



Religious Fundamentalism: 1 An Empirically Derived Construct and 2 Measurement Scale 3

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Summary 12

Items were generated to explore the factorial structure of a construct of fundamentalism worded 13
appropriately for Judaism, Christianity, and Islam. Results suggested three underlying dimen- 14
sions: (a) External versus Internal Authority, (b) Fixed versus Malleable Religion, and (c) Worldly 15
Rejection versus Worldly Affirmation. The three dimensions indicate that religious fundamen- 16
talism is a *personal orientation that asserts a supra-human locus of moral authority, context unbound 17
truth, and the appreciation of the sacred over the worldly components of experience.* The 15-item, 18
3-dimension solution was evaluated across Mexican ($n = 455$) and American ($n = 449$) samples. 19
Fit indexes point out the viability of the new inventory across these two samples henceforward 20
referred to as the Multi-Dimensional Fundamentalism Inventory (MDFI). Additional validity 21
tests supported that the new inventory was negatively correlated with participants' *integrative 22
complexity* in a religious domain-specific way. 23

Keywords 24

fundamentalism, psychometrics, psychology of religion, cross-cultural psychology, integrative 25
complexity, Mexico 26

Since its adoption from evangelical Protestantism, the construct of religious 27
fundamentalism has enjoyed great popularity, but at the same time it has 28
become a catch-all term not easily defined (Hill & Hood, 1999). For the 29
series of pamphlets that originated the term in its modern acceptance, *The 30*

1 *Fundamentals: A Testimony of Truth*, it meant identifying the essential nonne-
2 gotiable doctrine of Christianity in order to stop its erosion by liberal churches
3 and becoming consciously committed to defend it (Bosch, 1999). With the
4 publication of the fundamentals, a coalition of conservative forces in Ameri-
5 can Protestantism hoped that the concessions that the more liberal camps were
6 willing to make to scientific and specifically evolutionary theory and to a natu-
7 ralist approach to the study of the Bible would be rejected. The term was
8 later adopted by the social sciences to refer to the “family” of religious move-
9 ments—Christian and non-Christian—that seemed to be reacting or fighting
10 against the modernist ethos (Marty & Appleby, 1994).

11 In particular, throughout the last two centuries, and especially in the last
12 three decades since the rise of the postmodern mind-set, fundamentalist reli-
13 gion seems to be growing globally among diverse religious traditions (Marty &
14 Appleby, 1995). Fundamentalism can be thought of as the form that religion
15 takes when it becomes uncertain about itself. Uncertainty comes from two
16 main assaults: (a) the metaphysical reductionism and rationalism of scientific
17 materialism and (b) the uncommitted ideological condition of postmodernity.
18 Whereas scientific materialism denies the veracity of everything but matter
19 and its laws, and refutes the value of that which is not supported rationally and
20 empirically, postmodernity has loosened the bonds within human groups,
21 causing reality to be relative and context-dependent. As a result of the ratio-
22 nally materialist mind-set generated by modernity, the mythical dimension of
23 religion that had given meaning to existence and made death and suffering
24 bearable started to seem as a wishful fabrication to many. Moreover, the loos-
25 ening of human groups’ cohesion into individual mobile units, required by a
26 market economy, wounded the foundations necessary for meaning, resulting
27 at best in individual, partial, and malleable appraisals of the world (Hogg,
28 2004). Together, these two trends seem to have pierced the confidence with
29 which previous generations experienced their religious commitments, without
30 displacing the intense human yearning for meaning afforded by them.

31 Trends desiring to shield religion against the forces of scientific materialism
32 and postmodernism have sprang in Christianity, Judaism, Islam, Buddhism,
33 and even in Hinduism. Although human dependence on the mythical for
34 finding meaning seems not to have abated, as shown by the prevalence of
35 supra-rational beliefs (Stark & Finke, 2000), it seems that for many it has
36 become harder to be religious in a non-defensive way. A fundamentalist reli-
37 gious counterculture that virulently rejects all that is valued in modern human-
38 ist secularism has strengthened as a way to preserve belief systems that sustain
39 meaning-making. Fundamentalism is, at its core, a response to the absolutely

scientific claim to truth and to the relativism of moral belief systems characteristic of late modern global culture. 1
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Consequently, in the social sciences, religious fundamentalism has engaged 3
a lot of attention from researchers due to its far-reaching effects in the lives of 4
communities and individuals espousing it. Fundamentalism has been shown 5
to profoundly affect the intrapersonal and the interpersonal across religious 6
traditions (Hood, Hill, & Williamson, 2005; Marty & Appleby, 1995), and 7
thus several measurement scales with which to assess fundamentalism have 8
appeared in the literature. Out of the myriad of existing instruments, Hill and 9
Hood's (1999) *Measures of Religiosity* selected five religious fundamentalism 10
scales in wide use: 11

1. Religious Fundamentalism Scale (Martin & Westie, 1959; in Robinson 12
& Shaver, 1973); 13
2. Religious Fundamentalism Scale of the MMPI (Wiggins, 1966); 14
3. Fundamentalism Scale-Revised (Gorsuch & Smith, 1983); 15
4. Christian Fundamentalist Belief Scale (Gibson & Francis, 1996); 16
5. Religious Fundamentalism Scale (Altemeyer & Hunsberger, 1996). 17

A shorter version of Altemeyer and Hunsberger's scale has since been pub- 18
lished: 19

6. A Revised Religious Fundamentalism Scale: The Short and Sweet of It 20
(Altemeyer & Hunsberger, 2004). 21

Out of these major scales, Altemeyer's is by far the most cited and the only 22
one (after discontinuation of the Wiggins MMPI content scales from the sec- 23
ond revision of the inventory) aspiring to be useful for Christian and non- 24
Christian respondents. Consequently, our commentaries to the measurement 25
of the construct will be centered upon it, although they are relevant to most if 26
not to all of them. 27

Even after heeding the admonition in *Measures of Religiosity* on the prolif- 28
eration of redundant instruments (Hill & Hood, 1999), it seemed to us that 29
further research in order to come up with a measure of religious fundamen- 30
talism in its current broad multireligious cross-cultural phenomenon was war- 31
ranted because of two main issues: 32

- 1 1. Altemeyer's scale was developed for use with Christians and later
2 extended for use with other faith groups. Consequently, in its full ver-
3 sion the scale includes wording that is not appropriate for non-Christian
4 samples (e.g., "the diabolical Prince of Darkness") and makes the
5 unexamined assumption that Judaism, Christianity, and Islam are theo-
6 logically equivalent in regards to its item pool. Although Altemeyer rec-
7 ognizes the limitations of the scale for use with non-Christian samples,
8 his 1996 Toronto study reported adequate reliability with a religiously
9 diverse sample and its usefulness for the Abrahamic faiths. However, he
10 only interviewed 37 Jews and 21 Muslims (Altemeyer, 1996). Even con-
11 ceding that some data on non-Christians were collected and that reli-
12 ability was acceptable, the issue of face validity loss due to inappropriate
13 terms has not been addressed then or in more recent studies, and no input
14 from non-Christian religious experts has been sought (Altemeyer &
15 Hunsberger, 2004)—with the exception of a recent scale focusing on the
16 attitudes that fundamentalists take towards their sacred texts (William-
17 son, Hood, Ahmad, Sadiq, & Hill, 2010).
- 18 2. More importantly, none of the scales generated a large enough pool of
19 items to explore the structure of fundamentalism as a psychometric con-
20 struct and thus foreclosed the possibility of multidimensionality. Even
21 in the construction of Altemeyer's scale, a very focused a priori defini-
22 tion of what fundamentalism meant to the author was used to generate
23 28 items, out of which 20 were retained on the basis of homogeneity,
24 prior to a serious attempt to explore the possibility of multidimensionality
25 (except for the MMPI key criterion-based scale). The domains that
26 the items seemed to be tapping were almost exclusively literal reading
27 and inerrancy of Scripture and in-group preference. Commenting on
28 the problems of his 20-item scale, Altemeyer mentioned that at least half
29 of his 20 items tap into the "one true religion theme" (p. 50) to the
30 exclusion of other aspects of his definition of fundamentalism. Other
31 scales do not fare better. To the contrary, Gibson and Francis (1996) and
32 Martin and Westie (in Robinson & Shaver, 1973) did not investigate
33 multidimensionality at all and used Christian religious beliefs to infer
34 fundamentalism almost exclusively (Hill & Hood, 1999). Consequently,
35 existent scales left domains like the "negative" fundamentalist opposi-
36 tion to naturalistic rationality and individualistic moral self-reliance
37 unexplored or at best only alluded to in couched Christian particulars.

In light of this, we set out to accomplish two main objectives: 1

1. To generate a diverse pool of items that would allow the exploration of the dimensional structure of the construct. Establishing the dimensional structure of the construct is important psychometrically, but more importantly, it allows for distilling the construct's more general and lasting attitude system from the items' specific content (Ray, 1973). 2
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2. To have our items developed in conversation with religious experts from the three Abrahamic faiths that would ensure the face and construct validity of the scale. 7
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In order to generate a diverse pool of items that would capture the complexity and breadth of the phenomenon, which would allow the exploration of the construct's structure, we reviewed, among others, the collection of papers included in the Fundamentalism Project's volumes, representing a wide spectrum of movements across both Western and Eastern traditions. Out of this review, we identified seven areas symptomatic of the tension between traditional religiosity and modernity: 10
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1. Protection of revealed traditions versus rational criticism 17
2. Heteronomy versus autonomy and relativism 18
3. Traditionalism versus progressive religious change 19
4. Sacralization versus secularization of the public arena 20
5. Secular culture perceived as a threat versus secular culture embraced 21
6. Pluralism versus religious centrism 22
7. Millennial-Messianic imminence versus prophetic skepticism. 23

We then generated 8 items per each of these areas for a total pool of 56 items, 29 pro-trait and 27 counter-trait (see the Appendix), in order to explore the structure of the construct and integrate a viable scale. 24
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Items were written in both Spanish and English concurrently and were initially administered to a diverse sample of Mexican respondents and then administrated to a sample of American college students. Since the Mexican sample was more diverse and provisions were made to assure that a good spread in age and religiosity levels were achieved, the Mexican sample served to explore the construct's structure and adopt a solution, and the American sample served to support the generalizability of the adopted solution and to establish evidences of the instrument's validity. 27
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1 Thus, the usual process where items are developed for Western samples and
2 then expected to work for other non-Western samples was here exactly reversed;
3 rather, the pool was developed within a non-Eurocentric context with the aim
4 of being appropriate for religiously and culturally diverse populations. Conse-
5 quently, neither of the two versions went through a process resting on assump-
6 tions of cultural equivalence and invariance underpinning adaptation (Farh,
7 Cannella, & Lee, 2006).

8 **Study 1: Exploration of Structure and Adoption of Solution** 9 **(Mexican Sample)**

10 *Method*

11 *Participants*

12 Four hundred and sixty-eight respondents were recruited intentionally from
13 universities, religious study groups, and religious seminaries in Mexico City
14 with the objective of producing a maximally heterogeneous sample in regards
15 to religiosity level and religious affiliation, large enough to proceed with the
16 analysis. Several religious leaders and university lecturers who collaborated in
17 the study identified potential respondents in both universities and seminaries
18 and invited them to answer the questionnaire if they considered themselves
19 either Jewish, Christian, or Muslim. Eight respondents were deselected from
20 the analysis on the basis of not stating a religious affiliation. The final sample
21 of 458 respondents consisted of 340 females (74%) and 118 males (26%);
22 9% had not completed high school, 49% had completed high school, and
23 42% had a university degree. In regards to religious affiliation, 325 were Chris-
24 tian (75%), 91 were Jewish (21%), and 16 were Muslim (4%). Mean age was
25 27.21 years ($SD = 11.48$). Religiosity scale scores distribution did not present
26 a floor effect, confirming that the recruitment process achieved a good spread
27 in regards to religiosity levels.

28 *Instruments*

29 The 56 generated fundamentalism items (appendix) were randomized and set
30 in a 4-point Likert-type scale with (a) *totally agree*, (b) *agree*, (c) *disagree*, and
31 (d) *totally disagree* as response options.

32 A basic two-item religiosity Likert scale previously elaborated by one of the
33 authors shows reliability of .89 and evidence of validity (Liht, 2000):

- 1. How religious are you? 1
- 2. How well do you follow the precepts of your religion? 2
- A general demographic questionnaire constituted by 21 items. 3

Procedure 4

Religious leaders from the Jewish, Christian, and Muslim faiths examined the 56 items. Their observations were incorporated, and the items that were regarded inappropriate were deselected. 5
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Potential participants were invited to respond to the questionnaire and were informed that participation was voluntary and that the only requisite for participating was considering oneself to be Jewish, Christian, or Muslim. Standard instructions indicating that the respondents should try to mark all statements with the option that best described their own opinion were included. The anonymity and confidentiality of responses were assured. Fundamentalism items were placed together with questions regarding religious affiliation, religiosity level, age, sex, and educational level. All items were administered in Spanish. Response time averaged 15 minutes. E-mail addresses were kept in a separate record in order to send the study's results to individuals that desired to receive them. 8
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Results 19

Preliminary Analyses 20

The 2-item religiosity scale showed internal consistency levels of alpha = .81. 21

Exploratory Solution 22

A principal components analysis was conducted on the fundamentalism items. The scree plot generated indicated a three-factor solution. A solution was extracted imposing a three-component structure and was rotated with the Oblimin method. The resulting solution was deemed interpretable, and components were labeled: 23
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- I. External versus Internal Authority 28
- II. Fixed versus Malleable Religion 29
- III. Worldly Rejection versus Worldly Affirmation. 30

1 A third rotation was run with the five items that seemed to best represent each
 2 of the three identified dimensions, resulting in three factors with eigenvalues
 3 above 1, which altogether explained 53% of the total variance. Further trials
 4 to eliminate contamination were conducted, resulting in a final three-compo-
 5 nent, 5-item-per-component (subscale) solution that maintained 53% of the
 6 total variance (Table 1).

Table 1. Multi-Dimensional Fundamentalism Inventory Rotated
 Component Structure ($N = 458$)

Item	Components		
	<i>EA</i>	<i>Fixed</i>	<i>WR</i>
Not all aspects of my life are imbued with religion. (C)	.730		
Religion should be left out of public matters. (C)	.723		
Human reason, and not religious belief, is the best guiding light for human action. (C)	.683		
Obeying God is the most important ingredient in order to grow as a person. (P)	.640		
I admire those who leave their ideas behind and submit to God's will. (P)	.601		
My religion should renew constantly. (C)		-.882	
As society changes, religion should change too. (C)		-.783	
My religion should adapt to the conditions of the modern world. (C)		-.691	
True religion never changes. (P)		-.615	
Women should be able to occupy any leadership position in my religious organization. (C)		-.583	.304
Most people would come to accept my religion if they would not be blinded with strange ideas. (P)			.719
People of religions other than mine are missing in regards to their potential to grow. (P)			.580
It is important to distance oneself from movies, radio, and TV. (P)			.568
The issues that I care the most when I vote are religious ones. (P)	.304		.556
All art should be put in the service of God. (P)	.333		.526

Note. Extraction method: principal component analysis. Rotation method: Oblimin with Kaiser normalization. Loadings below .30 were deleted. EA = External versus Internal Authority; Fixed = Fixed versus Malleable Religion; WR = Worldly Rejection versus Worldly Affirmation; P = Pro-Trait; C = Counter-Trait.

Confirmatory Analysis

A CFA was run with the concluding solution to assess the covariances model fit. Analyses indicated statistically significant estimates for all relationships and variances. Overall model fit (CFI = .95; NFI = .91; IFI = .948; GFI = .95; AGFI = .931) and parsimony (RMSEA = .05) supported the adopted solution. A one-dimensional solution for the 15 indicators rendered a much lower fit (CFI = .80; NFI = .76; IFI = .80; GFI = .85; AGFI = .79; RMSEA = .10) than the correlated three latent variable solution and was indicative of the theoretical superiority of a three-dimensional (versus a one-dimensional) fundamentalism construct. Nevertheless, subscale bivariate rough scores correlations indicated the feasibility of aggregating the three subscales into a global fundamentalism scale: $r = .52$ (External versus Internal Authority and Worldly Rejection versus Worldly Affirmation), $r = .50$ (Fixed versus Malleable Religion and Rejection versus Worldly Affirmation), and $r = .51$ (External versus Internal Authority and Fixed versus Malleable Religion). A solution in which all pro-trait items and all counter-trait items were aggregated into two separate correlated latent variables was also examined and deemed far inferior to the three-dimensional solution (CFI = .63; NFI = .60; IFI = .63; GFI = .70; AGFI = .84; RMSEA = .13). Reliability and descriptive analyses for the global and component scales are presented in Table 2. Results for the Kolmogorov-Smirnov test for the 15-item aggregated global scale indicated normality ($D = .043$; $p = .06$). Both age and gender effects were found for the global 15-item scale. Older respondents presented higher levels of fundamentalism ($r[359] = .33$, $p = .001$) and women ($M = 32.04$, $SD = 8.01$) showed lower levels of fundamentalism than men ($M = 35.13$, $SD = 7.38$; $t[357] = 3.30$, $p = .001$). Henceforth, we refer to the 15-item aggregated scale as the Multi-Dimensional Fundamentalism Inventory (MDFI).

Table 2. Global Multi-Dimensional Fundamentalism Inventory and Subscales Internal Consistency and Descriptives (Mexican sample; $N = 458$)

Component	α	M	SD
I. External versus Internal Authority	.78	11.80	3.56
II. Fixed versus Malleable Religion	.81	11.04	3.75
III. Worldly Rejection versus Worldly Affirmation	.65	08.94	2.76
MDFI Scale (Total)	.86	31.78	8.31

1 **Study 2: Support and Cross-Cultural Validity of Three-Dimensional**
2 **Solution (American Sample)**

3 *Overview*

4 Study 1 developed a fundamentalism questionnaire within one cultural con-
5 text. This questionnaire showed a solid factor structure and overall good psy-
6 chometric properties. Study 2 had a threefold purpose:

- 7 1. To confirm the three-factor structure in a different cultural context, thus
8 offering evidence for the cross-cultural validity of the MDFI and its
9 three dimensions.
- 10 2. To provide additional validity of the scale by showing its relationship
11 with other related constructs. Of particular interest was its relationship
12 to the well-validated measurement of the complexity of thinking known
13 as *integrative complexity*.
- 14 3. To show a relationship between the MDFI and integrative complexity
15 that is not accounted for by political conservatism, thus illustrating the
16 construct's discriminant validity (i.e., showing it is not capitalizing on
17 "generic" variance between conservative and liberal persons more gener-
18 ally, but rather exhibits properties specific to *religious* fundamentalism).

19 *Method*

20 *Participants*

21 Seven hundred and seven undergraduates at the University of Montana par-
22 ticipated for course credit. Because of the specific nature of the primary scale
23 under examination, only those participants who indicated that they were a
24 member of one of the three major monotheistic religions (Judaism, Islam,
25 Christianity) were included in the final analyses ($N = 448$). The final sample
26 consisted of 273 females (61%) and 169 males (38%; 6 unreported). In regards
27 to religious affiliation, 432 were Christian (96%), 7 were Jews (2%), and
28 9 were Muslim (2%). Mean age was 19.94 years ($SD = 4.27$).

29 *Instruments and Procedure*

30 *Exploratory Item Set*

31 All participants completed the 56 generated fundamentalism items (appen-
32 dix), translated into English by the first author. Of particular interest were the

15 items included in the final MDFI from the Mexican sample (5 from each of the three factors). Other than language (English versus Spanish), only one small difference existed between the two samples' items: The original Spanish version was on a 4-point rating scale, while the English version was presented on a 5-point rating scale (1 = *totally disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, and 5 = *totally agree*). As seen below, this minor difference did not matter to the factor structure.

Integrative Complexity

A further goal of Study 2 was to establish the validity of the MDFI by showing an expected relationship with a relevant construct that is not accounted for by related ideology measures. The primary measure of interest here was the well-established measure known as *integrative complexity*. Integrative complexity, a construct largely the result of the efforts of Peter Suedfeld (see, e.g., Suedfeld, Tetlock, & Streufert, 1992), is a measure of an individual's ability to differentiate multiple dimensions relevant to a given topic and then integrate those dimensions into a hierarchical structure. Fundamentalists in the current conceptualization believe in context-unbound truth and emphasize the dominance of one rigid perspective, things that are often the marker of simple black/white thinking. As a result, we expected that persons scoring high on the MDFI would exhibit less complexity. However, we also expected this to be especially (and perhaps only) for specifically religious topics. Complexity is often domain-specific (see Conway, Dodds, Towgood, McClure, & Olson, 2011; Conway, Schaller, Tweed, & Hallet, 2001; Pancer, Jackson, Hunsberger, Pratt, & Lea, 1995), and fundamentalism ought to inspire rigid thinking especially on religious topics. Indeed, previous work on the related construct of religious orthodoxy suggests that complexity is domain-specific, with orthodox participants showing less complexity on religious questions, but equal complexity on social/political questions (Pancer, Jackson, Hunsberger, Pratt, & Lea, 1995). Thus, it would be particularly compelling evidence for the scale if the MDFI was negatively correlated with complexity for religious topics, but less so (or not at all) for nonreligious topics.

Although integrative complexity is often scored for archival materials of historical interest (e.g., Conway et al., in press; Conway, Suedfeld, & Clements, 2003; Conway, Suedfeld, & Tetlock, 2001; Liht, Suedfeld, & Krawczyk, 2005; Smith, Suedfeld, Conway, & Winter, 2008; Thoemmes & Conway, 2007), it is also commonly scored for materials generated in the laboratory (e.g., Conway et al., 2008; Conway, Dodds, Towgood, McClure, & Olson, 2011; see Suedfeld, Tetlock, & Streufert, 1992, for a review). In the present study, we

1 presented participants with one of 12 different opinion stems dealing with
 2 political topics (refugee status, death penalty) to social topics (sex outside of
 3 marriage, drinking alcohol, smoking) to religious topics. Although we present
 4 analyses for all topics, the domain-specificity of complex thinking (see Conway,
 5 Dodds, Towgood, McClure, & Olson, 2011; Conway, Schaller, Tweed, &
 6 Hallet, 2001; Pancer, Jackson, Hunsberger, Pratt, & Lea, 1995) suggests that
 7 the effects of fundamentalism on complex thinking ought to be strongest for
 8 the two specifically religious opinion stems: "Bible truth" and "A person can
 9 live a good enough life without religion." Thus, we focus our analyses on reli-
 10 gious versus non-religious topics.

11 For these *integrative complexity* analyses, participants' responses were dis-
 12 carded when they clearly did not understand the question or wrote illegible or
 13 incomprehensible remarks. This left 388 coded responses for analyses. This
 14 included persons who indicated Christianity as their primary religion ($n = 374$)
 15 as well as persons who indicated one of the other two major monotheistic
 16 religions ($n = 14$), but excluded persons with no religion.

17 Integrative complexity was coded by four trained scorers, and the average of
 18 the four coders' scores was used in final analyses. Inter-rater reliability was
 19 satisfactory ($\alpha = .80$).

20 *Political Ideology*

21 In addition, all participants completed a short political opinion questionnaire
 22 consisting of four items. Two of these items were continuous measurements of
 23 how conservative or liberal participants were and were anchored by *liberal* and
 24 *conservative* and *Democrat* and *Republican*. These two items were averaged to
 25 create an index of *political conservatism* ($\alpha = .90$).

26 *Other Measures Given to a Subsample*

27 In order to establish convergent and discriminant validity, a subsample of par-
 28 ticipants ($N = 49$) also completed a larger battery of questionnaires. Three of
 29 these pertained to religion directly: the Quest Scale (Batson & Schoenrade,
 30 1991), the Extrinsic Religion Scale, and the Extrinsic Religion Scale (Batson,
 31 Schoenrade, & Ventis, 1993). One pertained to social, personal, and cultural
 32 identity more broadly (the Aspects of Identity Questionnaire; Cheek & Tropp,
 33 1994). Because the three identity scales in the Aspects of Identity Question-
 34 naire tend to each be highly positively correlated with each other, these scores
 35 were ipsatized (each person's score on a given scale was subtracted from the
 36 total mean of all three scales). The resulting score for each scale thus reflects a

person's *relative* preference for that identity type compared to the other two. A final questionnaire, the Need for Structure Questionnaire (Thompson, Naccarato, & Parker, 1992; Neuberg & Newsom, 1993), pertained to information processing aspects that might be relevant to fundamentalism.

Results

Reliability and Descriptives

The internal consistency alpha, mean, and standard deviation for each dimension of the American data for the adopted solution are presented in Table 3. A visual inspection of the scores' distribution for the 15-item aggregated MDFI indicated normality although results for the Kolmogorov–Smirnov test ($D = .045$; $p = .03$) were significant.

MDFI Confirmatory Analysis (American Sample)

In order support the generalizability of the solution adopted for the Mexican sample, the American sample data were tested with the solution adopted for the Mexican sample (three correlated latent variables made of the same indicators). Fit indices (CFI = .93; NFI = .90; IFI = .93; GFI = .95; AGFI = .93) and parsimony (RMSEA = .06) indicated the high generalizability of the solution adopted from the Mexican data and its transferability to the American data.

Initial Evidence for Validity

Initial evidence suggests that the overall 15-item MDFI is correlated appropriately with other constructs (see Table 4). The MDFI was correlated negatively

Table 3. Global Multi-Dimensional Fundamentalism Inventory and Subscales Internal Consistency and Descriptives (American sample; $N = 448$)

Component	α	M	SD
I. External versus Internal Authority	.77	14.16	4.15
II. Fixed versus Malleable Religion	.68	14.73	3.77
III. Worldly Rejection versus Worldly Affirmation	.66	11.01	3.28
MDFI Scale (Total)	.85	39.90	9.33

Table 4. Correlation between Religious Fundamentalism and Validity Scales ($N = 49$)

Topic Domain (n)	MDFI	EA	Fixed	WR
Quest	-.41**	-.20	-.53***	-.27 [^]
Quest-SC	-.40**	-.21 [^]	-.48***	-.29*
Quest-OP	-.36*	-.22 [^]	-.42**	-.23 [^]
Quest-EX	-.11	.00	-.23 [^]	-.04
Intrinsic Religiosity	.59***	.59***	.36*	.54***
Extrinsic Religiosity	-.19	-.27 [^]	-.13	-.05
Social Identity	-.33*	-.34*	-.19	-.32*
Personal Identity	-.22 [^]	-.14	-.20	-.22 [^]
Collective Identity	.50***	.44**	.35*	.49***
Need for Structure	-.03	-.06	.07	-.10

Note. All tests are two-tailed. Quest-SC = Self-Criticism/acceptance of religious doubt. Quest-OP = Openness to change. Quest-EX = Willingness to face existential questions without reducing complexity. EA = External versus Internal Authority; Fixed = Fixed versus Malleable Religion; WR = Worldly Rejection versus Worldly Affirmation.

*** $p < .001$. ** $p < .01$. * $p < .05$. [^] $p < .15$.

1 with participants viewing religion as a quest ($r[49] = -.41, p = .003$). Of the
 2 Quest subscales, both the Self-Criticism and Openness to Change subscales
 3 were negatively correlated with the MDFI ($p < .01$); however, the subscale
 4 dealing with participants' willingness to face existential questions in a complex
 5 manner was not correlated ($r[49] = -.11, p = .434$). The MDFI was also posi-
 6 tively correlated with intrinsic religiosity ($r[49] = .59, p < .001$), and largely
 7 uncorrelated (and if anything negatively correlated) with extrinsic religiosity
 8 ($r[49] = -.19, p = .181$). Thus, the picture of the fundamentalist that emerges
 9 from these data is consistent with the current view: It is a person who takes his
 10 or her own religion personally, does *not* care for the pragmatic value of reli-
 11 gion, and also does not view religion as a quest to be gained. Instead, the
 12 fundamentalist is the person who has internalized his or her religious beliefs so
 13 that those beliefs no longer need to be challenged (no "quest" necessary) and
 14 so that external rewards are not relevant.

15 A similar story emerges from examining the broader aspects of identity.
 16 Fundamentalists on the MDFI care little for the purely social aspects of iden-
 17 tity (how they act around others, their physical appearance, etc.; fundamen-
 18 talism-social identity $r[49] = -.33, p = .019$). They also (descriptively speaking)
 19 show less concern for the purely personal aspects of their identity, although

this correlation was only marginally significant ($r[49] = -.22, p = .132$). However, persons high on the MDFI show a strong relative preference for the collective aspects of their identity, such as religion and community ($r[49] = .50, p < .001$). This again suggests someone who eschews superficial social or personal concerns in favor of a collectively shared (but personally internalized) ideology.

The only surprising non-effect was personal need for structure: It was expected that fundamentalists would show a higher preference for a simple structure. However, no correlation emerged between need for structure and the MDFI ($r[49] = -.03, p = .861$). Thus, fundamentalists showed neither a preference for nor an aversion to simple cognitive structures. It is worth commenting that this may be a result of the domain specificity of complex (versus simple) thinking. The Personal Need for Structure (PNS) measure is a domain-general measure, and the desire for simplicity amongst fundamentalists may be domain-specific. We turn to more domain-specific analyses of complex thinking a little later.

Subscale Analyses

We also performed analyses on the three subscales of the MDFI. While the direction of results was generally the same across the different dimensions of the MDFI, some notable differences in the pattern emerged. In particular, the negative relationship between Quest motive and Fundamentalism was clearly mostly driven by the Fixed/Malleable dimension ($r[49] = -.53, p < .001$; other two dimensions $r^2[49] = -.20$ and $-.27$; see Table 4). A Steiger's Z test for comparing correlated correlations (see Meng, Rosenthal, & Rubin, 1992; Steiger, 1980) suggested that the Fixed/Malleable dimension was significantly more predictive of complexity than both the External Authority (EA) dimension ($Z = 2.53, n = 49, p = .012$) and the Worldly Rejection (WR) dimension ($Z = 2.02, n = 49, p = .043$). In other words, it is the fact that fundamentalists have a fixed view of their religion, and not (as much) that they desire to reject the world and believe in external authority, that causes them to reject a more-flexible quest approach to religion.

On the flip side, although all three dimensions were significantly correlated with intrinsic religion, this effect was stronger for both EA and WR than for the Fixed/Malleable dimension. A Steiger's Z comparing the EA effect with the fixed/malleable effect was marginally significant ($Z = 1.93, n = 49, p = .053$). A similar but inferentially weaker pattern emerged for the Aspects of Identity scales, with the EA and WR dimension showing more predictive validity for both Collective Identity (positive correlations) and Social Identity (negative

1 correlations) than the Fixed/Malleable dimension; however, Steiger's *Z* tests
 2 were not significant (*Z*'s < 1.1, *p*'s > .280).

3 Overall, this pattern of results provides some modest differential validity for
 4 the subscales of the MDFI. The Fixed dimension appears more predictive of
 5 an anti-Quest approach to religion than the other two dimensions; whereas
 6 Worldly Rejection and External Authority appear more indicative of an Intrinsic
 7 and Collective approach to religion that eschews purely social and extrinsic
 8 aspects of religion and identity (see Table 4).

9 *Fundamentalism and Integrative Complexity*

10 As Table 5 reveals, higher fundamentalism resulted in lower complexity scores,
 11 but this effect was only in evidence for clearly religious topics (religious topics
 12 $r[49] = -.32, p = .002$; non-religious topics $r[49] = .02, p = .800$).

13 We further performed a regression analyses where topic type (-1 = non-
 14 religion, +1 = religion), fundamentalism (standardized), and a fundamentalism
 15 X topic-type interaction term were entered as predictors of complexity. This
 16 analysis revealed a type of topic X fundamentalism interaction: Persons
 17 high in fundamentalism were lower in complexity on religious topics, but this
 18 relationship did not exist for nonreligious topics (interaction standardized
 19 beta = -.15, *p* = .007).

20 Importantly, the effect of fundamentalism on complexity for religious topics
 21 was not accounted for by political conservatism (fundamentalism-complexity
 22 correlation controlling for conservatism partial $r[49] = -.28, p = .011$).

23 *Subscale Analyses*

24 It is worth noting that the key inverse relationship between complexity and
 25 fundamentalism for religious topics was more in evidence for the malleable

Table 5. Correlation between Religious Fundamentalism and Integrative Complexity by Topic Type (*N* = 49)

Topic Domain (<i>n</i>)	MDFI	EA	Fixed	WR
All Topics (388)	-.05	-.02	-.04	-.08 [^]
Religious Topics (89)	-.32 ^{**}	-.20 [^]	-.33 ^{**}	-.25 [*]
Nonreligious Topics (299)	.02	.04	.03	-.03

Note. All tests are two-tailed. EA = External versus Internal Authority; Fixed = Fixed versus Malleable Religion; WR = Worldly Rejection versus Worldly Affirmation.

^{***} *p* < .001. ^{**} *p* < .01. ^{*} *p* < .05. [^] *p* < .15.

versus fixed dimension than the other two dimensions (see Table 5). This result parallels the result from the Quest scale. Although a Steiger's Z test for comparing correlated correlations did not attain statistical significance when comparing the fixed/malleable effect ($r[49] = -.33, p = .002$) with the external authority effect ($r[49] = -.20, p = .058$; Steiger's $Z = 1.15, n = 49, p = .250$), this pattern is at least consistent with the idea that the dimensions are picking up on different things in a sensible manner. It is also consistent with the larger picture emerging from the other subscale analyses (e.g., significant differential validity results on the Quest scale) that the Fixed/Malleable dimension is capturing more of an opposition to religious flexibility than the other two dimensions (which would explain why it would most likely be more negatively correlated with complexity for religious beliefs than the other two dimensions).

Discussion

Cross-Cultural Validation and its Importance

The present study contributes to the evidence that religious fundamentalism has some pan-cultural properties (Williamson, Hood, Ahmad, Sadiq, & Hill, 2010). Given the strong cultural differences between the two cultures under scrutiny here (see, e.g., Freeberg & Stein, 1996; Hofstede, 1980), such a demonstration should by no means be taken lightly. Although sharing a large boundary, few would argue that Mexico and the United States represent very similar cultural worlds. (This is especially the case as the two specific locales of the present project—Mexico City and Missoula, Montana—are very far removed from the Mexico-U.S. border). In addition to the extremely large demographic, economic, and ethnic differences, Mexico is much more Catholic in religious orientation while the United States is comparatively more Protestant. Further, Mexico is more collectivistic than the United States (see, e.g., Freeberg & Stein, 1996; Hofstede, 1980). As a result, the present study offers an opportunity to study fundamentalism in two very diverse cultural contexts.

Indeed, the present work is particularly unique in the cross-cultural literature in one additional regard. Much has been made of the Eurocentric influence in psychology (see, e.g., Bond, 1988; Hofer, Chasiotis, Friedlemeier, Busch, & Campos, 2005). In particular, the typical cross-cultural research paradigm takes an established questionnaire developed in a primarily Eurocentric cultural context and then applies that measure/theory in a different

1 context (see, e.g., Hofer, Chasiotis, Friedlemeier, Busch, & Campos, 2005).
2 The present study, in contrast, did exactly the reverse: It developed a question-
3 naire (the Multi-Dimensional Fundamentalism Inventory; MDFI) in a Mexi-
4 can context, in conjunction with Mexican religious leaders, and then applied
5 that questionnaire in a typical Eurocentric context. Study 2 validates the use-
6 fulness of such an enterprise, and we hope this effort will inspire future research-
7 ers to continue this important balancing of the previous Eurocentric bias.

8 The items in the scale here presented were written out of a thorough revision
9 of research reports on an ample number of religious traditions (Marty &
10 Appleby, 1991, 1994, 1995; Mardones, 1999), which were then revised by
11 experts in Jewish, Christian, and Muslim traditions. Moreover, the present
12 sample of respondents was constituted by a majority of individuals with at
13 least moderate religious commitment belonging to a diversity of traditions.
14 Obtained results indicate that the scale has a high degree of generalizability
15 across linguistically and culturally diverse samples and across Catholic and
16 Protestant respondents.

17 *Fundamentalism and Integrative Complexity*

18 The present work also validated the Fundamentalism scale by showing it has
19 expected relationships with other variables. Of particular interest was integra-
20 tive complexity. Fundamentalism showed a negative relationship with integra-
21 tive complexity, but, as expected, this relationship only occurred for religious
22 topics. Although the domain-specificity of complexity is not a new finding,
23 that very fact validates the usefulness of the current fundamentalism construct:
24 It shows that the scale shows the specific properties that one would expect.

25 *Subscales and Factorial Structure*

26 Set heterogeneity and confirmatory analyses indicate that a three-dimensional
27 construct of fundamentalism is viable for the Mexican and American samples
28 and for the development of a preliminary theory of fundamentalism. Not-
29 withstanding marginal reliability in the third dimension, it is worth noting
30 that this dimensional structure is unique—no other scale has shown more
31 than one dimension. Given the more complex and in-depth approach used in
32 scale development in the present research, this is hardly surprising; however, it
33 emphasizes the unique usefulness of the present approach to scale construc-
34 tion and theory development.

35 The first dimension, labeled External versus Internal Authority, tapped an
36 attitude continuum in which at one extreme the individual believes that for

his or her actions to be moral and correct they should be based on God's authority, religion being an overwhelmingly present force in his or her life. In the opposite end of the continuum, the person perceives that the compass for morality should be placed individually and internally to be legitimately attributable to him- or herself, experiencing religion as a bounded force with limited influence over his or her person. This dimension could be linked to previous findings indicating a relationship between fundamentalism and authoritarianism (Hunsberger, 1996).

The second dimension, labeled Fixed versus Malleable Religion, tapped the attitude continuum in which at one extreme the individual believes that religious tradition is a *given* that exists independent of historical and cultural conditions, which should be considered as mere accidents without bearing on how one should direct his or her actions. On the other extreme, handed down religious tradition is considered as relative to particular historical and cultural conditions that have little importance for different contexts commanding a reinterpretation and recreation of religious conventions of the past.

The third dimension, labeled Worldly Rejection versus Worldly Affirmation, tapped the continuum at which on the one hand the value of the natural world, science, secular culture, and human diversity is experienced as minute in comparison to an otherworldly sacred dimension of existence; on the other extreme, a worldly approach prevails. Items that affirmed an imminent end of the world brought by God's intervention loaded in this factor but were later considered inappropriate for Muslim respondents. This dimension seems to map into research that has highlighted the continuum of worldly rejection and worldly affirmation across religious movements (Wallis, 1984).

Notably, in addition to the factor structure supporting a three-factor model, some modest differential validity evidence emerged for considering the scale as a three-factor model. Most notably, the Quest scale was significantly negative, predicted only by the Fixed/Malleable dimension. This not only helps demonstrate the importance of the subscales; it might also help explain prior work on fundamentalism. In particular, the negative association between fundamentalism and questing (McFarland & Warren, 1992; Batson, Denton, & Vollmecke, 2008) might be tapping into the fixed nature of religion that the fundamentalist viewpoint espouses as shown in this dimension (and not other aspects of fundamentalism).

Indeed, this particular finding might help us better understand current debates surrounding the relationship between fundamentalism and questing. Batson, Denton, and Vollmecke (2008, page 137), in criticizing past work showing what they deemed an overly strong (-.79) negative relationship

1 between Altemeyer and Hunsberger's Balanced Quest scale and fundamental-
2 ism, said: "Anti-fundamentalism should not, however, be confused or equated
3 with the open-minded, searching approach to religion described as a quest
4 orientation." They then proceed to show that their Quest scale shows a more
5 modest (-.40) relationship with Altemeyer's Fundamentalism scale. Our own
6 work shows an almost-identical Quest-Fundamentalism relationship (-.41),
7 yet it helps us understand why this relationship may exist. In some sense, part
8 of fundamentalism does involve an anti-quest orientation—the part that
9 focuses on the fixed nature of religion. Yet, what Batson, Denton, and
10 Vollmecke (2008) suggest about fundamentalism in general our work also
11 suggests in a much more dimension-specific way: Other dimensions that
12 underlie fundamentalism are not nearly as negatively related (or not related at
13 all) with a Quest orientation.

14 *Limitations of the Present Study*

15 Further evidence on the degree of the scale's pertinence for Jews and
16 Muslims—pending obtaining larger samples within these populations—is still
17 warranted. It is especially noteworthy that the sample of Muslims in this pres-
18 ent work is very small, and thus, although the items were developed to be face
19 valid for Islam, we cannot make any strong claims about its usage for that
20 sample.

21 In addition, the lower reliability for the Worldly Rejection dimension
22 obtained in both Mexican and U.S. samples indicates that this subscale might
23 be tapping a more complex construct, which might need a larger amount of
24 items—in contrast with the other two dimensions—to be reliably assessed.
25 Although combinations of more than five items were tried with the initial pool
26 of items for this dimension, the increase in reliability was not considerable
27 (below .7) to warrant a larger subscale. Nevertheless, further evidence of low
28 reliability in future samples could strengthen the need for developing a larger
29 pool of items to be tested in order to improve this particular dimension.

30 Lastly, due to the size and homogeneity of the student sample used to
31 provide some initial validation evidence for the global scale and subscales,
32 further support of our validity claims is highly desirable. The validity analyses
33 presented herein should be taken cautiously until further evidence can be
34 accumulated.

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1 **Appendix**

2 *Exploratory Item Set*

- 3 1. Protection of revealed traditions versus rational criticism
 4 1.1. The idea that humans evolved from an inferior species rejects God's revealed truth. (P)
 5 1.2. I believe the world came to be in six days of 24 hours each. (P)
 6 1.3. The notion that the universe has existed for billions of years is simply incorrect. (P)
 7 1.4. If science contradicts my faith, I would accept scientific knowledge. (C)
 8 1.5. Scientific knowledge amounts to little in comparison to the truth present in my reli-
 9 gion's holy books. (P)
 10 1.6. The best way for humans to live is when reason is given primacy over beliefs. (C)
 11 1.7. Human reason is the best guiding light for human action. (C)
 12 1.8. I do not agree with all that is written in my religion's holy books. (C)
 13 2. Heteronomy versus autonomy and relativism
 14 2.1. Obeying God is the most important ingredient in order to grow as a person. (P)
 15 2.2. I admire those who leave their ideas behind and surrender to God's will. (P)
 16 2.3. What is good and what is bad is relative to time and place. (C)
 17 2.4. To truly approach God one has to submit rather than ponder. (C)
 18 2.5. Questioning religious beliefs is a healthy attitude to take. (C)
 19 2.6. Humans get lost without divine guidance. (P)
 20 2.7. People should take on from religion just what they find true to themselves. (C)
 21 2.8. I can hardly think of being of enough stature for adding to my religion's teachings. (P)
 22 3. Traditionalism versus progressive religious change
 23 3.1. True religion hardly changes. (P)
 24 3.2. Women should be able to occupy any position in my religious organization. (C)
 25 3.3. God desires women to be homemakers and pillars of the family. (P)
 26 3.4. God desires men to be their families' providers. (P)
 27 3.5. Changing rituals only devalues my religion. (P)
 28 3.6. As society changes, religion should change too. (C)
 29 3.7. My religion should renew constantly. (C)
 30 3.8. My religion should adapt to the world's demands. (C)
 31 4. Sacralization versus secularization of the public arena
 32 4.1. A governments' policies should be based on reason rather than on belief. (C)
 33 4.2. Religion should be left out of public matters. (C)
 34 4.3. Matters of faith should not be kept private. (P)
 35 4.4. Religion should not inform political decisions. (C)
 36 4.5. The issues that I care the most when I vote are religious ones. (P)
 37 4.6. I talk about religion in all possible circumstances. (P)
 38 4.7. All art should be put in the service of God. (P)
 39 4.8. Not all aspects of my life are imbued with religion. (C)
 40 5. Secular culture perceived as a threat versus embrace of secular culture
 41 5.1. I do not need to protect my beliefs from being influence by others. (C)
 42 5.2. Modern culture is not hostile to my beliefs. (C)
 43 5.3. It is important to distance oneself from movies, radio, and TV. (P)
 44 5.4. One should be careful in not leaving an open door to outside moral influences. (P)
 45 5.5. It is important to be ever mindful of the corrupting nature of today's society. (P)
 46 5.6. Not all that one reads should be necessarily congruent with one's religious beliefs. (C)

5.7. I do not think it is necessary to keep modern culture at bay. (C)	1
5.8. Secular culture can be toxic to the soul. (P)	2
6. Pluralism versus religious centrism	3
6.1. Religions other than mine are half-truths at best. (P)	4
6.2. I think one should congratulate people from other religions during their holidays. (C)	5
6.3. It is good that different (mark your group) Jews, Christians, Muslims, have different forms of (mark your religion) Judaism, Christianity, Islam, to suit them. (C)	6
6.4. People of religions other than mine are missing in regards to their potential to grow. (P)	8
6.5. Most people would come to accept my religion if they would not be blinded with strange ideas. (P)	9
6.6. At the core, all religions teach a similar message. (C)	10
6.7. Many of those who call themselves (mark your group) Christians, Muslims, Jews are truly not. (P)	11
6.8. Not all who think of themselves followers of (mark your religion) Islam, Judaism, Christianity are being true (mark your group) Muslims, Jews, Christians. (P)	12
7. Millennial-Messianic imminence versus prophetic skepticism	13
7.1. I cannot see the world coming to be the way the prophets have foretold it would be. (C)	14
7.2. The events of the world have little to do with what has been prophesied in Scripture. (C)	15
7.3. I do not see prophesies coming to fulfillment. (C)	16
7.4. It is hard to know how much longer will it take for history to come to its end. (C)	17
7.5. God will soon reveal his mastery over creation. (P)	18
7.6. God will soon right all wrongs. (P)	19
7.7. God will soon straighten his creation. (P)	20
7.8. God will soon intervene to bring about the end of times. (P)	21
Note: P = Pro-Trait, C = Counter-Trait	22
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