al., "Afterlife beliefs and obligation to obey the law in high adherence contexts: exploring connections among

afterlife beliefs and how they influence behavior. The researchers found that afterlife reward and punishment beliefs positively predicted integrity. However, the effect of afterlife reward and punishment beliefs on integrity was small, especially after controlling for religiosity.[24] In another study, Al-Issa et al. developed the Afterlife Hope Expectations scale and the Afterlife Fear Expectations scale. The Afterlife Hope Expectations scale measures the expectation of entering heaven, and the Afterlife Fear Expectations scale measures the expectation of being punished in hell. The results from Jordan and Malaysia indicated a high level of afterlife hope expectations and a low level of afterlife fear expectations among Muslims. Contrary to the literature, the study found that afterlife fear expectations were positively associated with rule breaking ability in both Jordan and Malaysia.[25]

To understand this phenomenon, the researchers proposed that belief in afterlife punishment may lose its positive effect if the individual believes that afterlife punishment on account of one's sins is only temporary in nature, and will, inevitably be followed by eternal bliss due to one's profession of faith.[26] After presenting the theoretical and empirical literature, the researchers designed the Temporary Afterlife Punishment Expectation scale. Subsequent analysis showed a strong relationship between temporary afterlife punishment expectation and afterlife fear expectations, which indicates that most Muslims view punishment as temporary. Using path analysis, the researchers further found that temporary afterlife punishment expectation has a negative effect on self-control and integrity, as well as increases rule breaking ability.[27]

As a result of this work, the researchers developed a new scale to

Malaysian youth", *Journal of Beliefs & Values*, Vol. 15, no. 1 (2023): 1-14.

[24]Al-Issa et al., "The Relationship between...

[25]Al-Issa et al., "To Heaven or to Hell...

[26]Al-Issa et al., "Can I Pay at Purgatory...

[27]Al-Issa et al., "Can I Pay at Purgatory...

measure compulsory temporary afterlife punishment belief. This belief, identified during Muslim afterlife expectations, contrasts with normative Islamic theology and is a form of theological incorrectness. Compulsory temporary afterlife punishment belief posits that the majority of Muslims must undergo posthumous punishment to be purified of their sins before gaining entry to heaven, irrespective of the balance of their good and bad deeds during their lifetime.[28] This perspective appears to be at odds with established Islamic theological doctrine, which asserts that if a Muslim's virtuous deeds during their earthly existence outweigh their transgressions, they will gain admission to heaven without experiencing suffering or punishment in hell.[29] The effect of this belief on cooperative behavior remains unknown. However, the similarity of its basic idea with temporary afterlife punishment expectation is likely to have a similar negative effect.

Although recent studies have deepened our understanding of how Muslims understand afterlife beliefs, there are still many questions that need answers. The most important of these is how these different beliefs and expectations interact with each other. For instance, how do Muslims adopt these beliefs and expectations that appear to have contradictory effects?

Given the background above, this study attempts to answer this question by using the Afterlife Reward and Punishment Beliefs and Expectations scales in conjunction with latent profile analysis to explore Muslim profiles of afterlife reward and punishment beliefs and expectations. Latent profile analysis is "a categorical latent variable approach that focuses on identifying latent subpopulations within a population based on a certain set of variables".[30] It is often used for obtaining probabilities that individuals

---

[28]Al-Issa et al., "To Heaven through Hell...

[29]William Chittick, "Muslim eschatology", in Jerry Walls (ed.), *The Oxford Handbook of Eschatology*, New York: Oxford University Press, 2008: 132–50.

[30]Daniel Spurk et al., "Latent profile analysis: A review and 'how to' guide of its application within vocational behavior research", *Journal of Vocational Behavior*, Vol. 120 (2020), 103445.

belong to different groups, in order to investigate relationships between groups (profiles) and a set of outcome variables.[31]

In the current study, we used the same data collected by Al-Issa and colleagues from Jordan,[32] which contains the Afterlife Reward and Punishment Beliefs and Expectations measures in addition to variables related to prosocial behavior: integrity, rule breaking ability, self-control, and future orientation, which previous studies found to be one of the mechanisms of the influence of afterlife beliefs on positive behavior.[33] The dataset also incorporates an assessment of death anxiety and acceptance. Past research has indicated that Muslims tend to exhibit elevated levels of death anxiety compared to followers of different religious traditions.[34] Some studies suggest that the reason for this is the nature of Islamic afterlife beliefs.[35] Finally, the current study dataset also contains variables that measure religiosity.

Detailed information about the measures used in the study, the participants, and the data analysis procedure is available in the

[31]Zsuzsa Bakk et al., "Relating latent class membership to external variables: An overview", *British Journal of Mathematical and Statistical Psychology*, Vol. 74, no. 2 (2021), 340-362.

[32](https://osf.io/4b3nq/?view_only=2367d02a57ae4ac5ab84bafcb1f411f2)

[33]Christopher Holmes et al., "Adolescents' religiousness and substance use are linked via afterlife beliefs and future orientation", *The Journal of Early Adolescence*, Vol. 37, no. 8 (2017), 1054-1077.

[34]Ahmed Abdel-Khalek, "Death obsession in Arabic and Western countries", *Psychological Reports*, Vol. 97, no. 1 (2005), 138-140; Ahmed Abdel-Khalek, "The Arabic Scale of Death Anxiety: Some Results from East and West", *Journal of Death and Dying*, Vol. 59, no. 1 (2009), 39-50; Ahmed Abdel-Khalek, "Anxiety and Death Anxiety in Egyptian and Spanish Nursing Students", *Death Studies*, Vol. 29, no. 2 (2005), 157-169; Lee Ellis et al., "Religiosity and fear of death: A three nation comparison", *Mental Health, Religion & Culture*, Vol. 16, no. 2 (2013), 179–99; Ian Fischer et al., "Examination of the relationships between religiosity and death attitudes in Turkey and the United States", *Death Studies*, Vol. 46, no. 1 (2020), 1-11; Gareth J. Morris et al., "Are personality, well-being and death anxiety related to religious affiliation?", *Mental Health, Religion and Culture*, Vol. 12, no. 2 (2009), 115-120.

[35]Nima Ghorbani, "Afterlife Motivation Scale: Correlations with maladjustment and incremental validity in Iranian Muslims", *The International Journal for the Psychology of Religion*, Vol. 18, no. 1 (2008): 22–35.

supplementary materials. Table 1 presents the descriptive statistics and reliability of the study variables. The current study has two objectives: to identify the afterlife reward and punishment beliefs and expectations profiles among Muslims; and to determine the relationship between afterlife reward and punishment beliefs and expectations profiles with the outcome variables (integrity, rule breaking ability, self-control, future orientation, death anxiety, and death acceptance).

Drawing on previous related literature, we hypothesized that profiles with high levels of afterlife reward and punishment beliefs, afterlife hope expectations and lower levels of afterlife fear expectations, temporary afterlife punishment expectation and compulsory temporary afterlife punishment belief are associated with high levels of future orientation, integrity, self-control, and death acceptance, and lower levels of rule-breaking ability and death anxiety.

Table 1. Descriptive Statistics and Reliability (n = 605)

No.	Variable	Items	M	SD	Skew.	Kurt.	α	ω	GLB
1	ARPB	5	4.15	0.59	-1.21	2.45	.60	.61	.71
2	AHE	6	4.22	0.83	-1.55	2.65	.89		
3	AFE	6	2.23	0.76	0.54	0.17	.81	.81	.82
4	TAPE	4	2.80	0.81	0.04	-0.25	.63	.65	.70
5	CTAPB	5	2.82	0.72	-0.50	0.31	.75	.75	.83
6	IR	3	4.31	0.78	-1.73	3.77	.79	.81	.81
7	ORA	1	3.54	1.61	0.05	-1.08	-	-	-
8	NORA	1	3.72	1.71	-0.17	-1.36	-	-	-
9	FPTP	3	3.76	0.75	-0.75	0.98	.59	.61	.64
10	Integrity	18	3.64	0.45	-0.06	0.21	.70	.69	.80
11	RBA	3	2.43	0.90	0.19	-0.32	.68	.68	.67
12	Self-control	3	3.16	0.85	-0.06	-0.60	.51	.53	.54

No.	Variable	Items	M	SD	Skew.	Kurt.	α	ω	GLB
13	Death An.	1	3.77	1.33	-0.82	-0.52	-	-	-
14	Death Ac.	3	3.92	0.79	-0.88	1.08	.66		

Note. ARPB = Afterlife Reward and Punishment Beliefs, AHE = Afterlife Hope Expectation, AFE = Afterlife Fear Expectation, TAPE = Temporary Afterlife Punishment Expectation, CTAPB = Compulsory Temporary Afterlife Punishment Belief, IR = Intrinsic Religiosity, ORA = Organization Religious Activities, NORA = Non-Organizational Religious Activities, FPTP = Future Positive Time Perspective, RBA = Rule Breaking Ability, Death An. = Death anxiety, Death Ac. = Death acceptance, α = Cronbach alpha, ω = McDonald Omega, GLB = Greatest Lower Bound.

*Item number 13 has been deleted to increase the reliability of the measure.

Number of latent afterlife reward and punishment beliefs and expectations profiles

Various models ranging from one to eight latent profiles were fitted to the data. The estimation process proceeded smoothly without any error messages, and it was evident that the highest log-likelihood value, which is closest to zero, was consistently replicated. This indicates that the results were not influenced by local maxima. Detailed fit information and selection criteria for these latent profiles can be found in Tables 2, 3, and 4. The Bayesian information criterion (BIC) reached its lowest value for the 7-profile model, while the 7-profile model exhibited the second-lowest CAIC value, with a Δ CAIC of less than six. On the other hand, the AIC and SABIC indices continued to decrease with an increasing number of extracted profiles. Both the Vuong-Lo-Mendell-Rubin ratio test (VLMR) p-value and bootstrapped likelihood ratio test (BLRT) p-value indicated a significant improvement in model fit as one profile was added to the 7-profile model. However, based on the Bayes factor (BF) and correct model probability (cmP), the 7-profile model was considered the preferred choice.

Table 2. Evaluating Profile Solutions: Model fit criteria (n = 605)

K	LL	BIC	AIC	CAIC	SABIC	VLMR p	BLRT p	BF	cmP
1	-3387.68	6839.42	6795.37	6849.42	6807.68			0.000	.00
2	-3153.40	6441.31	6348.81	6462.31	6374.64	0.0000	0.0000	0.000	.00
3	-3028.56	6262.08	6121.12	6294.08	6160.49	0.0000	0.0000	0.000	.00
4	-2903.92	6083.26	5893.84	6126.26	5946.75	0.0000	0.0000	0.000	.00
5	-2849.29	6044.46	5806.58	6098.46	5873.03	0.0004	0.0000	0.000	.00
6	-2804.41	6025.16	5738.82	6090.16	5818.80	0.0042	0.0000	.12	.12
7	-2767.07	**6020.95**	5686.15	**6096.95**	5779.67	0.0000	0.0000	>10	1
8	-2734.27	6025.79	5642.54	6112.79	5749.59	0.0010	0.0000		.08

Note. N = 605. K = number of profiles. LL = log-likelihood; BIC = Bayesian information criterion; AIC = Akaike information criterion; CAIC = consistent Akaike information criterion; SABIC = sample-size adjusted BIC; VLMR p = Vuong-Lo-Mendell-Rubin ratio test; BLRT p = bootstrapped likelihood ratio test; BF = Bayes factor; cmP = correct model probability. Bolded values indicate "best" fit for each respective statistic.

Furthermore, the entropy value obtained for the 7-profile model (0.75) indicated that cases could be reasonably assigned to their respective latent profiles with an acceptable level of confidence. While it did not quite reach the ideal threshold of 0.80, it is worth noting that some researchers contend that entropy values falling within the range of 0.60 to 0.80 are still considered acceptable.[36]

Table 3. Evaluating Profile Solutions: Diagnostic criteria (n = 605)

K	Smallest class Count (n)	Smallest class Size (%)	Entropy
1	605	100	1.000
2	284	47	0.644
3	139	23	0.683
4	102	17	0.735
5	54	9	0.759
6	48	8	0.742

---

[36]Spurk et al., "Latent profile analysis...

K	Smallest class Count (n)	Smallest class Size (%)	Entropy
7	30	5	0.755
8	24	4	0.781

Note. N = 605. K = number of profiles.

Additionally, the classification quality demonstrated satisfactory categorization of individuals, as evident in the average posterior probabilities (AvePP) ranging from 0.73 to 0.92 across the 7-profile memberships (Table 4). Notably, the 7-profile model produced no profiles with a small sample size, with all profiles representing at least 5% of the total sample size (Table 3). Consequently, the selection of the 7-profile model was based on its enhanced identifiability, greater simplicity, and the logical interpretability of its parameter estimates.

Table 4. Classification Probabilities: 7-Profile Model (n = 605)

Profile	1	2	3	4	5	6	7
1	**.79**	.00	.03	.16	.06	.02	.09
2	.00	**.92**	.00	.00	.00	.00	.00
3	.04	.00	**.83**	.06	.06	.04	.00
4	.07	.01	.04	**.73**	.00	.00	.05
5	.04	.00	.02	.00	**.76**	.02	.00
6	.03	.00	.02	.00	.05	**.88**	.01
7	.00	.01	.00	.00	.00	.00	**.80**

Note. Values indicate probabilities of most likely Profile membership (column) by latent Profile modal assignment (row). Bolded values indicate average posterior probabilities (*AvePP*).

Size and shape of latent afterlife reward and punishment beliefs and expectations profiles

Figure 1 summarizes the seven profiles based on participant resopnses to the five key indicators. The horizontal x-axis displays the names of the

indicator variables related to afterlife reward and punishment beliefs and expectations, while the vertical y-axis displays the indicator means. Table 5 presents the indicator means for each profile.

Figure 1. Line graph comparing profiles on afterlife reward and punishment beliefs and expectations indicators
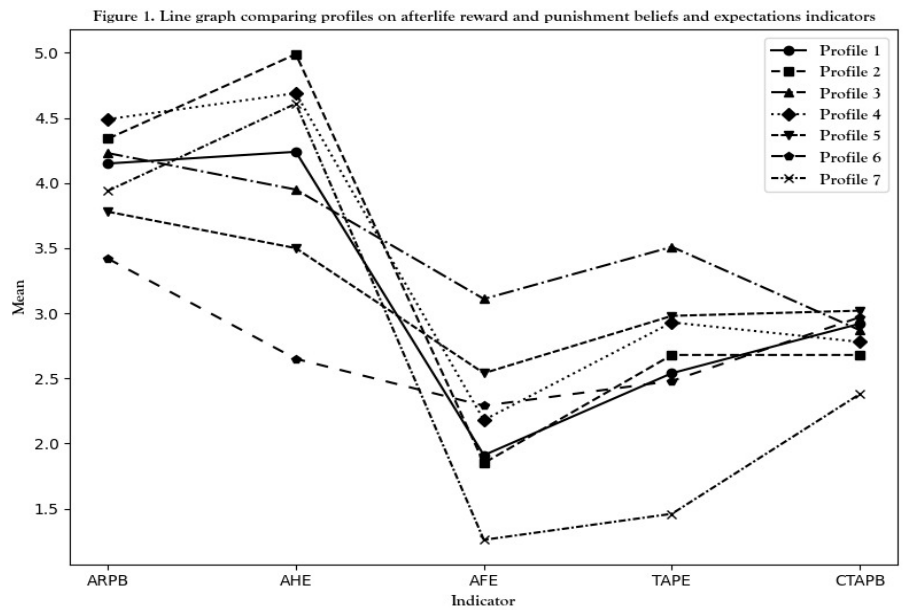
The first extracted group was the largest (n = 127, 21%), and showed average values in afterlife reward and punishment beliefs, above average values in afterlife hope expectations, compulsory temporary afterlife punishment belief, and below average values for afterlife fear expectations and temporary afterlife punishment expectation. The second group was large (n = 121, 20%), and showed the highest overall values in afterlife hope expectations, was characterized by below average values in afterlife fear expectations, temporary afterlife punishment expectation, compulsory temporary afterlife punishment belief, and above average values in afterlife reward and punishment beliefs. The third group was rather

large (n = 109, 18%) and showed the overall highest values in afterlife fear expectations and temporary afterlife punishment expectation, was characterized by below average values in afterlife hope expectations and above average values in afterlife reward and punishment beliefs and compulsory temporary afterlife punishment belief. The fourth group was medium sized (n = 97, 16%), showed the overall highest values in afterlife reward and punishment beliefs, was characterized by above average values in afterlife hope expectations and temporary afterlife punishment expectation, and below average values in afterlife fear expectations and compulsory temporary afterlife punishment belief. The fifth group was small (n = 54, 9%), showed the overall highest values in compulsory temporary afterlife punishment belief, above average values in afterlife fear expectations and temporary afterlife punishment expectation, and below average values in afterlife reward and punishment beliefs and afterlife hope expectations. The sixth group was small (n = 48, 8%), and showed the overall lowest values in afterlife reward and punishment beliefs and afterlife hope expectations, above average values in afterlife fear expectations, compulsory temporary afterlife punishment belief, and below average values in temporary afterlife punishment expectation. The seventh group was the smallest of all (n = 30, 5%), with the overall lowest values in afterlife fear expectations, temporary afterlife punishment expectation, compulsory temporary afterlife punishment belief, above average values in afterlife hope expectations, and below average values in afterlife reward and punishment beliefs.

Table 5. Indicators Means for Afterlife Reward and Punishment Beliefs and Expectations Profiles (n = 605)

	Profile							
	1	2	3	4	5	6	7	Overall
Profile Size %	0.21	0.20	0.18	0.16	0.09	0.08	0.05	
Indicators								
ARPB	4.15	4.34	4.23	**4.49**	3.78	**3.42**	3.94	4.15
AHE	4.24	**4.99**	3.95	4.69	3.50	**2.65**	4.61	4.22
AFE	1.91	1.85	**3.11**	2.18	2.54	2.29	**1.26**	2.23
TAPE	2.54	2.68	**3.51**	2.93	2.98	2.48	**1.46**	2.80
CTAPB	2.92	2.68	2.87	2.78	**3.02**	2.97	**2.38**	2.82

ARPB = Afterlife Reward and Punishment Beliefs, AHE = Afterlife Hope Expectation, AFE = Afterlife Fear Expectation, TAPE = Temporary Afterlife Punishment Expectation, CTAPB = Compulsory Temporary Afterlife Punishment Belief

Based on our hypothesis that afterlife reward and punishment belief and afterlife hope expectations have a positive effect and that afterlife fear expectations, temporary afterlife punishment expectation and compulsory temporary afterlife punishment belief have a negative effect, and based on the shape of the profiles, we can predict that the best performance will be for Profiles #2 and #7, while the worst performance will be for Profiles #3, #5 and #6, and that Profile #1 and #4 will be in the middle.

Associations between afterlife reward and punishment beliefs and expectations profiles and outcome variables

To assess variations across groups in the continuous outcome variables, we employed the BCH procedure within Latent GOLD. This method employs Wald tests to evaluate mean scores of outcomes among different groups. Fig. 2 and Table 6 provide the outcome variable values categorized by profile membership.

Table 6. Outcome Variables Means for Afterlife Reward and Punishment Beliefs and Expectations Profiles (n = 605)

Variables	Profile							
	1	2	3	4	5	6	7	Overall
IR	4.47	**4.64**	4.11	4.56	3.96	**3.51**	4.18	4.31
ORA	3.75	**3.79**	3.39	3.59	3.37	**2.88**	3.39	3.53
NORA	4.09	**4.42**	3.19	3.86	2.92	**2.77**	3.91	3.72
FPTP	3.82	**3.97**	3.61	3.83	3.64	**3.40**	3.72	3.76
Integrity	3.64	3.76	3.60	**3.80**	3.39	**3.37**	3.73	3.64
RBA	2.28	**2.13**	**2.79**	2.49	2.61	2.62	2.15	2.43
Self-control	3.09	3.28	**2.91**	3.35	3.16	3.11	3.38	3.16
Death An.	3.91	3.69	3.78	**4.30**	3.49	3.28	**3.13**	3.77
Death Ac.	3.89	**4.14**	3.97	4.06	3.62	**3.58**	3.63	3.92

IR = Intrinsic Religiosity, ORA = Organization Religious Activities, NORA = Non-Organizational Religious Activities, FPTP = Future Positive Time Perspective, RBA = Rule Breaking Ability, Death An. = Death anxiety, Death Ac. = Death acceptance.

Profile #1 has high levels of intrinsic religiosity and non-organizational religious activities (with significant differences to Profiles #3, #5 and #6), high levels of organization religious activities and future positive time perspective (with significant differences to Profile #6), average levels of integrity (significantly higher than Profile #5 and #6), low levels of rule breaking ability (with significant differences to Profile #3, #5 and #6), average levels of self-control, high levels of death anxiety (significantly higher than Profile #6 and #7), and low levels of death acceptance (significantly lower than Profile #2, and higher than Profile #5).

Figure 2. Line graph comparing variables across profiles
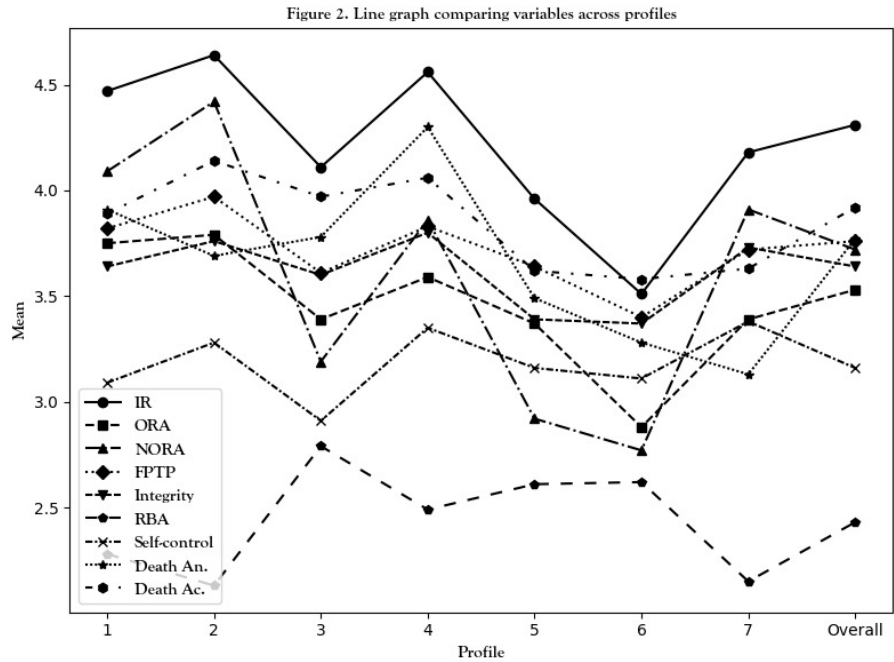
Profile #2 has the highest levels of intrinsic religiosity (with significant differences to all profiles except Profile #4), organization religious activities (with significant differences to Profile #6), non-organizational religious activities (with significant differences to all profiles except Profile #1 and #7), future positive time perspective (significant differences to Profile #3, #5, and #6), and death acceptance (significant differences to Profile #5, #6, and #7). Profile #2 has the lowest levels of rule breaking ability (with significant differences to all profiles except Profile #1 and #7), above average integrity (significant differences to all profiles except Profile #4 and #7), above average self-control (significant differences from Profile #3), and below average death anxiety (significant differences to Profile #4).

Profile #3 has the highest levels of rule breaking ability (with significant differences from Profile #1, #2 and #7), and the lowest levels of self-control

(significant differences from Profiles #2, #4, and #7). Profile #3 has below average levels of intrinsic religiosity, organization religious activities, non-organizational religious activities, Integrity, and average level of death anxiety and death acceptance.

Profile #4 has the highest levels of integrity (with significant differences from all profile except Profile #2, and #7), and the highest levels of death anxiety (with significant differences from all profile except Profile #1). Profile #4 has above average levels of intrinsic religiosity, organization religious activities, non-organizational religious activities, future positive time perspective, self-control, rule breaking ability, and death acceptance.

Profile #5 has below average levels of intrinsic religiosity, organization religious activities, non-organizational religious activities, future positive time perspective, integrity, death anxiety and death acceptance, and has above average levels of rule breaking ability.

Profile #6 has the lowest levels of intrinsic religiosity, organization religious activities, non-organizational religious activities, future positive time perspective, integrity, and death acceptance. Profile #6 has above average levels of rule breaking ability, and below average of death anxiety.

Profile #7 has the highest levels of self-control (significant differences from Profiles #3), the lowest levels of death anxiety (significant differences from Profiles #1, and #4), above average levels of non-organizational religious activities, Integrity, and below average levels of intrinsic religiosity, organization religious activities, future positive time perspective, rule breaking ability, and death acceptance.

As predicted, Profiles #2 and #7 showed the best performance, while Profiles #3, #5 and #6 showed the lowest performance, with Profiles #1 and #4 in the middle.

Conclusion

The findings from the latent profile analysis substantiate the overarching hypothesis of this study, demonstrating a positive association between beliefs in afterlife reward and punishment, along with afterlife hope expectation, are positively associated with prosocial behavior. Whereas afterlife fear expectation, temporary afterlife punishment expectation, and compulsory temporary afterlife punishment belief are negatively associated with prosocial behaviors. The outcomes, which reveal a positive correlation between afterlife reward and punishment beliefs along with afterlife hope expectation and prosocial behavior, align with recent research that underscores the role of supernatural benevolence in motivating prosocial conduct[37]. However, the results which indicate negative associations between afterlife fear expectation, temporary afterlife punishment expectation and compulsory temporary afterlife punishment belief with variables related to prosocial behavior contradict several previous studies.[38] We argue that the study results do not contradict the supernatural punishment hypothesis, but rather confirm the existence of a unique phenomenon in which supernatural punishment beliefs have a negative effect on prosocial behavior resulting from belief in temporary punishment in the afterlife.[39] The supernatural punishment hypothesis predicts a positive effect of supernatural punishment beliefs on prosociality when the supernatural punishment is *eternal and infinite*.[40]

---

[37]Kathryn Johnson et al., "God is watching you...but also watching over you: The influence of benevolent God representations on secular volunteerism among Christians", *Psychology of Religion and Spirituality*, Vol. 8 (2016), 363–374; Kathryn Johnson et al., "Fundamental social motives and the varieties of religious experience", *Religion, Brain & Behavior*, Vol. 5 (2015), 197–231; James Shepperd et al., "Belief in a Loving Versus Punitive God and Behavior", *Journal of Research on Adolescence*, Vol. 29, no. 2 (2019), 390-401; Cindel White et al., "Supernatural norm enforcement: Thinking about karma and god reduces selfishness among believers", *Journal of Experimental Social Psychology*, Vol. 84 (2019), 103797.

[38]Willard et al., "Rewarding the good and punishing the bad...

[39]Al-Issa et al., "Can I Pay at Purgatory...

[40]Dominic Johnson, "Why God is the best punisher", *Religion, Brain & Behavior*, Vol. 1, no.

However, the current study examines the effect of temporary afterlife punishment beliefs and expectations.

The results may help to explain why Muslim societies that have the strongest beliefs in heaven and hell suffer from high levels of corruption, low levels of adherence to laws, inferior government performance, low generalized trust, low levels of (patience) self-control, in addition to helping explain why belief in hell in Islamic countries does not associate with economic growth.

Furthermore, it is crucial to pursue additional research within Muslim populations belonging to sects that do not adhere to the concept of temporary afterlife punishment. Examples of such sects include the Ibadi sect found in Oman, Algeria, and several Maghreb nations, as well as the Zaidiyyah sect in Yemen. We expect that among sects that do not believe in temporary afterlife punishment, afterlife fear expectation may have a positive effect on prosociality. In the same context, future studies can examine whether temporary afterlife punishment explains why Protestants - who do not believe in temporary afterlife punishment–tend to measure higher on indicators of prosociality than Catholics.[41]

Regarding attitudes toward death, the latent profile analysis results indicate that profiles showing a low level of temporary afterlife punishment expectation and compulsory temporary afterlife punishment belief are associated with low levels of death anxiety and a high level of death acceptance. This finding may provide a partial explanation for the phenomenon of high death anxiety among Muslims. Since temporary punishment is viewed as the immediate post-death experience, so it is

---

1 (2011): 77-84; "The wrath of the academics: criticisms, applications, and extensions of the supernatural punishment hypothesis", *Religion, Brain & Behavior*, Vol. 8, no. 3 (2018), 320-350.

[41]Michiel van Elk, "Why Are Protestants More Prosocial Than Catholics? A Comparative Study among Orthodox Dutch Believers", *The International Journal for the Psychology of Religion*, Vol. 27 (2017), 65–81.

normal for those who believe in it to show high levels of death anxiety.

The current study's reliance on self-report questionnaires is one of its limitations. However, it may increase its ecological validity compared to most previous studies conducted in laboratory settings.[42] The other limitation is that it failed to measure prosociality directly; however, the variables used as indicators of prosociality have operational definitions that are closely related to the concept of prosociality, and previous studies found a stable relationship between these variables and prosociality. Future studies could employ alternative methodologies to examine the results of the current study, for instance, qualitative investigations employing open-ended questions regarding afterlife beliefs and expectations can offer an avenue for acquiring novel and unforeseen insights.[43]

The results of the latent profile analysis indicate that the profiles that show the best performance constitute only 23 percent of the sample (Profile #2, #4, and #7). This demonstrates the practical significance of the results of the study. Given that most Muslim countries offer scholastic religious education, improvements to Muslims' understanding of afterlife beliefs can be made through the improvement and development of religious education curricula, and the ways these beliefs are taught. To achieve this, future studies should first investigate how afterlife beliefs are presented in religious education curricula in Muslim countries.

In conclusion, religious congruence is rare, and this includes religious beliefs about the afterlife. As Mark Chaves emphasized,[44] formal religious education cannot achieve congruence because religious schooling is often

---

[42]Nicolas Baumard, "Has punishment played a role in the evolution of cooperation? A critical review", *Mind & Society*, Vol. 9 (2010), 171–92.

[43]Lene Jensen, "Afterlife beliefs among evangelical and mainline protestant children, adolescents, and adults: A cultural–developmental study in the US", *Psychology of Religion and Spirituality*, Vol. 15, no. 1 (2023), 94.

[44]Mark Chaves, "SSSR presidential address rain dances in the dry season: Overcoming the religious congruence fallacy", *Journal for the Scientific Study of Religion*, Vol. 49, no. 1 (2010): 1-14.

limited to rote memorization. According to Chaves, the best way to achieve congruence is internalization, though it is a very difficult process that requires repeated or deep experiences. This is quite a challenge facing religious institutions and educators, especially in the Islamic world. How do they include such repeated or deep experiences in their educational systems to internalize afterlife beliefs?

Bibliography

Abdel-Khalek, Ahmed, "The Arabic Scale of Death Anxiety (ASDA): Its Development, Validation, and Results in Three Arab Countries", *Death Studies*, Vol. 28, no. 5 (2004): 435-457.

Abdel-Khalek, Ahmed, "Death obsession in Arabic and Western countries", *Psychological Reports*, Vol. 97, no. 1 (2005): 138-140.

Abdel-Khalek, Ahmed, David Lester, John Maltby, and Joaquin Tomás-Sábado, "The Arabic Scale of Death Anxiety: Some Results from East and West", *Journal of Death and Dying*, Vol. 59, no. 1 (2009): 39-50.

Abdel-Khalek, Ahmed, and Joaquín Tomás-Sábado, "Anxiety and Death Anxiety in Egyptian and Spanish Nursing Students", *Death Studies*, Vol. 29, no. 2 (2005): 157-169. doi: 10.1080/07481180590906174.

Al-Issa, Riyad, Steven Krauss, Ssmsilah, Roslan, and Haslinda Abdullah, "To Heaven or to Hell: Are Muslims' Afterlife Hope and Fear Balanced? A Cross-Cultural Study", *Review of Religious Research*, Vol. 62 (2020): 351-368.

Al-Issa, Riyad, Steven Krauss, Samsilah Roslan, and Haslinda Abdullah, "The Relationship between Afterlife Beliefs and Mental Wellbeing among Jordanian Muslim Youth", *Journal of Muslim Mental Health*, Vol. 15, no.1 (2021): 1–18.

Al-Issa, Riyad, Steven Krauss, Ssmsilah, Roslan, and Haslinda Abdullah, "To Heaven through Hell: Are There Cognitive Foundations for

Purgatory? Evidence from Islamic Cultures", *Religions*, Vol.12, no.11 (2021): 1026. doi:10.3390/rel12111026.

Al-Issa, Riyad, Steven Krauss, Ssmsilah, Roslan, and Haslinda Abdullah, "Can I Pay at Purgatory? The Negative Impact of the Purgatory Ethic in Islamic Societies: Theoretical and Empirical Evidence", *Religions*, Vol.13, no.2 (2022).

Al-Issa, Riyad, Steven Krauss, Ssmsilah, Roslan, and Haslinda Abdullah, "Afterlife beliefs and obligation to obey the law in high adherence contexts: exploring connections among Malaysian youth", *Journal of Beliefs & Values*, Vol.46, no.1 (2023): 1-14.

Bakk, Zsuzsa, and Jouni Kuha, "Relating latent class membership to external variables: An overview", *British Journal of Mathematical and Statistical Psychology*, Vol. 74, no. 2 (2021): 340-362.

Baumard, Nicolas, "Has punishment played a role in the evolution of cooperation? A critical review", *Mind & Society*, Vol. 9 (2010): 171–92.

Chaves, Mark, "SSSR presidential address rain dances in the dry season: Overcoming the religious congruence fallacy", *Journal for the Scientific Study of Religion*, Vol. 49, no. 1 (2010): 1-14.

Dastmalchian, Amir, "*Islam*", in Yujin Nagasawa et al. (ed) The Palgrave Handbook of the Afterlife. London: Palgrave Macmillan (2017): 153–73.

de Ridder, Denise, Gerty Lensvelt-Mulders, Catrin Finkenauer, Marijn Stok, and Roy Baumeister, "Taking Stock of Self-Control: A Meta-Analysis of How Trait Self-Control Relates to a Wide Range of Behaviors", *Personality and Social Psychology Review*, Vol. 16 (2012): 76-99.

Douglas, Beets, "Global Corruption and Religion: An Empirical Examination", *Journal of Global Ethics*, Vol. 3 (2007): 69-85.

Ellis, Lee, Eshah Wahab, and Malini Ratnasingan, "Religiosity and fear of death: A three nation comparison", *Mental Health, Religion & Culture*,

Vol. 16, no.2 (2013): 179–99.

Falk, Armin, Anke Becker, Thomas Dohmen, Benjamin Enke, David Huffman, and Uwe Sunde, "Global evidence on economic preferences", *The Quarterly Journal of Economics*, Vol. 133, no. 4 (2018): 1645–1692.

Fischer, Ian, and Ekin Secinti, "Examination of the relationships between religiosity and death attitudes in Turkey and the United States", *Death Studies,* Vol. 46, no. 1 (2020): 1-11.

Chittick, William, "*Muslim eschatology*", in Jerry Walls (ed) The Oxford Handbook of Eschatology. New York: Oxford University Press (2008): 132–50.

Ghorbani, Nima, P. J. Watson, and Shahmohamadi Khadijeh, "Afterlife Motivation Scale: Correlations with maladjustment and incremental validity in Iranian Muslims", The *International Journal for the Psychology of Religion*, Vol. 18, no.1 (2008): 22–35.

Guiso, Luigi, Paola Sapienza and Luigi Zingales, "People's Opium? Religion and Economic Attitudes", *Journal of Monetary Economics*, Vol. 50, no. 1 (2003): 225– 82.

Günther, Sebastian, "*Eschatology and the Qur'an*", in Mustafa Shah et al. (ed) The Oxford Handbook of Qur'anic Studies. New York: Oxford University Press (2020).

Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano J., M. Lagos, P. Norris, E. Ponarin and B. Puranen et al. (eds.), "World Values Survey: Round Seven – Country-Pooled Datafile". Madrid, Spain & Vienna, Austria: JD Systems Institute & WVSA Secretariat, 2020. doi:10.14281/18241.1

Holmes, Christopher, and Jungmeen Kim-Spoon, "Adolescents' religiousness and substance use are linked via afterlife beliefs and future orientation", *The Journal of Early Adolescence*, Vol. 37, no. 8

(2017): 1054-1077.

Jensen, Lene, "Afterlife beliefs among evangelical and mainline protestant children, adolescents, and adults: A cultural–developmental study in the US", *Psychology of Religion and Spirituality*, Vol. 15, no. 1 (2023), doi: 10.1037/rel0000424.

Johnson, Dominic, "God's punishment and public goods", *Human Nature*, Vol. 16, no. 4 (2005): 410–446.

Johnson, Dominic, "Why God is the best punisher", *Religion, Brain & Behavior*, Vol. 1, no. 1 (2011): 77-84.

Johnson, Dominic, *God is watching you: How the fear of God makes us human.* New York: Oxford University Press, USA, 2016.

Johnson, Dominic, "The wrath of the academics: criticisms, applications, and extensions of the supernatural punishment hypothesis", *Religion, Brain & Behavior*, Vol. 8, no. 3 (2018): 320-350.

Johnson, Kathryn, Adam Cohen, and Morris Okun, "God is watching you...but also watching over you: The influence of benevolent God representations on secular volunteerism among Christians", *Psychology of Religion and Spirituality*, Vol. 8 (2016): 363–374.

Johnson, Kathryn, Yexin Li, and Adam Cohen, "Fundamental social motives and the varieties of religious experience", *Religion, Brain & Behavior*, Vol. 5 (2015): 197–231.

Kuran, Timur, "Islam and economic performance: Historical and contemporary links", *Journal of Economic Literature*, Vol. 56, no. 4 (2018): 1292-1359.

La Porta, Rafael, Lopez-de-Silanes Florencio, Shleifer Andrei, and Vishny Robert, "The Quality of Government", *The Journal of Law, Economics, and Organization*, Vol. 15 (1999): 222-79.

Lange, Christian, Paradise and Hell in Islamic Traditions. Cambridge: Cambridge University Press, 2016.

McCaffree, Kevin, and Seth Abrutyn, "Big Gods, socio-cultural evolution and the non-obvious merits of a sociological interpretation", *Religion*, Vol. 50, no. 4 (2020): 570-589.

McCleary, Rachel, "Religion and economic development", *Policy Review*, no. 148 (2008): 45.

McCleary, Rachel, and Robert Barro, The Wealth of Religions: The Political Economy of Believing and Belonging, Princeton, NJ: Princeton University Press, 2019.

Mensah, Yaw, "An Analysis of the Effect of Culture and Religion on Perceived Corruption in a Global Context", *Journal of Business Ethics*, Vol. 121 (2014): 255-82.

Morris, G. J., McAdie, T., "Are personality, well-being and death anxiety related to religious affiliation?", *Mental Health, Religion and Culture*, Vol. 12, no. 2 (2009): 115-120.

Norenzayan, Ara, Azim Shariff, Will Gervais, Aiyana Willard, Rita McNamara, Edward Slingerland, and Joseph Henrich, "The cultural evolution of prosocial religions", *Behavioral and Brain Sciences*, Vol. 39 (2016): e1. doi: 10.1017/S0140525X14001356.

North, Charles, Wafa Orman, and Carl Gwin, "Religion, Corruption, and the Rule of Law", *Journal of Money, Credit and Banking*, Vol. 45, no. 5 (2013): 757-79.

Paldam, Martin, "Corruption and Religion Adding to the Economic Model", *Kyklos*, Vol. 54 (2001): 383-413.

Purzycki, B.G., Lang, M., Henrich, J. and Norenzayan, A., "The Evolution of Religion and Morality project: reflections and looking ahead", *Religion, Brain & Behavior*, Vol. 12, no. 1-2 (2022): 190-211.

Roes, F. L., Raymond, M., "Belief in moralizing gods", *Evolution and Human Behavior*, Vol. 24, no. 2 (2003): 126-135.

Saleam, James, and Ahmed Moustafa, "The Influence of Divine Rewards and Punishments on Religious Prosociality", *Front. Psychol.*, Vol. 7 (2016): 1149.

Schlenker, Barry, "Integrity and character: Implications of principled and expedient ethical ideologies", *Journal of Social and Clinical Psychology*, Vol. 27, no. 10 (2008): 1078-1125.

Shafer, Grant, "Al-Ghayb wa-l'Akhirah: Heaven, Hell, and Eternity in the Qur'an", in Harold Ellens (ed.). *Heaven, Hell, and the Afterlife: Eternity in Judaism, Christianity, and Islam.* Westport, CT: Praeger, 2012, Vol. 3: 9–42.

Shepperd, James, Gabrielle Pogge, Nikolette Lipsey, Wendi Miller, and Gregory Webster, "Belief in a Loving Versus Punitive God and Behavior", *Journal of Research on Adolescence*, Vol. 29, no. 2 (2019): 390-401.

Spurk, Daniel, Andreas Hirschi, Mo Wang, Domingo Valero, and Simone Kauffeld, "Latent profile analysis: A review and 'how to' guide of its application within vocational behavior research", *Journal of Vocational Behavior*, Vol. 120 (2020): 103445.

van Elk, Michiel, Bastiaan Rutjens, and Frenk van Harreveld, "Why Are Protestants More Prosocial Than Catholics? A Comparative Study among Orthodox Dutch Believers", *The International Journal for the Psychology of Religion*, Vol. 27 (2017): 65–81.

White, Cindel, John Kelly, Azim Shariff, and Ara Norenzayan, "Supernatural norm enforcement: Thinking about karma and god reduces selfishness among believers", *Journal of Experimental Social Psychology*, Vol. 84 (2019): 103797. doi: 10.1016/j.jesp.2019.03.008.

Willard, Aiyana, Baimel, Adam, Turpin, Hugh, Jong, Jonathan, and Whitehouse, Harvey, "Rewarding the good and punishing the bad: The role of karma and afterlife beliefs in shaping moral norms",

Evolution and Human Behavior, Vol. 41, no. 5 (2020): 385–396.

Yilmaz, Onurcan, and Hasan Bahçekapili, "Supernatural and secular monitors promote human cooperation only if they remind of punishment", *Evolution and Human Behavior*, Vol. 37 (2016): 79–84.