

Article

# How to Measure Baha'i Religiosity: The CRSi-20 for Baha'is as a First Reliable and Valid Measurement

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**Abstract:** The concepts and measurements in psychology of religion often adhere to its Judeo-Christian roots, which causes problems when measuring non-Christian religiosity. In this paper, two successive studies are presented. The first study applied Huber's CRS-15, while the second study used the CRSi-20. Both samples consisted of believers of the non-Christian, Abrahamic Baha'i religion in Germany. In the first study, in which  $N = 472$  participated ( $M_{Age} = 43.22$ ,  $SD_{Age} = 15.59$ , 60.0% female), the reliability and validity issues related to items of public practice and experience of the CRS-15 were uncovered. After modifying the content of these items and adding the five additional items of the interreligious CRSi-20, which was tested among  $N = 324$  participants ( $M_{Age} = 47.12$ ,  $SD_{Age} = 17.06$ , 59.6% female) in a second study, most reliability issues were solved. Confirmatory factor analyses revealed that the CRSi-20 model describes the data appropriately with adequate fit indices. Therefore, the *CRSi-20 for Baha'is* offers the first reliable and valid measurements of Baha'i religiosity, being at the same time capable of taking the emic perspective fully into account while maintaining the possibility of cross-religious comparisons.

**Keywords:** Centrality of Religiosity Scale; Baha'i; non-Christian religiosity; reliability; validation

## 1. Introduction

For about two decades, many contributions to psychology and the psychology of religion have stressed the importance of culture- and religion-sensitive concepts and measurements (e.g., Cutting and Walsh 2008; Henrich et al. 2010; Loewenthal 2000). Unfortunately, it seems hard for the psychology of religion to overcome its ethnocentric bias with its Western-Protestant roots that heavily dominate journal articles and course books to this day (Hill and Edwards 2013; Paloutzian 2017). This applies to Western-Christian-based concepts that are imposed on non-Western/non-Christian samples (Abu-Raiya 2012; Watson et al. 2002) as well as measurements of religiosity, which have seldom been used to examine such samples. Therefore, there are few references concerning the reliability or validity of measurements of religiosity in non-Western/non-Christian samples (see Ağılkaya-Şahin 2015; Demmrich et al. 2017; El-Menouar 2014; Jana-Masri and Priester 2007).

Regarding religiosity measurements, there seem to be two main approaches that try to measure religiosity beyond Western Christianity (see Hill and Edwards 2013; Höllinger and Eder 2016). Stemming from a cultural-relativistic perspective (Geertz 1973), the first approach aims at constructing indigenous religiosity measurements of specific religious traditions from an emic perspective (e.g., Abu-Raiya et al. 2008; Cohen 2009; Jana-Masri and Priester 2007; Watson 2019). However, this approach has the disadvantage of lacking cross-religious comparability (Huber and Huber 2012) and harbors the risk of reinventing the wheel. Stemming from a cultural-universal perspective (Durkheim 2008), the second approach aims at finding forms of religiosity that can be detected in every religion and is an accompanying measurement that is cross-culturally applicable, as confirmed by validity and reliability analyses (e.g., the Spiritual Transcendence Scale by Piedmont 2007). An often-neglected third approach represents a convergence of both approaches, the cultural-relativistic

and the cultural-universal, by trying to find universal forms of religiosity but to fill these forms with different contents/items according to the theological-cultural background of a specific religious tradition (e.g., [Cohen and Hill 2007](#); [El-Menouar 2014](#); [Höllinger and Eder 2016](#)). The advantage of this converged approach is not merely its economic efficiency, but also the maintenance of an emic perspective while ensuring comparability.

Such an approach was established almost 60 years ago by the work of [Glock \(1962\)](#). Together with Stark ([Stark and Glock 1968](#)), he formed five universal dimensions of religion: private and public practice, ideology, intellect, and experience. The authors of this model alleged that these dimensions can be found in all religions and can be filled with indicators which are specific for a certain religious tradition. In line with their study aims, which were clearly restricted to North American samples, Christian indicators were used (e.g., the belief in “the divinity of Jesus Christ” as an indicator of the ideology dimension, [Stark and Glock 1968](#), p. 58). Further studies on non-Christian religions and related formulation of appropriate indicators were not addressed in their work.

Probably the most fruitful extension of Glock’s model until now is Huber’s model of Centrality and Content ([Huber 2003, 2004](#)). It uses the five dimensions but has completed them with an intensity measure derived from the concept of intrinsic–extrinsic religiosity by [Allport and Ross \(1967\)](#). The resulting model conceptualizes the five dimensions of religiosity according to their centrality in an individual’s personality and the corresponding measure—the Centrality of Religiosity Scale (CRS)—was tested in the Western-European-Christian and Western-European-secular context to be highly reliable and valid ([Huber 2003](#)). Beyond this context, the CRS claims to be applicable to all Abrahamic religions since those contain a monotheistic concept of God.

Regarding the cross-cultural/cross-religious applicability of the scale, [Huber \(2003; Huber and Huber 2012\)](#) emphasizes that the five dimensions are accurate psychological representations as they cover all psychological modes: behavior (private and public practice), cognition (intellectual and ideological dimension), and emotions/experience/perceptions (experiential dimension). However, the content of the indicators is open to modifications, e.g., ‘religious service’ can be replaced with Muslims’ ‘Friday prayer’ as an indicator for public practice—this strategy maintains cross-religious comparability ([Huber and Huber 2012](#)). The CRS has been used until now in many different cultural–religious contexts<sup>1</sup>, was validated in countries beyond Western Europe (e.g., [Esperandio et al. 2019](#) for Brazil; [Gheorghe 2019](#) for Romania; [Zarzycka 2007](#) for Poland), and is extensively used for non-Christian religious samples (e.g., [Bertelsmann Stiftung 2009](#)), but has not been sufficiently validated in the latter samples.

The two here-presented studies validated [Huber’s \(2003; Huber and Huber 2012\)](#) Centrality of Religiosity Scale among Baha’i samples for the first time. To the best of my knowledge, there has been no validated scale which measures Baha’i religiosity until now. It is possible that the indicators of the five dimensions have to be revised in order to raise the quality of the test characteristics. On the other hand, it is also possible that Huber’s psychological measure fits across Abrahamic religious traditions, including Baha’is. Despite the unquestionable importance of statistical analyses for testing the reliability and validity of a scale, the highest priority in scale construction should be given to the criteria of appropriateness of item content ([Bühner 2011](#)). For this reason, it is important to take the Baha’i faith and the theology it is based on into consideration when applying the five dimensions by [Stark and Glock \(1968\)](#) and the original CRS-15 items by [Huber \(2003\)](#).

## 2. The Baha’i Religion and the Five Dimensions of Religiosity

The Baha’i religion (also: Baha’i faith) was founded by the Iranian Mirza Husain-’Ali Nuri (1817–1892), called with the honorary title Baha’u’llah, in 1863 by proclaiming to be the prophet of a new era of humankind ([Momen 2007a; Smith 1987](#)). He understood his teachings to be embedded in

<sup>1</sup> See [https://www.ier.unibe.ch/forschung/centrality\\_of\\_religiosity\\_scale\\_crs/index\\_ger.html](https://www.ier.unibe.ch/forschung/centrality_of_religiosity_scale_crs/index_ger.html) (15 November 2019).

a progressive revelation in which God sends prophets (also: manifestations of God) to humankind in different eras—starting with Adam and continuing to Moses, Jesus, Muhammad, among others, and the precursor of the Baha’i faith, the Bab, to Baha’u’llah (Baha’u’llah 1976; Momen 2000, 2007a). Therefore, the Baha’i religion does not only build upon Islamic elements (Momen 2000; Smith 1987) but is also an Abrahamic religion (Lawson 2012).

Due to a long history of exile and imprisonment of Baha’u’llah in today’s Iran, Iraq, Turkey, and Israel (Momen 2007a), the Baha’i faith spread throughout the Middle East in the 19th century (Cole 1998; Smith 1987). Later, at the beginning of the 20th century, it spread to the USA and Europe, including Germany (Smith 2008a). The first German Baha’is started to gather in 1905 in the Stuttgart area (National Spiritual Assembly of Germany 2019). Nowadays, Germany is the seat of the only European Baha’i temple (also: House of Worship; Benz 1971) and the German Baha’i community received the status of a corporation under public law in 2013. Currently, it consists of about 100 local communities and 6000 members (minors under 15 years of age not counted; personal communication with National Spiritual Assembly of the Baha’is of Germany, 7 October 2019). The Baha’i faith has spread globally and is a growing religion (Smith 1987), attracting “followers from a wide range of religious and cultural backgrounds” (Smith 2008a, p. 50), and for these reasons can be defined as a world religion (Hutter 2005; Smith 1987).

As there are no big schisms in the Baha’i religion (Momen 2007b) and as there is one authoritative interpretation of the scriptures (Smith 2008a), a quite homogenous sample in terms of religiosity is expected. Moreover, high levels of religiosity are anticipated since many Baha’is in Germany are converts (see Lakhdar et al. 2007).

**Private practice.** The CRS-15 (Huber 2003) asks for the frequency and importance of prayers, as well as the frequency of spontaneous prayers in daily situations. The Baha’i religion contains several private practices; some of them are considered to be obligatory, some voluntary. Baha’is can choose between three different daily obligatory prayers (Baha’u’llah 1992), which are prayed alone and therefore defined as a private practice (on the debate of private *versus* public practice see Demmrich and Huber 2019). Moreover, there is an obligatory meditation (Baha’u’llah 1992), which is similar to a rosary prayer. Beyond the obligatory private practices, Baha’is are encouraged to perform non-obligatory meditation/individual contemplation (without a firm ritual; Smith 2008b) and non-obligatory prayers. As the non-obligatory prayers are heavily dominated by revealed prayers from books, the applicability of the item for spontaneous prayer in daily situations is slightly questionable as such prayers are not of high importance in the Baha’i faith. In contrast to Islam, there is no sharp difference, e.g., by different terms, between obligatory and non-obligatory private practices, plus there are no marked gender differences regarding the performance of religious practices in general.

Although the CRS-15 by Huber neglects meditation, major conflicts are not expected when the items of the public practice dimension are applied to a sample of Baha’is.

**Public practice.** Huber’s (2003) scale addresses this dimension with three items: the frequency of attending religious services (also via radio or TV), importance of church service of an individual and their connection to a religious community. Firstly, the Baha’i religion does not use the concept of a weekly church service. Instead, the local Baha’i community meets every nineteen days (beginning of a Baha’i month) for a so-called Nineteen Day Feast, which consists of public worship, consultation, and refreshments (Momen 2000). Nonetheless, additional worship meetings are always possible and a central activity in the Baha’i communities. Moreover, the Baha’i calendar contains nine holidays and two additional days of remembrance, which are publicly celebrated in the communities (Momen 2000).

For these reasons, several biases are anticipated when applying these items of religious service to a sample of Baha’is. First, the German term *Gottesdienst*, which is used in both items, is heavily associated with Christianity and consequentially, the scores on these items can amount to zero despite being a highly religious Baha’i. Secondly, the attendance of a religious service via radio or TV is problematic to impossible for a minority religion such as the Baha’is, as the feasts are usually not broadcasted. This can result in an unequal comparison between Baha’is and, for example, Christians.

Thirdly, *Gottesdienst* (serving God) is a much wider concept in the Baha'i faith as it also contains serving humanity (Abdul-Bahá 2006) and work (Baha'u'llah 1994). The last item of the CRS-15, the individual's importance of being connected to a community is a fundamental part of Baha'i religiosity (Momen 2000; Smith 2008a). Hence, no conflict is here expected upon application of this item to Baha'is.

**Ideology.** This is measured by the individual's intensity of belief in a higher power, in God, and in life after death. Considering the first two items, the monotheistic Baha'i religion clearly emphasizes the existence of a higher power or ultimate reality, which cannot be comprehended as the human mind is limited. This higher power is usually called God in the writings of Baha'u'llah (Momen 2000) but also the Unknowable Essence and the Divine Being, among others (Momen 2007a), which underlines a more non-anthropomorphic God concept. Concerning the applicability of the third item (life after death), the writings of Baha'u'llah contain numerous parts in which the afterlife is taught to be a spiritual reality (Smith 2008a). Those passages about the afterlife are a central theme in compilations of the holy writings, of secondary literature as well as of study groups (Hatcher 2012; Ruhi Foundation 2012). Baha'u'llah's revealed prayers for the departed are cited from time to time during Nineteen Day Feasts, public worships, and private prayers (Baha'u'llah 2009).

As demonstrated, the belief in a higher power, in God, and in the afterlife are central aspects of the ideological dimension of the Baha'i religion. Therefore, no conflicts are anticipated when the original items are applied to a Baha'i sample.

**Intellect.** As the Baha'i religion does not contain a system of authoritative clerics (Momen 2000), a central principle is that every Baha'i is responsible for intellectually examining the holy writings (Smith 2008a). There are more than 100 volumes by Baha'u'llah, plus the writings of his pre-cursor, the Bab, and the writings of the other world religions are considered to be divine, too, and can be read during private and public practices. The additional writings after Baha'u'llah, especially by his successors and authoritative interpreters Abdul-Bahá (1844–1921) and Shoghi Effendi (1987–1957), as well as the elucidations and authoritative legislation by the Universal House of Justice (international assembly since 1963), plus the extensive non-authoritative secondary literature, are additional sources of intellectual stimulation (Smith 2008a). Another daily obligation for Baha'is is to read the holy writings in the morning and in the evening (Baha'u'llah 1992), which stresses the importance of intellectual examination even on a ritualistic level. In addition, one of the central activities of Baha'i communities is regular group meetings, where spiritual topics are studied by reading and consulting about the holy writings (e.g., Ruhi Foundation 2012) aiming at developing practical capacities.

The items of Huber's (2003) CRS-15 ask about the intensity of personal interest in religious questions, the frequency of thinking about such religious questions, and the frequency in which information about religious topics is collected via radio, TV, newspapers, or books. In contrast to the item of public practice, which asks about attendance of religious services, also via digital media, no disadvantage for a minority religion is expected here, since this intellectual item is not restricted to a specific religious tradition. In sum and in line with Huber, no conflicts are anticipated between the items of the intellectual dimensions and Baha'i religiosity.

**Experience.** Religious experience is covered in Huber's (2003) CRS-15 by three items that ask about the frequency of feeling God's presence, of God's interventions into the individual's life and the feeling that God communicates with the individual. Regarding the first item, the feeling of God's presence can imply that God comes close to the individual. Due to the central aspects of absolute sovereignty of the God concept in the Baha'i faith, the subject and the object are reversed: the human being can reach nearness to God, which is strongly appreciated as a highly emotional and intellectual religious experience (Abdul-Bahá 2012). Regarding the religious experience that God intervenes in an individual's life, although God is regularly called with names that have an intervening connotation such as the helper, the healer, the creator, the giver, the all-compelling (Baha'u'llah 2009), a direct intervention into an individual's life is not a central topic in the Baha'i faith (Baha'u'llah 2009). The item remains controversial, as the Baha'i theology distances itself from divine predestination of all life aspects, which could mean a constant intervention into an individual's life (Abdul-Bahá 2014).

The third item, which asks about the experience in which God communicates with the individual, seems to be inspired by a Protestant/Pietist/Charismatic religiosity and not appropriate for Baha'i religiosity. Baha'u'llah underlines that God communicates to humanity through the prophets, i.e., the communication from God to the individual is indirect via the revealed holy writings (Momen 2007a). In addition, the revelation experience of Baha'u'llah, in which he precisely describes his first connection to a spiritual realm (Baha'u'llah 1988), is considered to be a unique experience that cannot be experienced by human beings, who are on a different spiritual level to the prophets (Momen 2007a).

Due to God's absolute sovereignty as a central part of the God concept in the Baha'i religion and earlier findings that religious experience is influenced by the religious-ideological background (Cohen and Hill 2007; Huber 2003; Stark and Glock 1968), inconsistencies are expected when applying the CRS-15 experience items to a Baha'i sample. Two items remain controversial (God's presence and intervention) and one item does not seem appropriate (communication) to measure religious experience.

### 3. Aims of the Studies

The purpose of the here-presented two successive studies was to test whether Huber's Centrality of Religiosity Scale (CRS) is a reliable and valid measurement for Baha'i religiosity. The first study's aim was to apply the original CRS-15 (Huber 2003) to a sample of Baha'is in order to test its suggested applicability to a non-Christian Abrahamic religion by conducting reliability and validity analyses.

After inconsistencies were found in these analyses, suggestions regarding modification and/or exclusion of indicators were formulated. Taking the improvements of the interreligious CRSi-20 (Huber and Huber 2012) into account, a revised scale was applied to a sample of Baha'is in a second study. This revised scale was analyzed in terms of an expected heightened reliability and validity.

The final aim of the study was to present a reliable and valid CRS for Baha'is as the first measurement of Baha'i religiosity displaying high psychometric standards.

## 4. Study 1

### 4.1. Method

#### 4.1.1. Measurements

As the first study took place in 2005, the original CRS-15 by Huber (2003) was applied (see Huber 2004, p. 105). The CRS-15 measures the five dimensions of religiosity with three items each; these were already described in the introduction of this paper. At the same time, the frequency of religious service attendance was measured on a seven-point answer scale (from 1 = *never* to 7 = *several times a week*) and the frequency of prayer on a nine-point answer scale (from 1 = *never* to 9 = *several times a day*). These answer scales were later converted into a five-point frequency scale. All other items in the CRS-15 are measured on a five-point answer scale, which ranges from 1 = *not at all* to 5 = *very much so* for items asking about intensity (e.g., 'How important is personal prayer for you?') and from 1 = *never* to 5 = *very often* for items asking about frequency ('How often ...'). Additionally, age, gender, and education level were asked as sociodemographic variables.

#### 4.1.2. Sample and Procedure<sup>2</sup>

The paper-pencil questionnaire was distributed to various German Baha'i communities via snowball sampling (Hofmann 2006; Hofmann and Huber 2006). The sample consisted of  $N = 472$  participants ( $M_{Age} = 43.22$ ,  $SD_{Age} = 15.59$ , 60.0% female) and was highly educated: 69.7% held an A-level, 10.6% an advanced technical college certificate, and less than one fifth of the sample a lower degree.

<sup>2</sup> Special thanks to Dr. Nadi Towfigh (née Hofmann) and Prof. Dr. Stefan Huber for data collection.

## 4.2. Results

### 4.2.1. Reliability Analysis

Under consideration of the means and standard deviations of the items and subscales, the analysis included Cronbach's alpha as a general reliability indicator, inter-item-correlation as a homogeneity index, item-total-correlations, squared multiple correlations, and an increase in the Cronbach's Alpha if items were deleted. Table 1 shows a summary of the results.

**Table 1.** Study 1: Summary of the results of the reliability analysis of the Centrality of Religiosity Scale (CRS) and its subscales.

	Sum of Item Scores		Cron-bach's $\alpha$	Inter-Item-Correlations		Corrected Item-Total-Correlation	Squared Multiple Correlation	Problematic Items
	M	SD		M	SD			
Total scale (15–75)	60.91	6.54	0.82	0.25	0.14	$0.25 \leq r_{it} \leq 0.56$	$0.23 \leq R^2 \leq 0.48$	Frequency of worship service, all 3 experience items
Private practice (3–15)	13.08	1.82	0.68	0.45	0.10	$0.46 \leq r_{it} \leq 0.58$	$0.22 \leq R^2 \leq 0.36$	Frequency of spontaneous prayer (minor)
Public practice (3–15)	11.64	4.69	0.61	0.35	0.14	$0.37 \leq r_{it} \leq 0.56$	$0.19 \leq R^2 \leq 0.33$	Frequency of worship service
Ideology (3–15)	14.49	1.35	0.70	0.46	0.10	$0.49 \leq r_{it} \leq 0.60$	$0.27 \leq R^2 \leq 0.37$	-
Intellect (3–15)	12.26	1.81	0.69	0.44	0.04	$0.48 \leq r_{it} \leq 0.54$	$0.23 \leq R^2 \leq 0.30$	-
Experience (3–15)	9.64	2.41	0.75	0.50	0.03	$0.54 \leq r_{it} \leq 0.60$	$0.30 \leq R^2 \leq 0.37$	all 3 experience items

Note. The numbers in the brackets in the first column display the range of the sum of items score of the total and the five subscales, respectively.

First, it is remarkable that alphas for the whole scale and subscales are lower than in Huber's (2003, 2004) studies. One reason for lower reliability could be that Baha'is showed high means and low variance of religiosity in their answers. This is probably also due to the snowball sampling procedure.

In the total scale, the frequency of worship service (*Gottesdienst*) showed an unacceptable corrected item-total-correlation ( $r_{it} = 0.26 < 0.30$ ; Bühner 2011) and explains the lowest proportion of the total variation of the CRS ( $R^2 = 0.23$ ). Moreover, the same item showed a zero correlation with the intellectual interest in religious questions and low intercorrelations with all other items ( $r \leq 0.18$ , except for importance of *Gottesdienst*  $r = 0.43$ ). Consequently, Cronbach's Alpha would rise slightly to  $\alpha = 0.83$  if this item is deleted. Considering the answers to the frequency of religious service item before converting it into a five-point-scale, it is interesting to note that the mean ( $M = 4.17$ ,  $SD = 1.38$ ) targeted the answer 4 = about once a month or 5 = every 14 days, which corresponds with the cycle of the Nineteen Day Feasts (a Baha'i month contains 19 days).

Regarding *private practice*, the item that asked about the frequency of spontaneous prayer in daily situations seemed to be marginally questionable as the alpha increases slightly to 0.69 when deleted. Additionally, these two problematic items, the importance (2.1% missing) and especially the frequency of *Gottesdienst* (3.4% missing) exceeded the critical level of 2% missing values (Bühner 2011). For this reason, the MCAR test was applied to the private practice subscale, in order to test whether the missing values were random or not. The test was neither significant for public practice nor for any other subscale.

Except for high homogeneity, which applied to all subscales and could be interpreted due to the generally high homogeneity of Baha'i samples, no reliability issues could be detected in the subscales *intellect* and *ideology*.

Finally, the three *experience* items showed the lowest means in this highly religious sample, with the experience that God communicates with the individual as the only item with an average below

the scale mean ( $M = 2.98$ ,  $SD = 0.97$ ). This condensed on the level of the total CRS and the subscale ‘experience’ as the mean of this subscale was the lowest and its homogeneity was the highest of all the subscales, which means that the majority of the participants does not have any of these three experience frequently.

#### 4.2.2. Validity Analysis

The validity of Huber’s (2003) CRS-15, when applied to a Baha’i sample, was tested with a confirmatory factor analysis (CFA) using AMOS software. Before running the CFA, missing values had been imputed by using the expectation-maximization method, separately for each subscale. As in the original study by Huber (2003), the five-factor model was specified with three items for each subscale. Covariations between the factors were allowed.

First, the significant chi-square signaled that the model did not fit perfectly ( $\chi^2[80] = 282.16$  \*\*\*), but the  $p$ -level was influenced by the large sample size. The other indicators of model fit showed mixed results: while the  $RMSEA = 0.07$  ( $SRMR = 0.06$ ) and the  $GFI = 0.93$  were adequate, the  $AGFI = 0.89$  was only tolerable, while the  $CFI = 0.89$  fell under the critical value of  $\geq 0.90$ , which lead to the decision to reject the model (Bühner 2011). The highest modification indices within the same subscale were found between (1) the two items that ask about religious service ( $cov = 11.41$ ) and (2) the importance of religious service and the importance of religious community ( $cov = 10.33$ ). Of all item loads, the item about the importance of a religious community loaded lowest (on public service with 0.80). As the criteria of appropriateness of the item content is of highest priority, the items related to religious service were considered to be problematic and should be modified instead of being excluded (Bühner 2011).

#### 4.3. Discussion

The CRS-15 (Huber 2003), theoretically applicable to Abrahamic religions, was applied to a sample of Baha’is for the first time. After a theoretical analysis from an emic perspective (see Cohen 2009; Höllinger and Eder 2016), extensive reliability and validity analyses were performed. As expected, the reliability analysis confirmed the theoretical considerations regarding the (in)appropriateness of some indicators (see Bühner 2011) for a Baha’i sample and the validity analysis underlined the most critical item contents. These were the items related to religious service (*Gottesdienst*), which created several reliability and validity problems, especially the item asking about the frequency of religious service. Consequentially, a replacement of the term *Gottesdienst* with “community activities (e.g., Nineteen Day Feasts, holiday celebrations, worship meetings)” is suggested (see Höllinger and Eder 2016; Huber and Huber 2012).

Since the first study in 2005, further developments on the CRS took place. First, an interreligious CRS was formed by adding five items to the original scale—the CRSi-20—with the aim of overcoming the Christian/Abrahamic bias and to “provide a comprehensive basis for the application of the CRS also in interreligious studies” (Huber and Huber 2012, p. 721). As in our study among Baha’is, Huber and Huber underline a limited applicability of the original CRS-15 scale to Muslim samples, although Islam is an Abrahamic religion, too.

Three items of the *private practice* dimension were added by Huber and Huber (2012): two ask about frequency and personal importance of meditation (corresponding to frequency and personal importance of prayer), which showed more face validity in terms of Baha’is’ private practices (Baha’u’llah 1992; Smith 2008b). The third item of private practice, namely the frequency to connect spontaneously to the divine in daily situations was added for the CRSi-20. The corresponding item of private practice that asked about the frequency of spontaneous prayer in daily situations was not excluded from the second study among Baha’is as its test characteristic issues were rather minor. Two items of the *experience dimension* were added, which focus on experiences of “being at one” (Huber and Huber 2012, p. 715), namely the frequency of the feeling of being one with everything (corresponding to the experience of God’s intervention) and of being touched by a divine power (corresponding to the experience that God communicates with the believer). These five additional items were especially

intended to cover practices and experience of Eastern traditions as well as new forms of spirituality in contemporary Western societies. As the authors stated, either the basic item (e.g., prayer frequency) or the corresponding additional item (e.g., meditation frequency) is used and “the item with the higher score [for every single individual] entering the total score of the respective CRSi-version” (Huber and Huber 2012, p. 719), which was applied to the reliability and validity analyses of Study 2.

Secondly, the wording of some items was slightly changed in the 2012 version, which were also overtaken for the second study presented in the following. Important for studying Baha’is as a minority religion in Germany is the deletion of the media part in the frequency item of religious service attendance. Nevertheless, the change in all three experience items might be the most crucial adaptation, adding to God “or something divine” (Huber and Huber 2012, p. 717), which, as a more general term, should be less theologically conflictual than merely ‘God’. Like in Islam, absolute sovereignty is central to the God concept of the Baha’i faith and can influence religious experience (see Cohen and Hill 2007; Huber 2003; Stark and Glock 1968). Therefore, the two changes suggested for Muslim samples were overtaken: “intervenes” was replaced by “allows for an intervention in your life” and “wants to communicate or to reveal something to you” was replaced by “lets something be communicated or revealed to you” (Huber and Huber 2012, p. 720). This preliminary CRSi-20 was tested in Study 2 using very current data.

## 5. Study 2

### 5.1. Method

#### 5.1.1. Measurements

Besides the CRS-20i in the above-described version, the sociodemographic variables age, gender, and education level were also asked.

#### 5.1.2. Sample and Procedure

The link to an online questionnaire was distributed to the local communities by the National Spiritual Assembly of the Baha’is of Germany in 2019. With this convenience sampling, compared to the first study that used snowball sampling, a more diverse sample was anticipated, which could raise the variance of the answers. After reading the instruction, the participants had to confirm that they were over 18 years old, lived in Germany, and were Baha’is.

The sample consisted of  $N = 324$  participants ( $M_{Age} = 47.12$ ,  $SD_{Age} = 17.06$ , 59.6% female, 0.3% diverse), who filled in the online questionnaire with 10% or less missing answers. The sample was again highly educated: 76.9% held an A-level, 9.9% an advanced technical college certificate, and less than one seventh of the sample held a lower degree. According to the mean and variance of age, distribution of gender, and education level, this sample is highly comparable to the sample in the first study.

### 5.2. Results

#### 5.2.1. Reliability Analysis

Table 2 shows a summary of the results of the reliability analysis of the revised CRSi-20 and its subscales. Compared to the first study, it is remarkable that Cronbach’s alphas increased in four subscales while remaining on a similar level for private practice and scale as a whole. Nevertheless, the reliabilities were still lower than Huber’s (2003, 2004) original study ( $\alpha \geq 0.62$  here versus  $\alpha \geq 0.79$  in the original study) which might again be due to the high means ( $3.50 \leq M \leq 4.91$ ) and low variances ( $0.30 \leq SD \leq 0.99$ ) of the item scores as well as the high homogeneity of the subscales ( $0.38 \leq r_{ii} \leq 0.61$ ).

**Table 2.** Study 2: Summary of the results of the reliability analysis of the revised CRS and its subscales.

	Sum of Item Scores		Cron-bach's $\alpha$	Inter-Item-Correlations		Corrected Item-Total-Correlation	Squared Multiple Correlation	Problematic Items
	M	SD		M	SD			
Total scale (15–75)	64.81	5.84	0.82	0.25	0.13	$0.27 \leq r_{it} \leq 0.52$	$0.33 \leq R^2 \leq 0.53$	-
Private practice (3–15)	13.38	1.63	0.62	0.38	0.09	$0.38 \leq r_{it} \leq 0.50$	$0.15 \leq R^2 \leq 0.26$	-
Public practice (3–15)	13.33	1.82	0.76	0.51	0.09	$0.53 \leq r_{it} \leq 0.68$	$0.32 \leq R^2 \leq 0.46$	-
Ideology (3–15)	14.68	0.92	0.77	0.55	0.74	$0.59 \leq r_{it} \leq 0.69$	$0.36 \leq R^2 \leq 0.49$	-
Intellect (3–15)	12.35	1.76	0.70	0.44	0.00	$0.51 \leq r_{it} \leq 0.54$	$0.26 \leq R^2 \leq 0.29$	-
Experience (3–15)	10.98	2.44	0.82	0.61	0.03	$0.66 \leq r_{it} \leq 0.70$	$0.44 \leq R^2 \leq 0.49$	-

Note. The numbers in the brackets in the first column display the range of the sum of items score of the total and the five subscales, respectively.

Regarding the total scale, the frequency of community activities (e.g., Nineteen Day Feasts, holidays, devotional meetings) showed a critical corrected item-total-correlation again ( $r_{it} = 0.27 < 0.30$ ; Bühner 2011), but this time, the variance explanation increased sharply to  $R^2 = 0.33$  (versus  $R^2 = 0.23$  in Study 1). Although this item showed a zero-correlation with one item of private practice and all three religious experience items, it highly intercorrelated with the other items of the same subscale ( $0.41 \geq r \geq 0.54$ ) and displayed a low to moderate positive relation to the other items ( $0.10 \geq r \geq 0.21$ )—in contrast to Study 1, in which, besides zero correlations, the relationships to all other items were only weak. Finally, and again in contrast to the first study, Cronbach's alpha for the whole scale would not increase if the item was deleted. Consequentially, this modified item is considered appropriate.

In the *private practice* subscale, the item for spontaneous prayer/connection to the divine showed mixed results: it explained only a low proportion of variance ( $R^2 = 0.15$ ) and Cronbach's alpha of the subscale would increase slightly if this item were deleted ( $\alpha = 0.66$ ). On the other hand, its corrected item-total-correlation was good ( $r_{it} = 0.38$ ) and correlations with other items of the whole scale were weak to high ( $0.13 \leq r_{ii} \leq 0.46$ ; except of the already reported zero-correlation to frequency of public service) and therefore, this reliability issue did not manifest at the level of the whole scale. As a result, this item should be considered problematic, but in a minor way (which confirms the reliability analysis results of Study 1) due to its good item-total-correlation and non-zero inter-item-correlations. The final evaluation of this item took place after the results of the validity analysis.

However, the *experience* item values still displayed the lowest means in this highly religious sample, but this time they lay above the scale mean and showed a higher variance than the other subscales. Regarding the intellect and ideology subscales, no reliability issues could be revealed. Probably due to the exclusion criteria of cases with missing values of  $> 10\%$  and the inclusion of five out of ten corresponding items in the interreligious version of the CRS (Huber and Huber 2012), less than 2% missing values of any variable were displayed and none of the subscales showed systematic missing values according to the MCAR test.

### 5.2.2. Validity Analysis

The same construct validity analysis as in Study 1 was run; missing values were imputed again by the expectation-maximization method, separately for each subscale. As in the interreligious scale by Huber and Huber (2012), the five-factor-model was specified with three items for each subscale. Covariations between the factors were allowed.

The results showed a good model fit: the parsimony adjusted index with  $RMSEA = 0.07$ , the standardized root mean square residual with  $SRMR = 0.06$ , and the goodness of fit index with  $GFI = 0.92$  ( $AGFI = 0.88$ ) were all acceptable. While the model chi-square was significant  $\chi^2(80) = 209.57^{***}$ ,

which was influenced by the large sample size, the comparative fit index  $CFI = 0.92$ , which is not very sensitive to the sample size, was adequate.

The *CRSi-20 for Baha'is* is displayed in Appendix A in the German original and in its English translation.

### 5.3. General Discussion

One central challenge for research on religiosity beyond Christianity is to generate ways of overcoming the Judeo-Christian bias regarding concepts and measurements (Hill and Edwards 2013). This can be approached either by the construction of emic scales (e.g., Cohen 2009; Jana-Masri and Priester 2007), which results in a lack of cross-religious comparability or by applying established religiosity scales to different populations with staying open for minor or major changes of the indicators (El-Menouar 2014; Hill and Edwards 2013; Paloutzian 2017). The latter cultural-religiously sensitive approach was followed by applying Huber's (2003; Huber and Huber 2012) Centrality of Religiosity Scale (CRS) in two different versions to samples of Baha'is in two successive studies.

In Study 1, some reliability issues of the CRS-15 were revealed. First, the public practice subscale was not reliable, which was caused by the item of frequency of religious service that used the term *Gottesdienst*, which has a strong Christian connotation. Even if Baha'is interpret *Gottesdienst* as the Nineteen Day Feast, the answer scale underlines a conflict between the Gregorian and the Baha'i calendar (one month consists of 19 days, the Nineteen Day Feast is celebrated once in a Baha'i month). As a result, missing values of this item exceeded the critical limit. Moreover, if the item is understood in terms of the Nineteen Day Feast, there is a lack of comparability of frequency of attending religious service in different religions. Therefore, this item was modified by replacing *Gottesdienst* with 'community activities (e.g., Nineteen Day Feasts, holiday celebrations, devotional meetings)' and the same was applied to the item of importance of religious service (see Huber and Huber 2012). Secondly, all items of the experience subscale showed low means and high homogeneity, which was already expected from the theological analysis, which outlined that those experience are highly influenced by a Christian concept of God. The reliability issues of both subscales were manifest on the level of the total scale, too.

The issues of unreliability could be solved by modifying the content of public practice items appropriately and by applying the suggested reformulation of religious experience items for Muslims by Huber and Huber (2012), which takes absolute sovereignty as a central part of the God concept also among Baha'is into account. One, although minor, reliability issue remains—the item for spontaneous prayer/spontaneous connection to the divine showed mixed results regarding reliability indicators and contributes to the low (but still acceptable) reliability of the public practice subscale. In the theological analysis, it was already outlined that this item does not comply with the public practice of Baha'is since non-obligatory prayers are usually not spontaneous but heavily dominated by revealed prayers from books. Therefore, spontaneous prayers or other forms of spontaneous connections to the divine are not of high importance in the Baha'i faith. In sum, as this item of private practice, which asks about spontaneous prayer/connection to the divine, neither caused reliability problems on the level of the whole scale nor validity problems, we consider this issue as minor. Nevertheless, we highly recommend a reformulation of this item in future studies in order to raise the reliability of the private practice subscale.

Regarding validity, the confirmatory factor analysis in Study 1 revealed mixed fit indices and high modification indices regarding the two items of religious service, which already caused reliability issues. After the modification of these items and adding the additional items of the interreligious *CRSi-20* (Huber and Huber 2012), Study 2 found adequate model fits.

In conclusion, it was shown that the *CRSi-20* (Huber and Huber 2012) is equivalent to the concept of Baha'i religiosity (i.e., no concept bias is present) after revisions of the content of single items (Höllinger and Eder 2016) based on theological considerations, reliability, and validity analyses. This meets a happy medium between cultural-universal (Cohen and Hill 2007; Durkheim 2008) and

cultural-relativistic approaches (Cohen 2009; Geertz 1973; Jana-Masri and Priester 2007; Watson 2019) as the *CRSi-20 for Baha'is* is capable of taking the emic perspective into account while maintaining the possibility of cross-religious comparisons (Huber and Huber 2012).

One limitation of both here-presented studies is the high religiosity of both samples, despite changing the data collection procedure from paper-pencil questionnaires and snowball sampling in Study 1 to an online questionnaire and convenience sampling in Study 2. As explained earlier, many Baha'is in Germany are converts or from families of converts, which is usually accompanied by high religiosity (e.g., Lakhdar et al. 2007). For future cross-religious comparisons, it is suggested to contrast (highly religious) Baha'is with highly religious individuals from other religions (e.g., Christians) in order to maintain comparability. This is again provided by the CRS as it is capable of categorizing participants into low, medium, and highly religious individuals (Huber 2003; Huber and Huber 2012). Moreover, norms of religiosity should be established for Baha'is (see Huber and Huber 2012 for norms). The same applies to the highly educated samples in both studies, which might be due to the taste of educated individuals for a religion with a strong intellectual focus, such as the Baha'i religion (Stark and Finke 2000) but also to the commandment in the Baha'i faith of the highest possible education (Baha'u'llah 1976).

The *CRSi-20 for Baha'is* is—to my best knowledge—the first reliable and valid measurement of Baha'i religiosity. Regarding its cross-cultural applicability, major inconsistencies are not anticipated as there has been no big schism in the Baha'i faith so far (Momen 2007b) and one authoritative interpretation of the scriptures dominates (Smith 2008a). Nevertheless, the cultural influence on Baha'i religiosity remains an empirical question (see Cohen and Hill 2007).

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**Appendix A**

CRSi-20 for Baha'is

The numbers of the items indicate the item order by *Huber and Huber (2012)*.

<b>Wie interessant, wichtig oder wahrscheinlich sind für Sie die folgenden Inhalte? (Regarding this one and the following questions please take your personal imagination of "God" or "something divine")</b>					
<i>(Bitte gehen Sie bei diesen und allen weiteren Fragen von Ihrer persönlichen Vorstellung von "Gott" aus.)</i>					
	<b>gar nicht</b>	<b>wenig</b>	<b>mittel</b>	<b>ziem-lich</b>	<b>sehr</b>
2. Wie stark glauben Sie daran, dass Gott oder etwas Göttliches existiert? (To what extent do you believe that God or something divine exists?)	①	②	③	④	⑤
6. Wie stark interessieren Sie sich dafür, mehr über religiöse Themen zu erfahren? (How interested are you in learning more about religious topics?)	①	②	③	④	⑤
7. Wie stark glauben Sie daran, dass es ein Leben nach dem Tod gibt?—z. B. Unsterblichkeit der Seele, Auferstehung von den Toten oder Reinkarnation? (To what extent do you believe in an afterlife—e.g., immortality of the soul, resurrection of the dead or reincarnation?)	①	②	③	④	⑤
8. Wie wichtig ist Ihnen die Teilnahme an Gemeindeaktivitäten (z. B. Neunzehntagefeste, Feiertage, Andachten)? (How important is to take part in community activities [e.g., nineteen day feasts, holiday celebration, devotional meetings]?)	①	②	③	④	⑤
9. Wie wichtig ist für Sie das persönliche Gebet? (How important is personal prayer for you?)	①	②	③	④	⑤
9b. Wie wichtig ist für Sie Meditation? (How important is meditation for you?) *	①	②	③	④	⑤
12. Wie hoch ist Ihrer Ansicht nach die Wahrscheinlichkeit, dass es eine höhere Macht gibt? (In your opinion, how probable is it that a higher power really exists?)	①	②	③	④	⑤
13. Wie wichtig ist Ihnen die Verbindung zu einer religiösen Gemeinschaft? (How important is it for you to be connected to a religious community?)	①	②	③	④	⑤

**4. Wie häufig beten Sie? (How often do you pray?)**

<input type="radio"/> mehrmals am Tag	<input type="radio"/> etwa einmal am Tag	<input type="radio"/> mehrmals in der Woche	<input type="radio"/> etwa einmal in der Woche	<input type="radio"/> ein bis drei Mal pro Monat	<input type="radio"/> ein paar Mal im Jahr	<input type="radio"/> seltener als ein paar Mal im Jahr	<input type="radio"/> nie
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**4b. Wie häufig meditieren Sie? (How often do you meditate?) \***

<input type="radio"/> mehrmals am Tag	<input type="radio"/> etwa einmal am Tag	<input type="radio"/> mehrmals in der Woche	<input type="radio"/> etwa einmal in der Woche	<input type="radio"/> ein bis drei Mal pro Monat	<input type="radio"/> ein paar Mal im Jahr	<input type="radio"/> seltener als ein paar Mal im Jahr	<input type="radio"/> nie
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**3. Wie häufig nehmen Sie in der Regel an Gemeindeaktivitäten (z. B. Neunzehntagefeste, Feiertage, Andachten) teil? (How often do you take part in community activities [e.g., nineteen day feasts, holiday celebrations, devotional meetings]?)**

- mehrmals in der Woche    
  etwa einmal in der Woche    
  ein bis drei Mal pro Monat    
  ein paar Mal im Jahr    
  seltener als ein paar Mal im Jahr    
  nie

**Wie oft kommen die folgenden Ereignisse und Situationen bei Ihnen vor? (How often do you experience the following situations or events?)**

(Antworten Sie bitte ganz nach Ihrem Gefühl.)

**Wie oft ... (How often ...)**

	nie	selten	gelegentlich	oft	sehr oft
1. ... denken Sie über religiöse Fragen nach? (... do you think about religious issues?)	①	②	③	④	⑤
5. ... erleben Sie Situationen, in denen Sie das Gefühl haben, dass Gott oder etwas Göttliches ein Eingreifen in Ihr Leben zulässt? (... do you experience situations in which you have the feeling that God or something divine allows for an intervention in your life?)	①	②	③	④	⑤
5b. ... erleben Sie Situationen, in denen Sie das Gefühl haben, mit Allem Eins zu sein? (... do you experience situations in which you have the feeling that you are in one with all?) *	①	②	③	④	⑤
10. ... erleben Sie Situationen, in denen Sie das Gefühl haben, dass Gott oder etwas Göttliches Ihnen etwas mitteilen oder zeigen lässt? (... do you experience situations in which you have the feeling that God or something divine lets something be communicated or revealed to you?)	①	②	③	④	⑤
10b. ... erleben Sie Situationen, in denen Sie das Gefühl haben, dass Sie von einer göttlichen Kraft berührt werden? (... do you experience situations in which you have the feeling that you are touched by a divine power?) *	①	②	③	④	⑤
11. ... informieren Sie sich durch Radio, Fernsehen, Zeitschriften oder Bücher über religiöse Fragen? (... do you keep yourself informed about religious questions through radio, television, internet, newspapers, or books?)	①	②	③	④	⑤
14. ... richten Sie mitten in Ihrem Alltag ein kurzes Gebet an Gott? (... do you pray spontaneously when inspired by daily situations?)	①	②	③	④	⑤
14b. ... suchen Sie mitten in Ihrem Alltag Kontakt zu einer göttlichen Kraft? (... do you try to connect to the divine spontaneously when inspired by daily situations?) *	①	②	③	④	⑤
15. ... erleben Sie Situationen, in denen Sie das Gefühl haben, dass Gott oder etwas Göttliches anwesend ist? (... do you experience situations in which you have the feeling that God or something divine is present?)	①	②	③	④	⑤

\* These are the five additional items of the interreligious CRSi-20 by [Huber and Huber \(2012\)](#). Either the basic item (e.g., 4) or the corresponding item (e.g., 4b) is used with the higher score for every single individual "entering the total score" (p. 719).

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