*Article*

# To Heaven through Hell: Are There Cognitive Foundations for Purgatory? Evidence from Islamic Cultures

Riyad Salim Al-Issa [1,*], Steven Eric Krauss [1] , Samsilah Roslan [2] and Haslinda Abdullah [3]

[1]    Institute for Social Science Studies, Universiti Putra Malaysia, Serdang 43400, Malaysia; lateef@upm.edu.my
[2]    Faculty of Educational Studies, Universiti Putra Malaysia, Serdang 43400, Malaysia; samsilah@upm.edu.my
[3]    Faculty of Human Ecology, Universiti Putra Malaysia, Serdang 43400, Malaysia; lynn@upm.edu.my
[*]    Correspondence: alissariyad@gmail.com

**Abstract:** The purgatory doctrine, which has played a vital role in Christian culture, states that most believers must experience afterlife punishment in order to be cleansed of their sins before entering Heaven. Traditional Islamic theology rejects the notion of purgatory (*Al-Motahher*) through the Balance doctrine (*Mizan*), which states that if the good deeds performed during a Muslim's life outweigh their bad deeds, the person will enter heaven without suffering or punishment. This study hypothesizes that folk intuitions and cognitive biases (tendency to proportionality) explain, in part, the emergence and spread of the purgatory doctrine in the Islamic world. Drawing on a cognitive science of religion lens, the current study examines this hypothesis in an Islamic cultural context. Quantitative surveys (three studies) conducted in Jordan ($n = 605$, and $n = 239$) and Malaysia ($n = 303$) indicate that the doctrine of purgatory is prevalent (36% in Jordan and 69% in Malaysia) despite its contradiction with the Balance doctrine as defined by Islamic theology. To our knowledge, this is the first study documenting the phenomenon of theological incorrectness in Muslim afterlife beliefs by using empirical research. Implementation of the findings and suggestions for future research are discussed.

**Keywords:** purgatory; Islam; temporary afterlife punishment; cognitive bias; theological incorrectness; proportionality; balance doctrine (*Mizan*)

## 1. Introduction

Investigating religious phenomena from a cognitive point of view provides a deep understanding of these phenomena. However, the study of Islamic religious phenomena from the perspective of cognitive science is just starting (Nakissa 2020a, 2020b). Cognitive science of religion (CSR) assumes that the human mind has cognitive biases, dispositions, and tendencies that play an important role in the presence, prevalence, and persistence of religious beliefs and behaviors within a culture and between cultures (White 2018). Taking into account the role of context-dependent factors, CSR assumes that the more religious ideas are compatible with cognitive tendencies, the more likely it is that those religious ideas will emerge and be transmitted (White 2017). CSR scholars have introduced several theories to explain how cognitive tendencies contribute to the emergence and transmission of religious beliefs such as supernatural beings (e.g., Barrett and Richert 2003), life after death (e.g., Hodge 2011), reincarnation (White 2016), paradise (Nähri 2008), supernatural punishment (Johnson 2009), immanent justice (Baumard and Chevallier 2012), theological concepts (De Cruz 2013; Nichols 2004; Pyysiäinen 2004), new religious movements (Upal 2005), incorrect theological ideas (Barrett 1999; Roubekas 2014), as well as purgatory (Baumard and Boyer 2013).

A review of the literature of CSR indicates that the purgatory doctrine, which has played an important role in Christian cultures (Eire 2010; Walter 1996), has not received enough attention from CSR researchers. Baumard and Boyer (2013) suggest that cognitive tendencies have facilitated the emergence and transmission of the purgatory doctrine in

Christian and Chinese cultures. We hypothesize that these same cognitive tendencies can also explain the existence and spread of the purgatory doctrine in contemporary Islamic cultures, despite the doctrine's incompatibility with orthodox Islamic theology. We suggest that the proportionality bias (Baumard and Boyer 2013), and immanent justice bias (Baumard and Chevallier 2012) explain the emergence and transmission of the purgatory doctrine in contemporary Islamic cultures.

Historian Minois (1994) noted that hell in most ancient religions is temporary and its function is purification. The purgatory doctrine in Catholic Christianity states that "*All who die in God's grace and friendship, but still imperfectly purified, are indeed assured of their eternal salvation; but after death they undergo purification, so as to achieve the holiness necessary to enter the joy of heaven*" (Compendium of the Catechism of the Catholic Church 2005). Buddhism (even outside of China) endorses the notion that bad karma causes one to be placed in hell (reborn in hell) and punished in a manner proportionate to one's bad deeds. After punishment one is freed. Thus, the standard Buddhist conception of hell resembles purgatory (Teiser 1994). Quite differently, the Islamic Balance doctrine states that on the Day of Resurrection, God will weigh the deeds of the believers, and those whose good deeds exceed their bad deeds will enter Heaven without punishment in Hell (Chittick 2008; Günther 2020; Hamza 2016). The fundamental difference between the two doctrines is that temporary punishment in the afterlife appears inevitable in the Christian creed (because most people are not perfectly purified), whereas in the Islamic Balance doctrine, temporary afterlife punishment is avoidable. The current study assumes that the purgatory doctrine (*Al-Motahher*) is prevalent in contemporary Islamic culture despite its contradictions with normative Islamic theology, and that the religious texts that seem compatible with the purgatory doctrine are also widespread. The results of the study support the hypothesis. A significant percentage of Muslim youth in Jordan and Malaysia believe that they will face punishment in Hell even if their good deeds exceed their bad deeds. Furthermore, they believe that this is the correct Islamic belief, justified through religious texts that they interpret to align with the purgatory doctrine.

Subsequent sections of the paper further clarify our hypothesis. The first section presents the Islamic Balance doctrine and highlights its incompatibility with purgatory belief. The second section presents the literature that expounds on how the concept of proportionality is innate and cognitively congruous with the concept of purgatory. The third section explains the phenomenon of theological incorrectness and how the doctrine of purgatory can emerge as a result of this phenomenon. The fourth section reports on a pilot study explaining the spread of the purgatory doctrine in contemporary Islamic cultures. The remaining sections of the paper report on the documentation of the purgatory doctrine in Islamic cultures through the construction of a valid and reliable measure. The paper concludes with recommendations for future research directions.

## 2. Background

### 2.1. The Balance Doctrine in Islamic Afterlife Teachings

One-quarter of the Quranic text—the first and most important source of Islamic teachings—is a description of reward and punishment in the afterlife (Dastmalchian 2017). No fewer than sixty-seven chapters (surahs) from the Quran address afterlife beliefs (Günther 2020). Salvation on the Day of Judgment is one of the themes of Surah Al-Fatihah (The Opening), the first chapter of the Quran, which must be recited by a Muslim at least 17 times a day in his or her prayers. In Islam, life is presented as a form of a moral test, and the afterlife represents the result of this test.

This idea is alluded to repeatedly in the Quran (Al-Issa et al. 2021; Shafer 2012). Among the many examples include: the Quran states that Allah created the heavens and the earth to test humanity (*liyabluwakum*) and find out those who do good deeds (Quran 11:7); He created human beings to test them (Quran 76:2); He made that which is on earth as an adornment for it, in order to test humans (Quran 18:7); He created death and life to

test human beings as to which of them is best in deeds (Quran 67:2); and He tests humans with both hardships and blessings (Quran 21:35).

The results of the test will appear on Judgment Day, where Allah will set up the balance of justice (Chittick 2008; Günther 2020), and then none will be dealt with unjustly (Quran 21:47). Whoever has done an atom's weight of good in their worldly life will see it, and whoso has done an atom's weight of evil shall see it (Quran 99:7, 8). Those whose good deeds weigh heavier than their bad deeds will have everlasting happiness (Quran 7:8, 101:6), but those whose bad deeds weigh heavier than their good deeds will be in Hell (Quran 23: 103, 7:9, 101:8). Additionally, for all there are degrees of reward and punishment for what they have done (Quran 46:19). Based on these Quranic verses as well as prophetic traditions (i.e., sayings of Muhammad), all Islamic theological schools unanimously agree that when a believer's good deeds outweigh their bad deeds, they will escape punishment in Hell (Al-Izz 2000, pp. 277–80; Al-Qudai 2006, p. 308; Al-Qurtubi 2004, p. 726; Al-Taftazani 1989, pp. 148–56; Chittick 2008, pp. 133–34; Ibn Ḥazm 1903, p. 44; 1981, p. 156; 2005, pp. 133–34; Ibn Kathir 1997, p. 516; Ibn Qayyim 1974, p. 380; Ibn Rajab 2001, p. 440; Lange 2013). The famous scholar Ibn Hazm [994–1064 AD] summarizes the orthodox theological view as follows:

> Those who commit grave sins, in as much as God permits it, and then die persisting in them [i.e., without having repented], but whose good actions and evil actions are equibalanced (*istawat*), no additional evil action having been committed by them, are forgiven and will not be held responsible for anything they have done. God Exalted has said: "The good deeds will drive away the evil deeds." (Q 11:114). (Ibn Ḥazm 2005, pp. 133–34, translated to English by Lange 2013)

The Quran emphasizes the generosity and mercy of God in several verses: Doing good deeds removes evil deeds (Quran 11:114, 13:22); for a single good deed, one will be rewarded tenfold (Quran 6:160); Allah multiplies the good deed (Quran 4:40); Allah will remove from the believer the worst of what they did (Quran 39:35, 29:7); Allah will reward a believer according to the best of what they used to do (Quran 39:35, 16:97, 24:38, and 29:7). If a believer avoids the major sins (such as murder and adultery), Allah will remove from them their minor sins (Quran 4:31, 53:32). Whoever does a bad deed then asks for forgiveness from Allah, he shall find Allah Forgiving, Merciful (Quran 4:110). Whoever repents after his wrongdoing and reforms, Allah will turn to him in forgiveness (Quran 5:39). Those who repent and believe and do righteous deeds, Allah will change their sins into good deeds (Quran 25:70).

The importance that orthodox Islamic theology attaches to the Balance doctrine is clearly established in one of the most widely accepted texts of creedal faith among Sunni Muslims, Imam Abu Ja'far al-Tahawi's text. Ibn Abi al-Izz elaborates on Tahawi's text, saying:

> The penalty of the Fire is waived for various reasons. I will list here more than ten reasons which are deduced from the Qur'an and Sunnah ... The third means of pardon is provided by good deeds, for one good act will fetch ten equal rewards and one evil act will incur only one equal penalty. Woe, therefore, to those whose one-to-one penalties outdo their ten-fold rewards. Allah has said, "The good deeds remove those that are evil" [11:14], and the Prophet (peace be on him) said, "Do good after evil so that it may wipe out the latter. (Al-Izz 2000, pp. 277–78)

Although the Balance doctrine represents the normative orthodox belief regarding humans' fate in the afterlife, the present study assumes that Muslims are likely to believe in purgatory as a personal destiny. That is, he or she will enter Purgatory before entering Paradise. While scant empirical evidence of purgatory beliefs among Muslims exists, observational data taken by the authors from their work over several years with young Muslims led to this hypothesis. The current study set out to test this hypothesis, and

drawing on a cognitive science of religion theoretical frame, provides an initial explanation as to why these beliefs might exist.

### 2.2. Purgatory and Proportionality

Baumard and Boyer (2013) suggest that the doctrine of Purgatory arose as a result of cognitive tendency, specifically the tendency to proportionality. According to the authors, in moralizing religions, good deeds are rewarded and bad deeds are punished, either in this world or in the afterlife, and in both cases, rewards and punishments are proportional to good and misdeeds, which is why some religions imagined Purgatory for souls who did not deserve outright salvation. Proportionality evolved evolutionarily during the human endeavor to establish successful relationships with others to ensure humanity's survival.

Baumard and Boyer (2013) reviewed many observations that fit their hypothesis. First, economic games and surveys show that there is a human tendency for proportionality between contributions and distributions (Cappelen et al. 2010; Jakiela 2015; Konow 2000; Marshall et al. 1999; Gurven 2004; Alvard 2004). Second, empirical experiments also show that in mutual aid, there is proportionality between costs and benefits (Baron and Miller 2000; Clark and Jordan 2002; Alvard 2004). Third, studies indicate that the goal of punishment is not to deter the criminal, but rather to achieve justice (Baron 1993; Carlsmith et al. 2002; Johnson 2009; Chavez and Bicchieri 2013; Baumard 2010; Hoebel 1964) through the proportionality between harm and punishment (Robinson et al. 2007; Baumard and Lienard 2011). The proportionality tendency is also the reason why people associate misfortune with misdeeds (Baumard and Chevallier 2012). Finally, developmental studies show that infants as young as 15 months can detect inequity (Sloane et al. 2012; Schmidt and Sommerville 2011), and 3-year-olds predict distributions in proportion to merit (Baumard et al. 2011; Kanngiesser et al. 2010).

The previous two sections clarify the contradiction between the doctrine of Purgatory and the doctrine of balance. While the doctrine of Purgatory supported by a cognitive bias, asserts that every sin must be punished for a person in order to be purified before entering Heaven, the doctrine of Balance states that a person can enter Heaven without being purified of his sins because his good deeds outweigh his bad deeds. Therefore, is it possible for the doctrine of Purgatory to spread among Muslims despite its contradiction with the doctrine of balance, even though the doctrine of balance is reflective of normative theology?

### 2.3. Purgatory as Theological Incorrectness

The main hypothesis of this study draws support from the theological incorrectness phenomenon, which is well known in the cognitive science of religion (CSR) (Barrett 1999; Roubekas 2014). The discovery of this phenomenon came after the application of Sperber's approach to religious ideas. Sperber termed his approach for studying culture the epidemiology of representations (Sperber 1996). Through it, scholars can explain why some ideas or practices become widespread by considering how human minds might be more likely to generate and transmit some ideas over others. Our naturally developing mental tools readily generate certain kinds of ideas we call intuitive, regardless of cultural context (Barrett 2007). According to theological incorrectness, people (at the individual level) may have different and even contradictory notions of the same religious concept. Choosing a concept to use in a specific context depends on the need for cognitive processing of the task. Tasks that need quick and rich inferences use basic concepts which contain intuitive knowledge (Barrett 2007, 2011).

A series of experiments (Barrett 1998; Barrett and Keil 1996) was conducted with believers (Bahaism, Buddhism, Christianity: Catholic and Protestant, Hinduism, and Judaism) and non-believers in the U.S and India. Researchers asked and the subjects affirmed the following attributes about God: God can do anything, knows everything, can perform multiple mental activities at the same time, sees everything, hears everything and has non-natural spatial properties. The subjects reported a non-anthropomorphic

theological understanding of God's characteristics. During a follow-up task in which the same subjects had to use their concept of God to process information, however, their concept of God appeared to be far from the correct theological conceptualization and became considerably more anthropomorphic (Barrett 1998; Barrett and Keil 1996). This intuitive inclination may explain the retreat of the Calvinist doctrine of absolute divine sovereignty (i.e., predestination) in the U.S. and the spread of Arminianist doctrine, which combines belief in divine sovereignty and free will because people think intuitively that they have an "internal locus of control" (Slone 2004). This tendency may also explain the belief in luck by many Buddhists rather than in complex calculations of the karma doctrine as put forth by Buddhist theology (Slone 2004).

The tendency of people to use simpler versions of theological concepts when assimilating and remembering in "real time" tasks has been demonstrated across cultures (Barrett 2017). According to cognitive science of religion, the simpler the concept (i.e., less cognitive processing) the more intuitive it is. For example, anthropomorphism needs less cognitive processing because all the creatures that human beings deal with are characterized by physicality. If there is an intuitive connection between the concept of purgatory and the concept of proportionality, it is expected that some Muslims will intuitively adopt a belief in purgatory as personal destiny.

Religious polling data suggests that theological incorrectness is widespread in the Muslim world. For instance, belief in the power of dead ancestors is prevalent among Muslims in Sub-Saharan Africa (e.g., Mali 59% and Senegal 58%), and arguably derives from biologically rooted intuitions (Lugo 2010). Such beliefs clash with orthodox Islamic doctrines. Similarly, 77% of Muslims in India believe in karma, and 27% believe in reincarnation. These beliefs do not have a traditional, doctrinal basis in Islam (Pew Research Center 2021).

*2.4. Pilot Studies*

We started with a simple pilot study without a specific protocol, where the first author conducted dialogues with students at schools and universities about afterlife beliefs (fifty interviews). Due to a lack of previous studies in the area, the work was of an exploratory nature. However, during pilot interviews with Muslim youth, we found that purgatory as a personal destiny was a popular belief, and that many Muslims consider it an "official" position within the religion. In contradiction to mainstream orthodox Islamic belief, several interviewees reported that even if their good deeds outweighed their evil deeds, they will still be punished for their sins (any and all) in Hell.

We then conducted a formal preliminary study among school students, ages 15 to 18 (*N* = 156) in Jordan. We asked the students the following question: On Judgment Day, if a Muslim's good deeds outweighed their evil deeds, will Allah punish them in Hell before bringing them into Heaven? The response was that 29% of the students agreed with the notion, 37% rejected it and 32% remained neutral. This result provided the researchers with preliminary evidence of a phenomenon that we called "Compulsory Temporary Afterlife Punishment" (CTAP). This preliminary study showed that nearly one-third of young Jordanian Muslims believe in CTAP and justify this belief through interpretations of religious texts that contradict the normative, orthodox theological interpretation of those texts. Only one-third of the sample supported the normative belief, which is one of the foundations of the Islamic creed pertaining to the afterlife. We felt that this preliminary evidence was sufficient to warrant further investigation.

The two verses that some of the participants used to demonstrate the necessity of suffering in Hell for every Muslim are: "There is not one of you but will pass over it (Hell)" (Quran 19:71), and "whosoever has done an atom's weight of evil will see it" (Quran 99:8). The interpretation of these two verses to maintain the necessity of punishment in Hell for every sin committed by a Muslim is not supported by any of the Islamic exegeses (Ibn ʿAshūr 1984, 19:71). This understanding contradicts the story of the People of the Heights from the Qur'an (Al-Aʿraf) (Lewis 1994), well-known to most Muslims. The story

takes place on Judgment Day, when those whose good deeds and bad deeds would be equal in the Balance are placed on a high ground overlooking Heaven and Hell. The story narrates the people praying that God drives them away from the torment of Hellfire and accepts their prayers, subsequently allowing them to enter Heaven without torment (Al-Hilali and Khan 1997, vol. 7, pp. 44–49).

We suggest that the misconception reported in our preliminary study is pervasive because of its compatibility with the intuitive belief that misfortune compensates for the misdeed. The intuition of proportionality and immanent justice makes belief in supernatural punishment for any sin more acceptable (Baumard and Boyer 2013; Baumard and Chevallier 2012). When people hear that punishment will result from misbehavior, they are more likely to find this idea convincing because it matches their intuition that punishment compensates for sin. Due to this congruence with intuition, the doctrine of purgatory becomes a motivationally attractive representation that will enjoy greater cultural fitness (Nichols 2004).

*2.5. Study Hypotheses*

In order to capture the extent of the phenomenon of CTAP belief more accurately, we developed the CTAP belief scale in order to determine the prevalence of CTAP beliefs among Muslims. The study had three hypotheses: First, that CTAP belief is prevalent among young Muslims; second, that there is no relationship between belief in CTAP and religiosity, due to our assumption that the former is a result of intuitive thought (study 1 and 2); and third, that greater familiarity with the doctrine of Balance has no effect on belief in CTAP (study 3).

## 3. Results

*3.1. Study 1: CTAP Belief among Jordanian Muslim Youth*

3.1.1. Exploratory Factor Analysis (EFA)

EFA was conducted using principal component analysis (PCA) method. Items correlated at least 0.26 with other items, suggesting reasonable factorability. The diagonals of the anti-image correlation matrix were all over 0.5, supporting the inclusion of each item in the factor analysis. The communalities were all above 0.3. Visual inspection of the scree plot indicated one to two factors. One component had an eigenvalue over the criterion of one (eigenvalue = 2.61) and explained 52.2% of the variance. Each of the 5-items loaded high on a single component, ranging from 0.63 to 0.76 (Table 1). Further, the Kaiser–Mayer–Olkin test verified the sampling adequacy for the analysis (KMO = 0.72); and Bartlett's Test of sphericity indicated that the correlations between items were sufficiently large for PCA ($\chi^2$ (10) = 421.07; $p < 0.001$) (Table 1).

**Table 1.** Factor loadings and communalities from principal component analysis for Compulsory Temporary Afterlife Punishment Belief Scale (CTAPB) (*n* = 302).

| Item | Factor Loading | Communalities |
|---|---|---|
| On the Day of Judgment (Resurrection), if a Muslim's good deeds out-weigh his/her bad deeds, Allah will torment them in Hell and then will admit them to Paradise | 0.74 | 0.54 |
| On the Day of Judgment (Resurrection), if a Muslim's good deeds out-weigh his/her bad deeds, Allah will forgive their sins and admit them to Paradise without being tormented in Hell (Rev.) | 0.71 | 0.51 |

**Table 1.** *Cont.*

| Item | Factor Loading | Communalities |
|---|---|---|
| There is a promise from Allah that a Muslim whose good deeds outweigh their sins will enter Paradise without being tortured in Hell for their sins (Rev.) | 0.63 | 0.39 |
| I understand from the words of Allah "and whosoever has done an atom's weight of evil will see it" that a Muslim will get punished for their sins in Hell even if their good deeds outweigh their sins | 0.76 | 0.57 |
| I understand from the words of Allah "There is not one of you but will pass over it (Hell)" that before a Muslim is admitted to Paradise, he/she will be punished for their sins in Hell even if their good deeds outweigh their sins | 0.76 | 0.58 |

The factor explained 52.20% of the total variation of the items in the factor eigenvalues = 2.61; KMO = 0.72; Bartlett's test = 421.07; $p < 0.001$.

### 3.1.2. Confirmatory Factor Analysis (CFA)

CFA was conducted on sample 2 ($n = 303$). Factorial validity was tested using maximum likelihood estimation. The mode showed poor fit to the data. However, reverse items (items 2 and 3) can be problematic by reducing the validity of a scale; scales with reverse items that are expected to be one-dimensional are often represented poorly by a one-factor model (Woods 2006). Correlated errors among reverse items have been preferred by researchers (Woods 2006). After correlated errors among items 2 and 3 were considered, the model showed excellent fit to the data, $\chi^2 = 2.35$ (*df* = 4, *p* = 0.670); CMIN/DF = 0.58, GFI = 0.99; AGFI = 0.98, CFI = 1.00, TLI = 1.01, NFI = 0.99; RMSEA = 0.00 (90% CI: 0.00–0.06), and PCLOSE = 0.87. The standardized regression coefficients were significant and ranged from 0.32 to 0.84 (Figure 1).
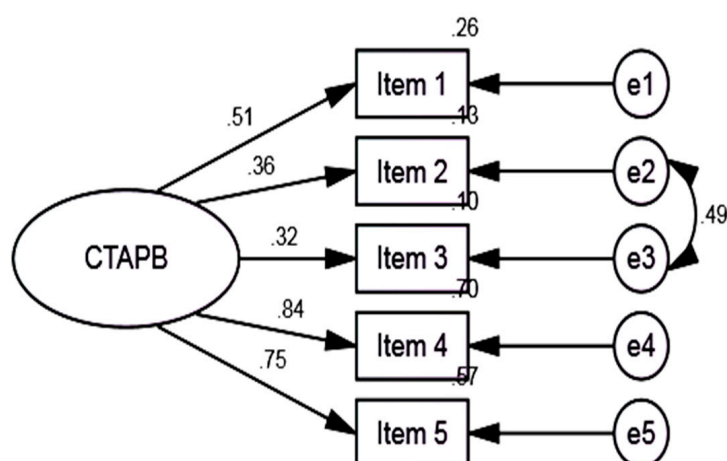


**Figure 1.** CFA model of latent factor of Compulsory Temporary Afterlife Punishment Belief (CTAPB)—Study 1.

### 3.1.3. Size of Phenomenon

The Cronbach's alpha for CTAP was 0.74, indicating good reliability for a small scale. Visual inspection and values of skewness (−0.050) and kurtosis (0.31) indicated CTAP was normally distributed (*M* = 2.82) and (*SD* = 0.72). The results indicated significant difference in CTAP between males and females, *t*(603) = −2.05, *p* = 0.04. The average CTAP score for males (*M* = 2.76, *SD* = 0.74) differed significantly from that of females (*M* = 2.89, *SD* = 0.70). There was no significant correlation between CTAP and IR, *r* = 0.011, *n* = 605,

$p = 0.781$, ORA, $r = -0.059$, $n = 605$, $p = 0.145$, and NORA, $r = 0.037$, $n = 605$, $p = 0.359$. The results confirmed the pilot study finding that levels of CTAP belief are high: 36% of the respondents believed that they will be punished in Hell even if their good deeds outweigh their sins (overall score above 3), while 44% rejected this belief (overall score below 3), and 20% of respondents expressed uncertainty (overall score equal to 3).

### 3.2. Study 2: CTAP Belief among Malaysian Muslim Youth

3.2.1. Confirmatory Factor Analysis

Missing data at the item score level were low, ranging from 0.3 to 1.2 percent, and were handled by multiple imputations method. Factorial validity was tested using maximum likelihood estimation. First, we examined the Jordanian model. Following Hermida's (Hermida 2015) recommendation, we tested the Jordanian model with the Malaysian sample to be sure that correlating error terms were not artificial. The model showed excellent fit to the data (Table 2). The results were almost identical to the Jordanian result (same sample size). However, the standardized regression coefficient for item 2 was not significant. We then removed the reverse-worded items (items 2 and 3) and replaced them with positively worded items accordingly: item 2—"I believe that Muslims will be punished for their sins in Hell even if their good deeds are more than their bad deeds", and Item 3—"If the good deeds of Muslims are more than their bad deeds, they will enter Hell to be purified before entering paradise." Disagreement with the reverse worded items may reveal limits to God's mercy; however, the idea that God's mercy is all-encompassing is a confirmed teaching in Islamic orthodoxy and normative culture. Support for this idea was provided by the low factor loadings for the two items in both the Jordanian and Malaysian samples.

The model showed acceptable fit to the data (Table 2). Standardized regression coefficients were significant and ranged from 0.44 to 0.96. We removed one item because the regression coefficient was small. Regression coefficients were significant and ranged from 0.63 to 0.92. Finally, we allowed correlating error terms (e3↔e4: 0.28), as modification indices suggested. The connection between these two items is theoretically justified because the two items reflected the evidence provided by the participants in the pilot studies justifying their belief in CTAP doctrine. The two items present the same question, but in reference to two different Quranic verses. Following these modifications, the model showed optimal fit to the data (Table 2). Regression coefficients were significant and ranged from 0.57 to 0.98 (Figure 2).

**Table 2.** Goodness-of-fit indices for Compulsory Temporary Afterlife Punishment Belief (CTAPB) in Study 2 ($N = 303$).

| Model | $\chi^2$ | df | $p$ | CMIN/DF | GFI | AGFI | CFI | TLI | NFI | RMSEA | PCLOSE |
|-------|----------|-----|-------|---------|------|------|------|------|------|-----------------------|--------|
| 1 | 2.30 | 4 | 0.679 | 0.577 | 0.99 | 0.98 | 1.0 | 1.00 | 99 | 0.00 [0.00–0.06] * | 0.88 |
| 2 | 24.38 | 5 | 0.000 | 4.87 | 0.96 | 0.90 | 0.96 | 0.92 | 0.95 | 0.11 [0.07–0.16] | 0.009 |
| 3 | 18.36 | 2 | 0.000 | 9.18 | 0.97 | 0.85 | 0.96 | 0.89 | 0.96 | 0.16 [0.10–0.55] | 0.002 |
| 4 | 1.4 | 1 | 0.237 | 1.4 | 0.99 | 0.97 | 0.99 | 0.99 | 0.99 | 0.036 [0.00–0.16] | 0.39 |

Note. $\chi^2$ = Chi Square, CMIN/DF = minimum discrepancy per degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, CFI = comparative fit index, TLI = Tucker Lewis Index, NFI = normal fit index and RMSEA = root-mean-square error of approximation, PCLOSE = P value of close fit. * 90% CI.
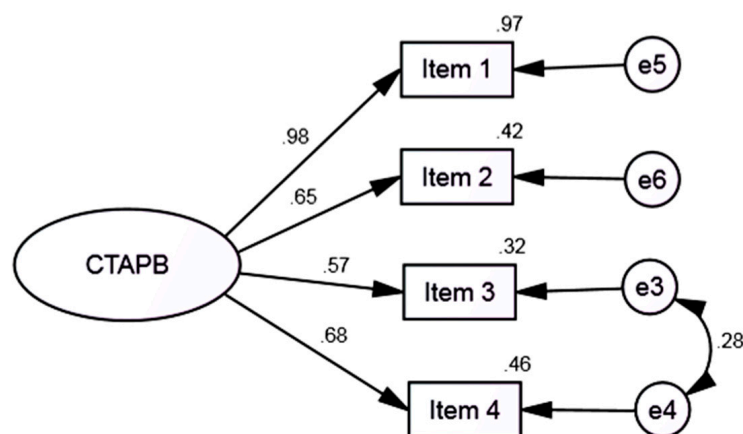
**Figure 2.** CFA model of latent factor of Compulsory Temporary Afterlife Punishment Belief (CTAPB)—Study 2.

3.2.2. Size of Phenomenon

The Cronbach Alpha for CTAP was 0.82, indicating good reliability for a small scale. Visual inspection and values of skewness ($-0.27$) and kurtosis (0.40) indicated CTAP was normally distributed ($M = 3.55$) and ($SD = 0.84$). The results indicated that there was no significant difference in CTAP between males and females, t (301) = 0.09, $p = 0.92$. There was no significant correlation between CTAP and IR, $r = 0.051$, $p = 0.373$, and a small negative association with ORA, $r = -0.119$, $p = 0.039$, and NORA, $r = -0.139$, $p = 0.015$. These results confirm Study 1′s findings that levels of CTAP belief are high, as 69% of the respondents believed that they will be punished in Hell even if their good deeds outweigh their sins (overall score above 3), while 13% rejected this belief (overall score below 3), and 18% of respondents expressed uncertainty (overall score equal 3).

*3.3. Study 3: The Familiarity of the Balance Doctrine among Jordanian Muslim Youth*

Studies 1 and 2 showed that belief in CTAP is common within two diverse samples of Muslim youth. However, CSR studies of theological incorrectness tend to focus on situations where adherents of religion hold intuitive religious ideas that clearly contradict prominent doctrines found in their religion. The aim of study 3 was to test whether the Balance doctrine in its technical form is a particularly prominent doctrine.

CTAP belief states that those whose good deeds exceed their bad deeds will enter Hell, while the story of the People of the Heights (Al-A'raf) states that those whose good deeds are equal to their bad deeds will not enter Hell. There is a clear contradiction between the two beliefs. In our preliminary studies, we found many subjects who refused to believe that CTAP belief is inconsistent with normative Islamic theology. When we asked them about the story of the People of the Heights (Al-A'raf), they were surprised that their views contradicted normative Islamic teachings. In study 3, we tested the extent of students' familiarity with the Balance doctrine, and the relationship of familiarity with the doctrine and CTAP belief. The study was guided by the question, does increasing familiarity with the Balance doctrine decrease belief in CTAP?

Descriptive results showed that nearly twenty percent (19.7%) of the participants believed that they will be punished in Hell even if their good deeds outweigh their sins (overall score in CTAP scale is above 3), while 71.1% rejected this belief (overall score below 3), and 9.2% of participants expressed uncertainty (overall score equal to 3). The percentage of believers in CTAP in this sample was less than the first study (34%). Perhaps the reason for this is due to the fact that the reliability of the current scale (alpha = 0.84) is higher than the reliability of the previous scale (alpha = 0.74), and the sample of the first study is more representative of the population because it was collected in a random method.

The results showed that most of the participants know about the story of the People of the Heights (88.3%), 82% know who the People of the Heights are, and 84.1% of the

participants reported that the People of the Heights are those whose good deeds were equal to their bad deeds. Participants reported several sources of information about the People of the Heights story: 54% school, 33.5% home, 43.5% religious lessons, 8.8% media, 12.1% social media, and 24.7% other sources. These findings indicate that the Balance doctrine (in its technical form) is a particularly prominent doctrine and it is given much attention in Islamic discourse.

Furthermore, most of the participants who believe in CTAP reported that they know who the People of the Heights are, and that the People of the Heights are those whose good deeds were equal to their bad deeds (80.9%). Pearson chi-square test results indicate that there was no association between the familiarity of the Balance doctrine and whether or not participants believe in CTAP ($\chi^2$ (1) = 0.047, $p$ = 0.828) (Table 3). It is interesting that within the group that believes in CTAP and has a familiarity with the Balance doctrine, 60.5% of participants believe that the People of the Heights will not enter Hell. These findings indicate that this group of participants adopts two contradictory ideas: those whose good deeds are greater than their bad deeds will enter Hell before they can enter Paradise, and those whose good deeds were equal to their bad deeds will not enter Hell.

**Table 3.** CTAP crosstabulation familiarity of the Balance doctrine CTAP crosstabulation.

| | Familiarity of the Balance Doctrine | | |
| --- | --- | --- | --- |
| | No | Yes | Total |
| Do not believe in CTAP | 35 | 135 | 170 |
| Believe in CTAP | 9 | 38 | 47 |
| Total | 44 | 173 | 217 |

## 4. Discussion and Directions for Future Research

The results support the study hypotheses. The belief in CTAP is prevalent among two different samples of Muslim youth. No relationship between CTAP belief and religiosity was found in the latter's three forms (IR, ORA and NORA) in the Jordanian sample, and the Malaysian sample reported no relationship with IR, and small negative relationships with ORA and NORA. There was no association between the familiarity of the Balance doctrine and whether participants believe in CTAP. The CTAP scale showed good construct validity in both samples, and good reliability despite comprising only five items. Analysis of the Jordanian data revealed gender differences, and it was found that the level of CTAP belief was higher among females. This is somewhat consistent with previous studies that found that females scored higher on Islamic negative afterlife beliefs (Ghayas and Batool 2017). No gender differences were found among the Malaysian sample.

CTAP belief is more prevalent in Malaysia than in Jordan. The percentage of believers in CTAP from the Malaysian sample was twice that of the Jordanian sample. While one-third of the Jordanian sample expressed belief in CTAP, two-thirds of the Malaysian sample expressed belief in it. This result could be because the Qur'anic texts that oppose CTAP belief are more influential in the everyday lives of Arabic speakers (Jordanian sample). It could also relate to the orientation of beliefs within the respective countries' Islamic education systems, and how young Muslims are socialized, i.e., how the beliefs are taught both formally and informally. Additional research is needed to better understand this finding. Although the sample of the first study was diverse in terms of students' specializations, its gender composition was nearly equal. The sample of the second and the third studies, however, had a female majority. The scientific disciplines also dominated the third study sample. This demographic diversity across the three study samples limits generalizability of the results. Future studies should examine the phenomenon across more diverse samples.

The study discovered a common belief (CTAP) among Muslims that contradicts the normative, orthodox theological teachings of both countries, and relates to the foundations of the Islamic religion itself. Data from other Islamic countries and societies should be

collected to confirm the existence of the CTAP phenomenon and to generalize the results of the current study. To our knowledge, this is the first study documenting the phenomenon of theological incorrectness in an Islamic context by using empirical research, and the theological incorrectness tool as newly established in the cognitive science of religion. Our study raises the question as to whether a lack of understanding of this intuitive mechanism by religious, educational and media institutions has contributed to the spread of this misconception, which these institutions have failed to recognize.

What makes this question more important is that Muslims are more likely than Catholics, Hindus, Buddhists, and Protestants to profess belief in afterlife reward and punishment (Barro and McCleary 2003). In Islamic countries, belief in afterlife reward and punishment is reinforced through a communally shared understanding of life after death (McCleary 2007). The results of this study can help inform religious educators, psychotherapists and religious institutions that work with Muslims to deal with anxiety related to afterlife beliefs in a way that enhances their mental health and well-being.

Previous studies have found high levels of death anxiety among Muslims as compared to non-Muslims (Abdel-Khalek 2005; Abdel-Khalek et al. 2009; Abdel-Khalek and Tomas-Sabado 2005; Ellis et al. 2013; Morris and McAdie 2009). These studies included samples from America, Spain, Malaysia, Turkey, Egypt and Britain. Does belief in CTAP increase levels of death anxiety? This seems very likely. For those who adopt a belief in CTAP, punishment is the first stage of the afterlife, which would naturally raise levels of death anxiety. Abdel-Khalek found that the fear of punishment in Hell is one of the most important reasons for Muslims' fear of death (Abdel-Khalek 2002), but his study did not consider CTAP belief. CTAP belief may also be a contributing factor to negative psychological symptoms (i.e., depression and anxiety) that have been associated with Islamic afterlife beliefs (Ghorbani et al. 2002, 2008).

The results of the study point to directions for future research. An important question for further exploration is whether cognitive bias helps explain the emergence and spread of the purgatory belief in Christian culture. The fact that there is no developed scriptural doctrine of purgatory in Christianity (Griffiths 2008) increases the importance of this question. It is also worth noting that it is a well-established belief in Muslim cultures that the martyr enters Heaven immediately after death (Quran 3:169). Is it possible that martyrdom is seen as a way for some who believes in CTAP to escape from the inevitable torment of temporary Hell? In short, is there any connection between CTAP belief and terrorism? This question could have significant implications for current research agendas as well as public discourse on extremism within Muslim communities.

Finally, future studies should examine the relationship between CTAP belief and pro-sociality. Studies have suggested that a slight change in the concept of reward and punishment in the afterlife may have significant effects on social behavior (Anderson 2009; Graziano and Schroeder 2015). This raises an important question—as the Purgatory doctrine is supposed to promote moral behavior, does it also apply to the Balance doctrine? Which of the two doctrines best promotes ethical behavior? Why do Protestants, who do not believe in Purgatory, show better prosocial behavior than Catholics (Arrunada 2010; van Elk et al. 2017), who believe in Purgatory?

The present study emphasizes the importance of the cognitive science of religion (CSR) in the understanding of religious phenomena. In particular, CSR tools such as theological incorrectness may be useful for studies in the fields of psychology of religion and spirituality, religious education and theology. Along these lines, we conclude with a quote by one of the founders of CSR, Jason Slone (2004, p. 6): While theological incorrectness is natural, common, and cross-cultural, it is certainly not inevitable. Formal education can minimize the less desirable effects of such religious behavior in the world, and that is worth the effort.

## 5. Materials and Methods

### *5.1. Study 1: CTAP Belief among Jordanian Muslim Youth*

#### 5.1.1. Participants and Procedures

Participants were recruited from five government and private Jordanian universities ($N = 605$). As the population density in Jordan concentrates in the central part of the country (near the capital Amman), we randomly selected one university from the south and one university from the north, and two universities from the central region. From each university, three colleges were chosen randomly, resulting in a total sample of 450 participants. We then contacted a colleague from a fifth university (located in the central region) who facilitated access to an additional 170 participants. The sample was diverse in terms of academic program: 18% Arts, 8% Applied Medical Sciences, 11% Engineering, 9% Veterinary, 9% Agriculture, 11% Sharia, 6% Sciences, 7% Economics, 10% IT and 10% Pharmacy. Participants were aged between 17 and 26 years ($M = 21.57$, $SD = 1.77$), and 48% were female. Questionnaires were administered in a classroom setting, and the participants were provided with a brief oral and written explanation of the study aims and rationale. Informed consent was obtained from all participants. CTAP items were measured with a five-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree), where higher scores represented a greater degree of belief.

#### 5.1.2. Measures

Self-report of religiosity was measured using the Duke University Religion Index [DUREL] (Koenig and Bussing 2010). This is a five-item scale, with three subscales: organizational religious activities (ORA) were assessed as, 'How often do you attend Mosque or religious meetings?' scored 1 (Never) to 6 (more than once a week). Non-organizational religious activities (NORA) were assessed as, 'How often do you spend time with private religious activities such as prayer or Quran reading?' (1 = rarely or never, 6 = more than once a day). Three questions on intrinsic religiosity (IR) were assessed as: 'In my life I experience the presence of God'; 'My religious beliefs are what is behind my whole approach to life'; and 'I try hard to carry my religion over into all other dealings in life'. These statements were scored 1 = 'Strongly Disagree', to 5 = 'Strongly Agree'. The score for IR was computed as the mean of the items answered; a high score indicated a higher level of religiosity. The IR subscale has shown evidence of good reliability for a small subscale (Cronbach's alpha = 0.79).

#### 5.1.3. Analytic Approach

The data were managed and analyzed using SPSS 21.0 and AMOS 17.0. The data were first explored descriptively. Missing data levels were low, ranging from 1.2 to 2.6 percent, and were handled by multiple imputations method. To evaluate factor structure, data from the total sample were randomly split into two subsamples. The first subsample, composed of 302 participants (subsample 1), was used to conduct exploratory factor analysis (EFA). The second subsample, obtained from the remaining 303 participants (subsample 2), was used to perform confirmatory factor analysis (CFA) using structural equation modeling (SEM).

### *5.2. Study 2: CTAP Belief among Malaysian Muslim Youth*

#### 5.2.1. Participants and Procedures

Participants were recruited from different faculties at a major public university ($N = 303$). The sample was diverse in terms of academic program: 25% Human Ecology, 26% Medical Sciences, 18% Education, 4% Modern Languages, 5% Sciences and 22% Economics. Participants were aged between 16 and 28 years ($M = 21.86$, $SD = 1.53$), and 80% were female, consistent with demographic trends in Malaysian public universities (Wan 2018). Data were collected following the same procedures as the first study.

5.2.2. Measures

Self-report of religiosity was measured using the Duke University Religion Index [DUREL] (Koenig and Bussing 2010). The IR subscale has shown evidence of good reliability for a small subscale (alpha = 0.77). All English versions of the instruments were translated to Malay using back-translation technique. First, a bilingual professional translator translated the instruments from English to Malay. Then, another bilingual professional translated the translated version back into English. The two translators worked separately. Second, another bilingual professional examined the original English version and the back translated scale to evaluate the cultural and the linguistic equivalence of each item. The results were reviewed by the researchers and refined accordingly.

*5.3. Study 3: The Familiarity of the Balance Doctrine among Jordanian Muslim Youth*

5.3.1. Participants and Procedures

Data were collected from 25 August to 8 September 2020. Participants were recruited from 18 government and private Jordanian universities (*N* = 239). Data were collected via an online questionnaire, due to the COVID-19 lockdown and the suspension of students' attendance at universities. The sample was diverse in terms of academic major: 9% Arts, 13% Applied Medical Sciences, 23% Engineering, 15% Social Science, 3% Agriculture, 13% Sciences, 3% Economics, 2% IT, 11% Pharmacy, and 8% other. Participants were aged between 18 and 28 years (*M* = 23.61, *SD* = 2.71), and 69.5% were female. Participants were provided with a brief written explanation of the study's aims and rationale. Participation was voluntary, and informed consent was obtained from all participants.

5.3.2. Measures

*CTAP* was measured using the scale that was revised in the second study because it showed higher reliability than the first scale. The scale showed strong evidence of reliability for a small scale (alpha = 0.84).

*The familiarity of the Balance Doctrine* was measured by the "People of the Heights" Survey. The survey contains five questions:

1. Have you ever heard about the story of the People of the Heights in the Holy Qur'an? (Yes, No).
2. Do you know who the People of the Heights are? (Yes, No).
3. What is the source of your information about the People of the Heights story (you can specify more than one answer)? (School, Home, Media, Social media, and other)
4. The People of the Heights are those whose: a—Good deeds are greater than their bad deeds. b—Good deeds are less than their bad deeds. c—Good deeds were equal to their bad deeds. d—I don't know.
5. According to the story, do the People of the Heights enter the fire of Hell? (Yes, No, I don't know).

**Institutional Review Board Statement:** Ethical approval to carry out this study was granted by all college deans and lecturers involved in data collection, in alignment with the respective universities' requirements at the time of the study.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Not applicable.

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