

How does one become spiritual? The Spiritual Modeling Inventory of Life Environments (SMILE)

Doug Oman^{a*}, Carl Thoresen^b, Park Crystal^c, Phillip Shaver^d, Ralph Hood^e
and Thomas Plante^f

^a50 University Hall, MC#7360, Berkeley, CA 94720–7360, USA; ^bStanford University, Stanford, CA, USA; ^cAddress to be supplied; ^dDepartment of Psychology, University of California, Davis, CA 95616–8686, USA; ^eDepartment of Psychology, University of Tennessee at Chattanooga, 615 McCallie Avenue, Chattanooga, TN 37403, USA; ^fDepartment of Psychology, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053–0333, USA

(Received in final version 28 November 2008)

We report psychometric properties, correlates, and underlying theory of the Spiritual Modeling Index of Life Environments (SMILE), a measure of perceptions of spiritual models, defined as everyday and prominent people who have functioned for respondents as exemplars of spiritual qualities, such as compassion, self-control, or faith. Demographic, spiritual, and personality correlates were examined in an ethnically diverse sample of college students from California, Connecticut, and Tennessee ($N = 1010$). A summary measure of model influence was constructed from perceived models within family, school, religious organization, and among prominent individuals from both tradition and media. The SMILE, based on concepts from Bandura's (1986) Social Cognitive Theory, was well-received by respondents. The summary measure demonstrated good 7-week test–retest reliability ($r = 0.83$); patterns of correlation supporting convergent, divergent, and criterion-related validity; demographic differences in expected directions; and substantial individual heterogeneity. Implications are discussed for further research and for pastoral, educational, and health-focused interventions.

Keywords: spirituality; religion; social cognitive theory; measurement; validity; health promotion; education

Introduction

Throughout history, religious traditions have emphasized the importance of keeping company and attending to the example of good or holy persons, arguing that people tend to become more like those with whom they associate. The power of example is also recognized and documented in modern scientific psychology, in which Bandura's Social Cognitive Theory (SCT, Bandura, 1986) offers perhaps the most fully developed account of social learning. Recently, Oman and Thoresen (2003b) called for the scientific study of learning from spiritual exemplars, which they called "spiritual modeling." They argued that Bandura's SCT could be productively applied to understanding spiritual modeling processes. Most spiritual attitudes and practices, they suggested, may be largely

*Corresponding author. Email: dougoman@post.harvard.edu

transmitted through the four primary learning processes identified in SCT—*attention, retention, reproduction in behavior, and motivation*. Furthermore, they argued that throughout history, “religious traditions have often systematically attempted to facilitate each of [these four] major processes” in order to transmit spirituality (p. 154). Bandura (2003) agreed on the “paramount role of spiritual modeling in the development and exercise of spirituality,” and emphasized that the SCT-based spiritual modeling framework can be applied not only to organized religions, but to the “growing pluralization of spiritual interests and manifestations” in modern society (p. 170).

Improved understanding of spiritual modeling processes would be of obvious interest in pastoral psychology. Such understanding would also be of interest to education, health psychology, medicine, nursing, social work, public health, and other fields in which spiritual factors have been found to predict or cause outcomes of significant interest (Campbell et al., 2007; Glanville, Sikkink, & Hernandez, 2008; Miller & Thoresen, 2003; Smith, 2003; Thoresen & Harris, 2002; Tisdell, 2007; Youniss, McLellan, & Yates, 1999). For example, an expert panel appointed by the US National Institutes of Health found “persuasive” evidence that attendance at religious services is associated with longer life (Powell, Shahabi, & Thoresen, 2003). Controversies remain, and some forms of religion and spirituality, such as avoiding blood transfusions, produce clear negative effects (Oman & Thoresen, 2005). The continued emergence of generally favorable empirical findings, however, points to the need to study spiritual modeling.

This article reports on an initial psychometric evaluation of the Spiritual Modeling Inventory of Life Environments (SMILE), a multidimensional inventory of perceptions about spiritual models and their availability and influence. Validated measurement instruments are vital for scientific progress in any field, and spiritual modeling measures have not previously been available. As described later, the SMILE follows Emmons (1999) in operationally defining spirituality with reference to a respondent’s perceived “ultimate concerns.”¹ In the study reported here, the SMILE was administered to a geographically and ethnically diverse sample of US college students drawn from both religious and state-supported public universities ($N = 1010$). Besides providing psychometric information, these findings offer a solid initial view of the contours of spiritual modeling perceptions in contemporary US college students.

We present theoretical background and a conceptual framework that specifies key features of spiritual modeling perceptions and processes as experienced in daily life. We then report and discuss empirical findings, including implications for interventions.

Conceptual background and model

According to Social Cognitive Theory, social learning processes are influenced both by environmental factors, such as the availability of suitable behavioral models, and by intra-individual factors, such as motivations and self-efficacy perceptions (Bandura, 1986). Interpersonal factors, such as the nature, closeness, and psychic “investment” in one’s personal relationship with a model, may also affect social learning processes (Lent & Lopez, 2002; Smith & Denton, 2005, p. 243). All three types of influence are represented in Figure 1, which presents a conceptual framework for understanding the social learning of spiritual skills, qualities, and behaviors. Like Oman and Thoresen’s (2003b) initial conception of spiritual modeling, the framework presented in Figure 1 is compatible with a wide range of definitions of spirituality.

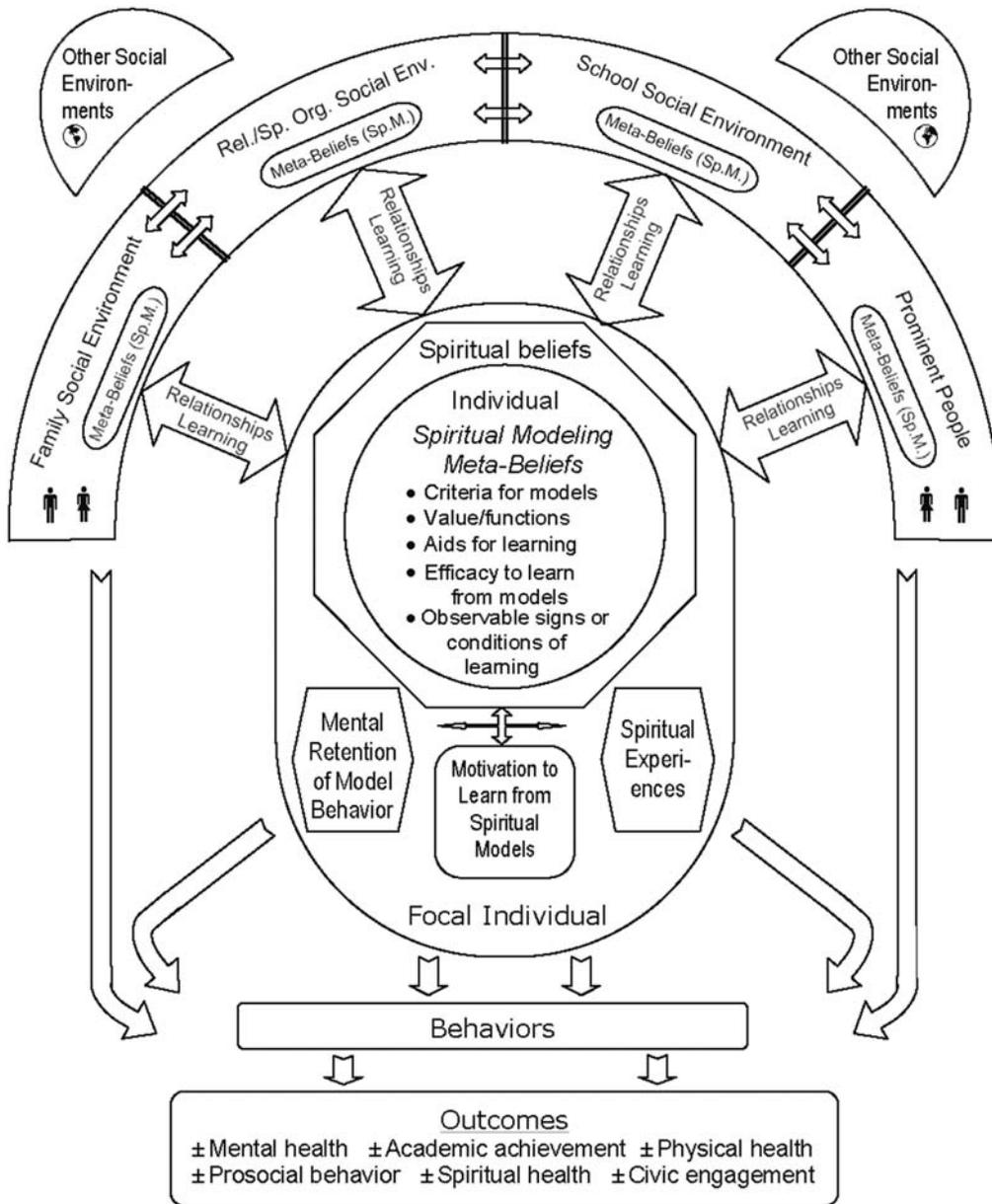


Figure 1. Conceptual framework of ways in which spiritual modeling processes affect a focal individual through social environments.

Key features of Figure 1 include:

- Intra-individual factors (represented in the center oval) are viewed as potentially changeable and evolving, either conscious or unconscious, and closely related to social learning processes that include *attention*, *retention*, and *motivation*.
- Social environments (the outer semicircle), including family, school, and religious or spiritual organizations, are a potential source of spiritual models.

95 Another potential source is prominent people, either contemporary or traditional, encountered through books, sermons, the Internet, or various other electronic, print, or oral media.

- *Spiritual modeling meta-beliefs* are defined by us as metacognitive beliefs regarding how and why people learn from spiritual models. Such beliefs may be implicitly or explicitly embedded in environments, as well as within individuals. 100 They help guide investments of attention and behavior by both individuals and groups, and may either facilitate or impede spiritual modeling learning processes.

The framework represented in Figure 1 provides an essential conceptual foundation for the SMILE, not described elsewhere. Because this paper's primary focus is empirical, a fuller explanation of the conceptual framework is reserved for the Appendix.

105 ***Multiple levels for intervention***

The spiritual modeling framework presented in Figure 1 offers guidance for developing interventions at the individual and the social environment level. Interventions at these levels often serve complementary functions in promoting health, well-being, and other positive outcomes (Huppert, 2004; Stokols, 1992). A recent report from the Institute of 110 Medicine recommended that "interventions on social and behavioral factors should link multiple levels of influence (i.e., individual, interpersonal, institutional, community, and policy levels)" (Smedley & Syme, 2000, p. 9). Accordingly, the framework presented in Figure 1 suggests multiple intervention points for fostering spirituality, and other positive potential outcomes noted earlier. To maintain ethical grounding, each mode 115 of intervention must respect individual beliefs, professional codes of conduct, and institutional constraints (e.g., in the US separation of church and state) (Nord & Haynes, 1998; Plante, 2007; Post, Puchalski, & Larson, 2000). Keeping in mind these constraints, the Figure 1 framework suggests interventions that include:

- supporting an individual in identifying and developing relationships with positive spiritual models in various social environments, such as appropriate mentors, coaches, or faith leaders (Lerner, 2008);
- providing individuals with meta-beliefs and tools (aids) for learning more effectively from spiritual models, for example, by improving attentional regulation and retention of experiences of spiritual models (Oman, Flinders, & 125 Thoresen, 2008; Oman & Thoresen, 2007);
- modifying social environments to provide more exposure to positive spiritual models (e.g., for schools, see Oman, Flinders et al., 2008);
- modifying social environments, especially those that have tended to dismiss spiritual concerns, to project spiritual modeling meta-beliefs that are more accurate and supportive (Glenn, 2003; Kristeller, Rhodes, Cripe, & Sheets, 2005; 130 Nord & Haynes, 1998).

Thus, we believe that a spiritual modeling framework offers an approach to religion and spirituality that can promote more effective ways of learning and enacting spiritual attitudes, beliefs and actions in daily life. Doing so might foster overall health 135 and well-being, and could reduce a range of negative or harmful attitudes, beliefs, and behaviors. But capitalizing on this rich potential will require better understanding of how people currently conceptualize and learn from spiritual models across major life environments.

Spiritual Modeling Inventory of Life Environments (SMILE)

140 Based on the foregoing conceptual model, we constructed a self-report questionnaire called the Spiritual Modeling Inventory of Life Environments (SMILE). The SMILE's purpose is to assess a focal individual's perceptions of several major constructs represented in Figure 1, including spiritual modeling meta-beliefs and perceived spiritual models among prominent people and within family, religious, and school environments. The
145 SMILE is intended to be independent of particular theological beliefs, and capable of generating useful information from respondents who are conventionally religious as well as those who are "spiritual but not religious" or who are neither. An initial draft of the SMILE was developed by the first two authors, and refined through feedback from colleagues and small pilot tests for readability by adults and college students.

150 *Assessment strategy*

Constructing the SMILE demanded resolving two main challenges: conveying what we meant by spiritual, and conveying what we meant by model. Failing to offer any explanation of these constructs could create confusing findings due to idiosyncratic understandings of these terms. But asking participants to use a rigid definition of spiri-
155 tuality could risk undermining our intended inclusiveness. Thus, in the final SMILE questionnaire, we addressed these challenges through a combination of three main techniques: First, we defined spirituality and spiritual models with reference to Tillich's (1951) notion of ultimate concerns, sometimes expressed in the SMILE simply as "what's most important in life," a notion that does not require specific theological or ontological beliefs
160 (Emmons, 1999). The term spirituality was then introduced as a convenient word to describe skills or qualities viewed as "helpful for what's most important/consequential in life." Second, we included substantial introductory text that used diverse examples to explain how people experience and respond to ultimate concerns, and how they learn from other people (models) how to respond to those concerns (spirituality). To illustrate
165 the concept, some specific everyday and prominent models were mentioned as examples from whom "some people feel they have learned wise daily living."²

Third, the SMILE was structured to allow earlier questions to set a context for later questions. This feature is analogous to a semistructured interview, in which earlier questions provide a context for understanding the intent and vocabulary of later questions.
170 The SMILE also included several opportunities for respondents to express their own conceptions and definitions of important constructs, which not only helped convey the inclusive intent, but also provided useful feedback. Later, we present evidence suggesting that these communication strategies were reasonably successful for engaging and representing the views of most survey participants.

175 *Structure*

Implementing these strategies resulted in a measure with three major parts:

Part I. An introduction, in which the notions of spirituality (as ultimate concerns) and spiritual models are introduced and explained through examples. This section also contains a combination of open- and close-ended questions
180 about respondents' views of what skills and qualities are important for addressing ultimate concerns.

Part II. A second part, entitled "useful exemplars," in which participants are queried about details of their spiritual models (if any) in various

185 life-environments, including family (FAM), religious/spiritual organiza-
tion (RSO), school (SCH), and famous or prominent people (PRO) from
tradition, history, or current media.

190 Part III. A third part, “global assessments,” that elicits spiritual modeling meta-
beliefs and other generalized perceptions about spiritual modeling.
Questions address topics such as the influence of models from different
social environments, perceived efficacy for learning from models, and the
perceived impact on other life tasks of learning from spiritual models.

Scoring

195 As an inventory, the SMILE is not intended to produce a single overall score reflecting *all*
items. However, one can distinguish a meaningful continuum between respondents who
report no models in Part II, at one extreme, vs. respondents who report influential models
in every major environment. As described later, SMILE scoring quantifies this particular
dimension of variability as an interval-level summary measure of perceived influence from
spiritual models.

200 Table 1 summarizes the major elements of the SMILE questionnaire addressed in
this report. Because of limited space, spiritual modeling meta-beliefs (Part III) are not
addressed, except for one question about the perceived influence of each life environment
(Q9), used in constructing the summary measure. We also describe responses to an overall
feedback question (Q18). Except for the feedback item, the questions analyzed here consti-
205 tute what we term the “foundational” portion of the SMILE. Full text of the foundational
sections of the SMILE may be obtained on request from the corresponding author.

Research questions

210 The present empirical studies of the SMILE focus on psychometric evaluation of its
foundational questions in a college student sample. Our diverse sample also supplies
useful reference values for US college students, a population of major educational and
health related concern (Astin et al., 2005). We examined the following primary research
questions:

- 215 (1) What qualities do students view as important for spirituality (operationalized here
as ultimate concerns)? What dimensions of variability (i.e., underlying factors) can
be detected in their views?
- (2) What spiritual models are most commonly recognized (1) within everyday life
environments (family, school, religious organization) and (2) among prominent
people known from tradition or from contemporary sources?
- (3) How are the perceived existence and influence of spiritual models associated with
demographic and spiritual factors within various environments?
- 220 (4) Does a summary index of spiritual models across major life environments possess
adequate psychometric reliability and validity?

Methods

225 We first describe methods used for a multisite cross-sectional study ($N = 1010$), and then
for a smaller single-site test-retest study ($N = 66$). All surveys in both studies were admin-
istered online using the SPSS “Dimensions” marketing research program (SPSS-MR).

Table 1. Elements of SMILE measure.

Q#	Topic	Response	Levels	Comments
	Part I: Introduction			
	Introduction to SMILE	–		669 words
Q1	Characterize spiritual identity	Nominal	4	Response options: <i>Religious and spiritual/spiritual but not religious/religious but not spiritual/neither</i>
Q2	Describe beliefs/practices	Open		Q2a for those responding <i>neither</i> to Q1; Q2b for others (wording slightly varied ^a)
Q3	Importance for ultimate concerns of 14 predefined ^b and 0 to 2 respondent-defined qualities	Likert	5	Responses from <i>none</i> (1) to <i>very much</i> (5) on qualities such as compassion, forgiveness, faith, etc. ^b
	Part II: Useful Exemplars ^c			
	Introduction to Section	–		198 words
Q4	(a) Family spiritual models	Nominal	15	Up to 1 response allowed
	(b) Qualities of the family model ^c	Yes/no	2	Specify which of the 14–16 qualities from Q3 apply to model (“check all that apply”)
	(additional unanalyzed subparts: see text)			
Q5	R/S organization spiritual models ^c	Nominal	7	Up to 1 response allowed
Q6	School spiritual models ^c	Nominal	8	Up to 1 response allowed
Q7.1	Prominent models before 1900 ^c	Open		Up to 2 responses allowed
Q7.2	Prominent models after 1900 ^c	Open		Up to 2 responses allowed
Q8	Other social environments ^c	Open		Up to 1 response allowed; describe both environment and relation
	Part III: Global Assessments			
	Introduction to Section	–		34 words
Q9	Influence of models in each of 5 environments (corresp. to Q4–Q8) (Q10–Q17 address meta-beliefs and are beyond the scope of this report)	Likert	5	From <i>not at all influential</i> to <i>very much influential</i>
Q18	Asks for feedback (respondent’s experience of questionnaire)	Open		

^aQ2a asks about “your beliefs about what matters most in life,” and Q2b about “your religious and/or spiritual beliefs and practices.” ^bQ3 parts address these virtues: “Hope (for example, optimism)”; “Patience”; “Compassion”; “Gratitude”; “Forgiveness”; “Courage”; “Persistence”; “Self-control”; “Fairness”; “Truthfulness”; “Humility”; “Faith in God”; “Faith in a universal moral order (such as ‘karma,’ or ‘as you sow, so shall you reap’)”; “Discernment (or good judgment).” ^cQuestions Q5–Q8 possess subparts analogous to Q4, but only the main part is shown.

This package allowed good control over visual layout and skip patterns. Informed consent was also obtained online from all research participants.

Participants in cross-sectional study

To obtain sample diversity and statistical power, the cross-sectional survey was administered at four sites: large public universities in California, Connecticut, and Tennessee

(to be abbreviated as UCA, UCN, and UTN, respectively); and a Roman Catholic university in California (RCU). In fall 2004, we obtained all surveys from UCA, UTN, and RCU, and 25 from UCN; the remaining UCN surveys were obtained the following spring (January through March). Participants were recruited through psychology department subject pools using standard procedures, and received course credits. Participants were told that the study was about spirituality, religion, health behaviors, coping, and emotional issues. More than 95% of 1070 participants who began the surveys completed them (96% at UCA, 99% at UCN, and 94% at UTN, and 100% at RCU). Median completion time was 17 min for SMILE Parts I and II together, 25 min for the entire SMILE, and 43 min for the entire survey (including additional covariate measures). These represent elapsed times, tracked electronically, without deducting any breaks that may have been taken by participants. Of 1030 validly completed surveys, we excluded 14 that failed to include data for gender (2), age (5), socially desirable responding (3), or the SMILE items needed to compute the summary model score (4). We also reduced age-related heterogeneity and outliers by dropping 6 participants over age 30, yielding a sample of 1010 for further analysis, with characteristics presented in Table 2.

Measures in cross-sectional study

To avoid excessive participant burden at the four cross-sectional sites, we administered a slightly abbreviated version the SMILE that omitted some subquestions about models in each social environment. More specifically, within Q4–Q8 (Table 1), parts about model identities and qualities were retained, but additional inquiries about types, frequencies, and experiences of contacts were eliminated. Additional information about SMILE items is integrated for readability into the Results section.

Spiritual modeling influence scores

Separately for the four primary environments, environment-specific scores of perceived spiritual model influence were calculated as follows: First, we computed the fraction of potentially reportable models that were actually reported. This fraction always ranged from 0 to 1, taking on values of either 0/1 or 1/1 for the community-based environments (Q4–Q6), or values of 0/4, 1/4, 2/4, 3/4, or 4/4 for reports of models among prominent people. This fraction was multiplied by perceived environment influence (relevant Q9 subpart rescaled to 0/0.25/0.50/0.75/1.00) to yield four environmental scores that each ranged from 0 to 1. These environmental scores are each theorized (Figure 1) to be determined by individual factors (e.g., meta-beliefs, personality, and self-awareness) as well as by systematic factors pertaining to environments (e.g., models, meta-beliefs, and modes of impact). These environmental scores were added together to produce the summary perceived spiritual model influence score, which ranged from 0 to 4.

Demographics

Demographic measures administered at all sites included standard measures of gender and age, ethnicity, and year in college. Major field of study (planned or current) was assessed through open-ended responses that were coded to five levels in a system developed for this study. Religious denomination was categorized according to the RELTRAD scheme (Steensland et al., 2000).

Table 2. Selected characteristics of analyzed participants ($N=1010$), by site and study.

Characteristic	Level	All sites	UCA	UCN	UTN	RCU	TRT
Gender	Female	722 (71)	313 (68)	172 (80)	185 (71)	52 (70)	52 (78)
	Male	288 (29)	148 (32)	44 (20)	74 (29)	22 (30)*	15 (22)
Age in years	17–18	428 (42)	137 (30)	82 (38)	170 (66)	39 (53)	0 (0)
	19–20	437 (43)	225 (49)	109 (50)	72 (28)	31 (42)	5 (7)
	21–22	113 (11)	75 (16)	23 (11)	12 (5)	3 (4)	48 (72)
	23–29	32 (3)	24 (5)	2 (1)	5 (2)	1 (1)***	14 (21)***
Year in School	1st	495 (49)	139 (30)	103 (48)	208 (80)	45 (61)	0 (0)
	2nd	261 (26)	144 (31)	66 (31)	29 (11)	22 (30)	1 (1)
	3rd	167 (16)	111 (24)	35 (16)	14 (5)	3 (4)	7 (10)
	4th	63 (6)	43 (9)	10 (5)	7 (3)	3 (3)	43 (64)
	5th or higher	27 (3)	24 (5)	2 (1)	1 (0)	0 (0)***	16 (24)***
Ethnicity	White	577 (58)	154 (34)	178 (83)	193 (75)	52 (70)	34 (51)
	Asian	254 (25)	224 (49)	14 (7)	6 (2)	10 (14)	19 (28)
	Black	71 (7)	5 (1)	7 (3)	57 (22)	2 (3)	0 (0)
	Hispanic	78 (8)	56 (12)	12 (6)	1 (0)	9 (12)	8 (12)
	Other	22 (2)	16 (4)	4 (2)	1 (0)	1 (1)***	6 (9)**
Major Field of Study	Humanities	67 (7)	34 (8)	10 (5)	16 (6)	7 (10)	0 (0)
	Social science	420 (42)	222 (49)	106 (50)	53 (20)	39 (54)	64 (96)
	Bus./marketing	103 (10)	19 (4)	33 (15)	46 (18)	5 (7)	2 (3)
	Nat./Li. Sc./Eng.	295 (29)	142 (31)	37 (17)	105 (41)	11 (15)	1 (1)
	Vague or dual	116 (12)	37 (8)	30 (14)	39 (15)	10 (14)***	0 (0)***
Spiritual Identity	Spir. and Relig.	417 (42)	134 (29)	92 (43)	165 (64)	26 (35)	17 (26)
	Spir., not Relig.	301 (30)	168 (37)	54 (25)	46 (18)	33 (45)	35 (53)
	Relig., not Spir.	116 (12)	49 (11)	26 (12)	33 (13)	8 (11)	2 (3)
	Neither	169 (17)	106 (23)	44 (20)	12 (5)	7 (9)***	12 (18)***
Religious Denom.	None	327 (33)	204 (45)	62 (29)	37 (15)	24 (32)	37 (55)
	Jewish	31 (3)	17 (4)	11 (5)	1 (0)	2 (3)	1 (1)
	Roman Catholic	245 (25)	104 (23)	92 (43)	17 (7)	32 (43)	14 (21)
	Prot., Black	33 (3)	2 (0)	2 (1)	28 (11)	1 (1)	0 (0)
	Prot., Conserv.	175 (18)	49 (11)	12 (6)	110 (43)	4 (5)	4 (6)
	Prot., Mainline	91 (9)	17 (4)	21 (10)	44 (17)	9 (12)	2 (3)
	Other Ju-Chr	37 (4)	11 (3)	11 (5)	13 (5)	2 (3)	4 (6)
	Buddhist	24 (2)	22 (5)	1 (0)	1 (0)	0 (0)	2 (3)
	Oth. non-Ju-Chr	31 (3)	27 (6)	1 (0)	3 (1)	0 (0)***	3 (4)**
Freq. Attends Relig. Serv. At School	Near or > 1/wk	188 (19)	67 (15)	14 (6)	94 (36)	13 (18)	8 (12)
	1–3/month	116 (12)	41 (9)	15 (7)	50 (19)	10 (14)	3 (4)
Extent Spiritual	< 1/month	176 (17)	84 (18)	40 (19)	33 (13)	19 (26)	8 (12)
	Never	526 (52)	267 (58)	147 (68)	81 (31)	31 (42)***	48 (72)*
Extent Religious	Very	153 (15)	60 (13)	15 (7)	63 (24)	15 (20)	11 (16)
	Moderate	376 (37)	138 (30)	92 (43)	115 (45)	31 (42)	21 (31)
	Slightly	331 (33)	179 (39)	68 (31)	64 (25)	20 (27)	25 (37)
	Not at all	148 (15)	83 (18)	41 (19)	16 (6)	8 (11)***	10 (15)
Meditates Currently	Very	116 (12)	41 (9)	16 (7)	50 (19)	9 (12)	6 (9)
	Moderate	328 (33)	112 (24)	69 (32)	126 (49)	21 (28)	10 (15)
	Slightly	305 (30)	142 (31)	75 (35)	61 (24)	27 (36)	14 (21)
	Not at all	259 (26)	165 (36)	56 (26)	21 (8)	17 (23)***	37 (55)***
All Combined	Any	425 (43)	182 (40)	78 (36)	127 (50)	38 (51)	26 (39)
	None	570 (57)	272 (60)	137 (64)	125 (50)	36 (49)**	41 (61)
	(Total)	1010	461	216	259	74	67

Note: TRT = Test/retest; UCA, UCN, and UTN are public universities in California, Connecticut, and Tennessee, respectively; RCU is a Roman Catholic university in California. Not all percents add to 100 due to rounding. Cross-sectional N values range from 994 to 1010.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ for covariate proportions differences between university sites in cross-sectional study (indicated in column labeled RCU), or between cross-sectional and baseline of test/retest (indicated in column labeled TRT), from chi-squared or Fisher exact tests.

Each site also included a short (13-item) measure of socially desirable responding (Reynolds, 1982), as well as the four highest-loading items drawn from the Celebrity Attitudes Scale (Maltby, Houran, Lange, Ashe, & McCutcheon, 2002, items 1, 2, 3, and 13). This scale was developed to assess tendencies to worshipful attitudes towards celebrities. An example item is “If I were to meet my favorite celebrity in person, he/she would already somehow know that I am his/her biggest fan” (p. 1162). A short version of the 12-item Multidimensional Scale of Perceived Social Support (MSPSS), formed from a balanced subset of 6 items, was used at all sites (items 2, 4, 5, 8, 9, and 12 from Zimet, Dahlem, Zimet, & Farley, 1988). Short form scores were very highly correlated the full MSPSS, which was used at UCA (Pearson product-moment correlation [r]=0.98, nonparametric Spearman rank-order correlation [ρ]=0.99, $n=459$, $p < 0.0001$).

Spirituality and virtue covariables

Several other spirituality and virtue constructs were assessed. Most single-item measures and scales were widely used and well-validated, with psychometric properties described in the cited sources. To reduce overall participant burden, some of the measures were included only at single sites. Scale reliabilities in this study were comparable with previous studies. Information about sources, sites, and reliabilities is provided in the Results section.

A few of these instruments were slightly modified, or merit clarification. Attendance at religious services was measured by two items, “When at home, how often do you attend religious services?” and “When living where you attend college, how often do you attend religious services?,” with responses coded on 9-point scales (from *never* to *more than once a week*). Self-ranking of spiritual intensity (the extent that participants considered themselves spiritual) was assessed, with responses coded on 4 point scales (*not at all*, *slightly*, *moderately*, *very*) (Fetzer, 2003, p. 88). Meditation was assessed with an item enquiring how frequently a participant “Practice[s] concentrated prayer or meditation for 10 min, if necessary by repeatedly bringing my mind back to my intended focus,” with responses on a 6-point scale (*never* to *everyday*). A second item, otherwise identical, enquired about a period of 20 min. Belief in afterlife was assessed two ways: by a 10-item scale used only at UCA (Form A from Osarchuk & Tatz, 1973), and by a highly correlated ($r=0.66$, $\rho=0.64$, $p < 0.0001$, $n=434$) single-item ordinal measure used at all sites (Item #31 from Hilty & Morgan, 1985). Because Benson and Spilka’s (1973) God-image scale lacked introductory text, we asked participants to “please think about God or the Highest Power in the Cosmos as you understand it...” Similarly, for Rowatt and Kirkpatrick’s (2002) God-attachment scale, introductory text was augmented to state that “you may interpret the word ‘God’ as referring to the Highest Power in the Cosmos as you understand it.”

Analysis strategy

Means, percentages chi-squared tests, and F -tests were used to examine associations between covariates and SMILE measures. Many SMILE variables were non-normally distributed, so correlations among them and with covariate scales were assessed by both Spearman (nonparametric) and Pearson product-moment correlations, which produced substantively identical results in all cases. We therefore report the more familiar Pearson correlations. Factor analyses were used to examine the structure of

the perceived importance of spiritual qualities (responses to Q3 in Table 1), the number of models named in each environment (Q4–Q7) and perceived influence of social environments (Q9), and the environmental scores. All quantitative analyses were conducted with SAS version 9.1 (Cary, NC). Several open-ended response questions on the SMILE were systematically coded using categories developed for this study (Q3/other, Q8, Q18). For the purposes of the present study, qualitative analyses of several lengthy open-ended response questions focused on careful reading to identify predominant themes.

Test–retest study

A study of SMILE test–retest reliability was conducted at UCA through an upper-division psychology classroom. Participants ($N=66$) were class members, with demographic characteristics as summarized in the final column of Table 2. The initial (time-1) survey was conducted between April 6 and April 18, 2005, and the second (time-2) survey was conducted between May 25 and June 1. Each included only the full SMILE plus some demographic questions. Student IDs were used to match time-1 and time-2 surveys and for assigning participation credit, and were then replaced by coded identifiers when data was analyzed. Test–retest reliability is reported as Pearson correlations, which were nearly identical to (nonparametric) Spearman correlations.

Results

Views of ultimate concerns

Spiritual identity

One major purpose of the SMILE’s introductory section was to give substance to the term “spirituality” (ultimate concerns) by suggesting virtues as possible key qualities for cultivating spirituality. Analyses of responses present below suggest that most participants did indeed resonate with this perspective, providing a foundation for interpreting subsequent SMILE items.

More specifically, the first two SMILE questions elicited participant thinking about ultimate concerns. Based on similar items from other surveys (Gallup & Lindsay, 1999; Zinnbauer et al., 1997), Q1 asked “which of the following statements comes closest to describing your beliefs,” with four response options, such as “spiritual but not religious,” that are listed in Table 1. Table 2 shows that almost half (42%) of participants viewed themselves as both spiritual and religious, and only about one-sixth (17%) described themselves as neither spiritual nor religious. The next SMILE question (Q2) invited an open-ended description of the respondent’s beliefs and practices. Inspection of these descriptions suggested they corresponded in expected ways with the spiritual identities supplied in Q1 (e.g., as interpreted by Zinnbauer et al., 1997). Of special interest for interpreting subsequent SMILE items are responses from those self-identified as “neither spiritual nor religious” ($N=169$). These participants supplied the shortest responses (15 word median vs. 24 for others). By far their most common theme in describing their ultimate concerns was human relationships (e.g., friends, family, love).³ Less prevalent but recurring themes among this “neither” group also included happiness and satisfaction, skill and/or hard work, various kinds of success, and treating others fairly and compassionately.

Perceived importance of virtues

Question 3 concerned specific qualities, or virtues, that participants might perceive as important for ultimate (spiritual) concerns. Respondents rated the importance of
365 14 prespecified virtues (see Table 1 note). These included 13 virtues from each of the six major divisions of Peterson and Seligman's (2004) Values in Action [VIA] taxonomy (composed before the VIA's publication, the SMILE also includes "patience," described in the VIA, p. 24, as a "blend" of three virtues from separate divisions).

Factor analyses showed that a single dominant dimension largely drove endorsements
370 of these virtues as important for ultimate concerns. One primary factor explained 38% of variance, and loaded on all items (>0.45). More than 97% of respondents ($N=982$) gave the 14 virtues a mean rating of at least *some* importance (3 on a scale from 1 = *none* to 5 = *very much*), suggesting widespread affirmation of these virtues as relevant to ultimate concerns. Means for each individual virtue were also significantly above
375 *some* (3) importance, with the highest mean ratings for truthfulness and compassion (each 4.5 out of 5 possible).

Also detectable was a modest degree of heterogeneity that appeared primarily to reflect different views of conventional religious faith. Three eigenvalues exceeded one (5.26, 1.40 1.15), suggesting possible two- or three-factor solutions. Extracting
380 two-factors with varimax rotation yielded a conventional faith factor that explained 17% the variance, and had very high loadings from the two faith items (>0.80), and correlated only modestly ($r=0.35$) with the primary factor. These two faith items also had the two lowest mean ratings of all virtues (3.5 and 3.6, $p < 0.0001$ vs. each of the 12 other virtues). A three-factor solution was only weakly statistically supported but
385 appeared interpretable as reflecting differences in interpersonal orientation. Extracting a third factor partitioned the primary factor into two strongly correlated ($r=0.58$) factors comprising more interpersonally oriented virtues (compassion, forgiveness, gratitude, patience, fairness, truthfulness) vs. more generalized intrapersonal virtues (persistence, courage, self-control, and discernment). These findings suggest that except
390 for minor differences reflecting interpersonal orientation, and stronger systematic differences reflecting conventional faith, participants tended to regard all listed virtues as important.

Open-ended responses

About half of participants ($N=503$) nominated either one or two additional virtues as
395 important (most, 338/503, nominated two additional virtues). These responses tended to confirm the relevance to participants of our list of virtues, but also suggested some of its limitations. By far the most commonly named additional virtue was love ($N=99$); we did not list love because of its numerous and sometimes contradictory connotations in English (Hendrick & Hendrick, 1986). Of the remaining responses, a surprisingly
400 large fraction (24%, or 205/841) were exact duplicates of listed virtues (e.g., faith in God), and many others were almost synonyms (e.g., honesty, $n=28$). Of the remaining original responses, many clearly corresponded to VIA virtues (e.g., loyalty, $n=19$), while a small proportion might be viewed as conflicting with the VIA framework (e.g., ambition, $n=8$; passion, $n=8$). Perhaps most noteworthy were several variants
405 of self-confidence ($N=20$), which is not clearly included in the VIA system, although mentioned as a contributor to some VIA qualities (e.g., persistence, Peterson & Seligman, 2004).

Influence of demographic characteristics

410 We now turn to findings on the identities of spiritual models (Q4–Q7), and the perceived
influence of models from each major social environment (Q9). For each environment,
individuals were asked to identify the individuals, if any, who “most demonstrate spiritual
skills.” Table 3 shows that whether or not a model was named varied significantly across
demographic groups. The four columns labelled “any model reported” show the
percentages of each type of respondent who reported one or more models within each
415 environment. For example, at least one prominent model was reported by 72% of RCU
respondents, but by less than 60% at the other three institutions, and such differences were
statistically significant. Interestingly, in multivariate linear regressions that adjusted for all
other covariates listed in Table 3, between-university differences in summary models
remained statistically significant ($p < 0.05$, $n = 965$), suggesting possible influences from
420 regional or institutional culture, or from differential recruitment by the host universities
or their introductory psychology courses.

Inspection of Table 3 shows that some demographic groups tended to report more
models across several environments. Significantly more models were commonly observed
among females, non-Asians, younger participants, those identified as spiritual and/or
425 religious, Protestants (conservative, mainline or Black), and current meditators. Older age
was associated with fewer RS organizational models but not with fewer family models.

The second set of four columns in Table 3 shows how participants viewed the overall
influence of each environment. Participants were asked, “Overall, how much have people
(living or dead) from each of the following sources influenced your feelings, views and
430 practices regarding what’s most important in life” (Q9). Just as for number of models,
many differences across demographic groups were statistically significant. The same
groups that were more likely to name more models in an environment also tended to
report higher levels of influence for that environment.

Frequently cited models

435 Table 4 shows the most frequently cited models within each major social environment.
Most participants (81%) named a person from within their family who functioned as
a spiritual model for them. Consistent with findings from developmental psychology, the
most commonly named family model by far was the mother (Boyatzis, Dollahite, &
Marks, 2005). Of the 814 participants who named a family model, mothers were named by
440 41% (the “conditional” proportion—conditional on having named a family model).
Among all 1010 study participants, mothers were named by a full one-third (33%, the
“unconditional” proportion). Next most common among family models were the father
and grandmother (20% and 18% of named models, respectively, i.e., “conditional”
proportions). Similarly, clergy and friends represented 48% and 52% of named models
445 (conditional proportions) within religious organizations and schools, respectively.

Among prominent models, the six most commonly cited were evenly divided between
the pre-1900 and post-1900 periods. In view of the predominantly Christian sample, it is
not surprising that the most commonly cited model overall was Jesus, mentioned by 30%
of all participants, and by 53% of those naming any prominent model. Also highly cited
450 were two non-Judeo-Christian models, Mahatma Gandhi and the Buddha, as well as
Mother Teresa of Calcutta, Martin Luther King Jr, and Moses.

Additional analyses (not shown) showed that highly cited models tended to
correlate with covariates in expected ways. Limited space precludes a full presentation

Table 3. Mean environment-specific influence and percent naming a model, by covariates.

Variable	Level	N (%)	Any (≥ 1) model reported (%)				Mean influence of environment ^a				
			FAM	RSO	SCH	PRO	FAM	RSO	SCH	PRO	Sum ^b
University ^c	UCA	461	75	42	41	55	4.3	2.9	3.0	2.2	1.4
	UCN	216	82	49	40	54	4.4	3.1	2.9	2.1	1.4
	UTN	259	87	71	54	59	4.4	3.9	2.9	2.3	1.8
	RCU	74	86***	55***	66***	72*	4.3 ^{ns}	3.2***	3.2 ^{ns}	2.3†	1.7***
Year in school	1st	495	83	57	50	58	4.4	3.4	3.0	2.3	1.6
	2nd	261	78	48	44	57	4.4	3.2	3.0	2.2	1.5
	3rd	164	82	52	43	57	4.3	3.0	2.9	2.1	1.4
	4th	63	78	32	38	56	4.2	2.6	3.1	2.3	1.2
	5th or higher	27	70 ^{ns}	41**	26*	59 ^{ns}	4.1 ^{ns}	2.8***	2.7 ^{ns}	2.1 ^{ns}	1.1***
Gender	Female	722	83	56	48	58	4.5	3.3	3.0	2.2	1.6
	Male	288	75*	42***	42 ^{ns}	55 ^{ns}	4.2***	2.9***	3.0 ^{ns}	2.3 ^{ns}	1.3***
Ethnicity	White	577	84	58	52	61	4.5	3.3	3.0	2.2	1.7
	Asian	254	69	38	38	47	4.2	2.9	3.1	2.2	1.2
	Black	71	89	65	41	52	4.5	4.0	3.0	2.2	1.7
	Hispanic	78	83	51	38	63	4.3	3.5	2.6	2.4	1.5
	Other	22	73***	41***	32**	68**	3.9**	2.3***	2.4**	2.1 ^{ns}	1.1***
Major Field of study	Humanities	67	82	42	51	66	4.3	3.0	3.0	2.4	1.5
	Social science	420	83	51	46	58	4.4	3.1	3.0	2.1	1.5
	Bus./market	103	78	57	42	50	4.3	3.2	3.0	2.0	1.5
	Nat./Li. Sc./Eng.	295	80	56	47	57	4.5	3.4	3.0	2.3	1.6
	Vague or dual	116	79 ^{ns}	53 ^{ns}	43 ^{ns}	59 ^{ns}	4.2†	3.4*	2.8 ^{ns}	2.2*	1.5 ^{ns}
Spirit. identity	Spir. and Rel.	420	93	78	54	64	4.6	4.2	3.0	2.5	2.0
	Spir., not Rel.	304	81	35	45	63	4.3	2.5	2.9	2.1	1.3
	Rel., not Spir.	116	77	59	38	49	4.3	3.7	2.8	2.0	1.4
	Neither	172	54***	15***	35***	38***	4.0***	1.8***	3.0 ^{ns}	1.8***	0.8***
Religious Denom.	None	333	67	18	39	47	4.0	1.9	3.0	2.0	1.0
	Jewish	31	68	61	42	35	4.4	2.8	2.9	1.7	1.3
	Roman Cath.	246	86	60	45	66	4.6	3.6	3.0	2.3	1.7
	Prot., Black	33	88	76	55	42	4.4	4.2	2.8	1.8	1.7
	Prot., Conserv.	176	93	85	59	69	4.4	4.3	2.9	2.7	2.1
	Prot., Mainline	91	86	78	54	70	4.7	4.3	3.0	2.4	2.0
	Other Jud-Chr	37	84	70	43	62	4.5	4.1	3.8	2.4	1.7
	Buddhist	25	88	33	46	46	4.6	3.0	3.1	2.3	1.3
	Oth. non-J-Chr	31	97***	48***	42**	35***	4.3***	3.7***	2.9 ^{ns}	2.3***	1.5***
All Comb.	(Total)	1010	81	52	46	57	4.4	3.2	3.0	2.2	1.5

Note: FAM = Family, RSO = Religious/spiritual organization, SCH = School, PRO = Prominent or famous people.

^aInfluence responses on scale of 1 (*not at all influential*), 2 (*a little influential*), 3 (*somewhat influential*), 4 (*quite a bit influential*) 5 (*very much influential*). ^bSummary influence of model availability on a scale from 0 to 4. ^cUCA, UCN, and UTN are public universities in California, Connecticut, and Tennessee, respectively; RCU is a Roman Catholic university in California. ns = $p > 0.10$, † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ for differences from chi-squared or *F*-tests.

455

of these analyses, but three patterns merit mention. First, across groups, participants who mentioned *any* model within an environment, tended to mention the *same* models. For example, although “spiritual and religious” participants cited more family models than others (Table 3), those who *did* cite family based models did not significantly differ by spiritual identity in conditional proportions of citing mothers, fathers, or grandmothers. Second, a few plausible and readily explainable exceptions to this pattern did emerge

Table 4. Most frequently cited models in major social environments.

Environment	Model	N	Percent	
			Of cited ^a	Overall ^b
Family	Mother	336	41	33
	Father	160	20	16
	Grandmother	148	18	15
	Any	814	100	81
Religious Organization	Clergy	251	48	25
	Fellow Cong.	151	29	15
	Staff of Cong.	57	11	6
	Any	527	100	52
School	Friend	240	52	24
	Teacher	92	20	9
	Roommate	60	13	6
	Any	464	100	46
Prominent Pre-1900	Jesus	308	53	30
	The Buddha	59	10	6
	Moses	33	6	3
	Any pre-1900	415	72	41
Post-1900	Mother Teresa	187	32	18
	Mahatma Gandhi	138	24	14
	M. L. King	92	16	9
	Any post-1900	485	84	48
Any ^c		578	100	57

^aPercent of those who cited any model in the environment. ^bPercent of the 1010 analyzed participants. ^cAny prominent model cited (pre- or post-1900).

460 (e.g., males were more likely to name fathers as models, and younger students were
 more likely to name teachers as models). Finally, consistent with the overall pattern,
 but somewhat surprising, the “neither spiritual nor religious” group, although citing
 significantly *fewer* prominent models, cited almost the *same* set of prominent models, and
 465 in similar proportions, as other participants.⁴ Such similarity may reflect shared influences
 from schooling and mass media, or perhaps a paucity of highly regarded nonreligious
 models (see interviews by Steen, Kachorek, & Peterson, 2003).

Other environments

Only 93 participants (9%) indicated that a model from an additional “other” environment
 was important (Q8). “Friends” were named about half the time ($N=46$) and were
 470 sometimes clearly from outside school (e.g., “from an outside musical performing
 organization”). Other recurring named environments included the workplace ($N=11$),
 known community members ($N=9$, e.g., “neighbors”), and serendipitous observations of
 everyday life ($N=14$, e.g., “people whom you will meet at random but who display good
 morals through their actions”).

475 *Relations between environments*

As described earlier, model influence scores were computed for each major social
 environment as a product of the number of models (Q4–Q7) and the reported overall

Table 5. Statistics for spiritual modeling environmental scores for important and substantiated influence ($N = 1010$).

Environment	Mean	SD	Test/retest ^b	Covariances\Correlations ^a			
				FAM	RSO	SCH	PRO
FAM	0.72	0.40	0.66	–	0.27	0.23	0.16
RSO	0.39	0.42	0.74	0.045	–	0.16	0.25
SCH	0.27	0.35	0.62	0.031	0.024	–	0.13
PRO	0.14	0.22	0.78	0.013	0.023	0.010	–

^aCovariances are below diagonal, Pearson correlations are above diagonal. ^bPearson correlations (nonparametric Spearman correlations are 0.69, 0.60, 0.63, 0.70, respectively).

influence of the environment (Q9). Thus, to maximize validity, high environmental scores were not obtained if an individual failed to cite a specific model (lack of substantiation), or said that the environment was not influential (lack of importance). As noted earlier, each product was rescaled to range from 0 to 1. The first column of Table 5 shows that the highest mean environmental scores were obtained for the family models, and the lowest by prominent models. Test–retest correlations were adequate for some environments (i.e., 0.74 for religious/spiritual organizations), but slightly lower than desirable for others (i.e., 0.62 for schools).

We expected that environmental scores would be inter-correlated, because all are theoretically influenced by the same set of individual factors (Figure 1). Table 5 shows that indeed, environmental scores showed small to modest correlations. The highest inter-correlation was between family and religious environment scores ($r = 0.27$). Factor analyses revealed a single eigenvalue larger than one ($\lambda = 1.61$) that explained 40% of the variance, yielding a single factor loading highly on all four environmental scores (0.59 to 0.70). An identical unifactorial finding, slightly stronger numerically, resulted from factor analyses based on polychoric correlations that assume only that items are measured on an ordinal scale.⁵

Finally, all environmental scores were uncorrelated with socially desirable responding ($p > 0.30$), except for a marginally negative correlation with the school environment score ($r = -0.07$, $p = 0.07$),⁶ suggesting that a summary measure computed by adding these environmental scores would not be inflated by socially desirable responding.

Summary measure: Correlates and psychometrics

Because a comparatively small number of participants described an additional environment, the summary measure of overall spiritual model availability was computed as the sum of the scores from the four primary environments. This score is conceived as a summary representation of (substantiated and important) spiritual modeling influences as shaped by *both* individual *and* environmental factors. That is, environmental scores reflect intra-individual factors and measurement error, but also contain what Bollen (1989) calls “specific variance . . . [that] is considered a consistent and *reliable* component” of the score (p. 220, italics in original).⁷ For example, an individual who reports a high school environment score may do so not simply because of intra-individual factors and measurement error, but also because of enduringly valuable spiritual models that have existed or continue to exist in their school environment.

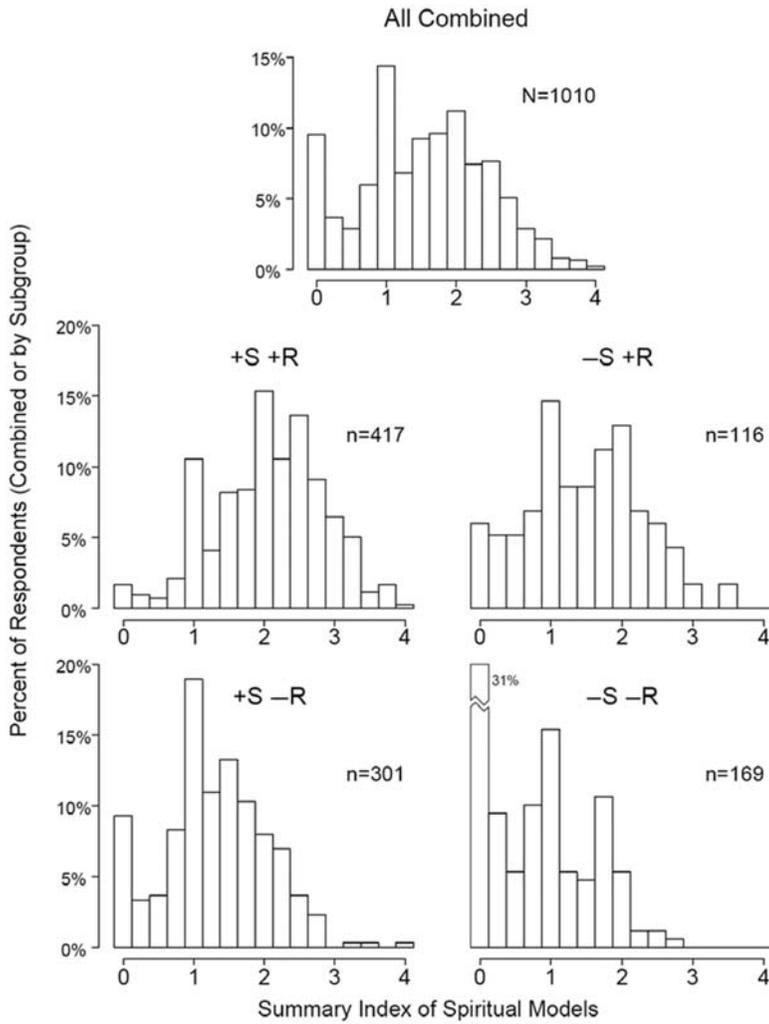


Figure 2. Distribution of summary spiritual models among all participants, and by spiritual identity. Note: +S+R=spiritual and religious, +S-R=spiritual but not religious, -S+R=religious but not spiritual, -S-R=neither religious nor spiritual.

Computed in this way, the summary measure had a range of 0 to 4 and a mean of 1.52 (SD=0.90), and demonstrated a satisfactory 7-week test-retest reliability of $r=0.82$ (Pearson correlation). The nonparametric test-retest correlation was identical (Spearman $\rho=0.82$). Figure 2 shows that summary scores were approximately normally distributed among those who identified themselves as both spiritual and religious, but were not normally distributed overall (among all participants), primarily because of large numbers of zeros, perhaps representing a “floor effect.”

The summary measure showed significant associations with most demographic variables (Table 3, final column). More models were reported by those who were female, an earlier year in school, spiritual or religious, or a current meditator. Fewest models were reported by those who reported no religious affiliation or were neither

spiritual nor religious. These patterns are all consistent with previous research on spirituality and religiousness, and support the validity of this statistic as a summary measure of perceived spiritual modeling influence. Furthermore, more models were reported by those who were Christian, consistent with the longstanding explicit emphasis of spiritual models in Christian tradition in general (à Kempis, 1441/1952), and especially in Protestantism and the recently resurgent and popularized “What Would Jesus Do?” perspective (Haley, White, & Cunningham, 2001; Sheldon, 1898). Models were significantly less common among participants of Asian descent, perhaps due to higher rates of adherence to non-theistic and non-Christian traditions, and consistent with findings among US 13–17-year-olds (Smith & Denton, 2005). Finally, mean summary model scores differed between sites. More models were reported at UTN (situated in the “Bible Belt”) than at the other public universities, which was statistically explained by differences in religious affiliation (e.g., more conservative Protestants, multivariate adjusted regressions not shown). More models were also reported at RCU, the only religiously based college, a difference that remained significant after adjusting for other variables in Table 3 singly or in combination (analyses not shown), suggesting possible influences from unmeasured factors, such as campus culture.

Significant relationships supportive of validity were also found between summary models and numerous other psychological constructs. Table 6 shows that many well-known spiritual, religious, and other measures correlated with the summary models in expected patterns. Additional analyses (not shown) revealed that partialling out gender, year in school, and ethnicity caused only slight reductions in the strength and significance of these associations.

More specifically, the first three rows of Table 6 reveal convergent validity by showing that summary models were strongly correlated with attending religious services both at home and at school ($r_s = 0.54$ and 0.49 , respectively), and with frequency of spiritual reading ($r = 0.41$), activities which typically expose an individual to various types of spiritual models. The next four rows give added support by showing that summary models also correlated strongly with prayer, a primary religious/spiritual practice, as well as with measures of spiritual and religious intensity, and the importance of faith. The strength of each of these relations is fairly large according to Cohen’s (1988) criteria that a correlation of 0.10 is small, of 0.30 is medium, and of 0.50 is large.

The next several rows of Table 6 show expected differences in strength of correlation across various measures, supporting both convergent and divergent validity. First, summary models demonstrated a moderate positive correlation with intrinsic religiosity ($r = 0.30$, $p = 0.02$). This is consistent with intrinsic religiosity’s expected motivational support (a primary SCT learning process) for learning from spiritual models. Conversely, the next row shows that extrinsic religiosity, which would not be expected to foster motivation to learn as strongly, was not associated with summary models ($r = -0.09$, $p = 0.49$), supporting divergent validity. Similarly, summary models were positively associated with a secure attachment to God and viewing God as loving, which could provide motivation for moving closer to God through spirituality (convergent validity). But summary models were uncorrelated with anxious God-attachment (divergent validity), and were negatively associated with avoidant attachment to God. They were also negatively associated with viewing God as primarily controlling.

Previous research on mysticism has distinguished three factors of mystical experience termed religious interpretation, introvertive, and extrovertive (Hood, Spilka, Hunsberger, & Gorsuch, 1996). Since spiritual models might influence how one interprets a mystical experience, it is predictable that summary models were moderately associated with the

Table 6. Correlation of summary spiritual models with other psychosocial constructs.

Construct	<i>N</i>	<i>r</i> ^a	<i>p</i>	α ^b	Items	Source	Site(s)
Spirituality/religion							
Attending services: home	1007	0.54	<0.0001	–	1	Fetzer (2003)	All
Attending services: school	1006	0.49	<0.0001	–	–	–	All
Spiritual reading frequency	1003	0.41	<0.0001	–	1	Fetzer (2003)	All
Prayer frequency	1006	0.46	<0.0001	–	1	Fetzer (2003)	All
Spiritual intensity	1008	0.47	<0.0001	–	1	Fetzer (2003)	All
Religious intensity	1008	0.51	<0.0001	–	1	Fetzer (2003)	All
Importance of faith ^d	991	0.46	<0.0001	0.70	2	SMILE (Q3) ^d	All
Relig. Orientation: Intrinsic	60	0.30 ^c	0.02	0.82	9	Gorsuch and Venable (1983)	RCU
Relig. Orientation: Extrinsic	60	–0.09 ^c	0.49	0.73	11	Gorsuch and Venable (1983)	RCU
God image: Loving	962	0.35	<0.0001	0.89	5	Benson and Spilka (1973)	All
God image: Controlling	960	–0.18	<0.0001	0.71	5	–	All
God attachment: Secure ^e	205	0.41	<0.0001	0.93	3	Rowatt and Kirkpatrick (2002)	UCN
God attachment: Anxious	201	0.04	0.55	0.74	3	Rowatt and Kirkpatrick (2002)	UCN
God attachment: Avoidant	203	–0.23	0.001	0.87	3	Rowatt and Kirkpatrick (2002)	UCN
Mysticism: All	255	0.17	0.006	0.91	32	Hood (1975)	UTN
Mysticism: Extrovertive	256	0.05	0.45	0.80	12	Hood (1975)	UTN
Mysticism: Religious interpretation	255	0.27	<0.0001	0.83	12	Hood (1975)	UTN
Mysticism: Introvertive	257	0.12	0.06	0.75	8	Hood (1975)	UTN
Ever change in faith	998	0.39	<0.0001	–	1	Fetzer (2003)	All
Ever change in faith gain in faith	994	0.45	<0.0001	–	1	Fetzer (2003)	All
Ever change in faith loss in faith	994	0.10	0.002	–	1	Fetzer (2003)	All
Belief in afterlife (cross-cult)	445	0.45	<0.0001	0.92	10	Osarchuk and Tatz (1973)	UCA
Belief in eternal life	983	0.46	<0.0001	–	1	Hilty and Morgan (1985)	All
Character strengths/virtues							
Empathic perspective taking	1001	0.11	0.0003	0.77	7	Davis (1980)	All
Empathic concern	213	0.13	0.06	0.80	7	Davis (1980)	UCN
Forgiveness of others	1004	0.15	<0.0001	0.75	6	Thompson and Snyder (2003)	All
Forgiveness of self	73	0.04	0.74	0.78	6	Thompson and Snyder (2003)	RCU
Hope: Total	74	0.22	0.053	0.82	8	Lopez et al. (2003)	RCU
Hope: Agentic	74	0.26	0.03	0.76	4	Lopez et al. (2003)	RCU
Hope: Pathways	74	0.14	0.22	0.74	4	Lopez et al. (2003)	RCU
Gratitude	1003	0.32	<0.0001	0.84	6	McCullough et al. (2002)	All
Sense of compassion	1001	0.10	0.001	–	1	Fetzer (2003)	All
Sense of mercy	1004	0.19	<0.0001	–	1	Fetzer (2003)	All
Other							
Socially desirable responding	1010	–0.04	0.24	0.69	13	Reynolds (1982)	All
Celebrity worship	1005	0.02	0.44	0.76	4	Maltby et al. (2002)	All
Perceived social supp. (6/12)	1007	0.24	<0.0001	0.88	6	Zimet et al. (1988)	All
Perceived social supp.: full scale (12/12)	459	0.24	<0.0001	0.93	12	Zimet et al. (1988)	UCA
Death anxiety	448	0.00	0.95	0.69	15	Templer (1970)	UCA

Note: UCA, UCN, and UTN are public universities in California, Connecticut, and Tennessee, respectively; RCU is a Roman Catholic university in California.

^aPearson correlation coefficients (Spearman coefficients all have similar significance levels, and are within ± 0.05 except as indicated). ^bInternal reliability (Cronbach alpha). ^cSpearman correlations: intrinsic = 0.36 ($p = 0.004$), extrinsic = -0.15 ($p = 0.27$), attributions = 0.27 ($p < 0.0001$). ^dMean of importance for ultimate concerns of faith in God and faith in a universal moral order. ^eScored so that higher values represent more secure attachment.

religious interpretation factor ($r = 0.27$, convergent validity). They were less correlated with reports of actual experiences, either introvertive or extrovertive (although over longer periods of time, such experiences may perhaps be cultivated by spiritual practices).

575 Also predictably, summary models were positively associated with reports of ever having experienced a spiritual change ($r = 0.39$, $p < 0.0001$), as well as with having experienced a gain in one's faith ($r = 0.45$, $p < 0.0001$, convergent validity). Summary models were also positively associated, although quite weakly, with having had a *loss* in one's faith ($r = 0.10$, $p = 0.002$). This may indicate that in order to have any faith to be lost, a person must have experienced some sort of prior exposure to a faith tradition, and could
580 retain admiration for the moral qualities of particular models from that tradition.

Significant positive associations were also found with numerous measures of character strengths and virtues, which most participants agreed were important ultimate concerns (criterion validity). An exception that arguably supports divergent validity was the nonsignificant relation to the pathways subscale of the hope measure. In contrast to
585 the agency subscale's focus on motivation (e.g., "I energetically pursue my goals"), the pathways subscale stresses "the actual production of alternate routes when impeded," and repeatedly invokes the language of instrumental problem solving (e.g., "there are lots of ways around any problem"), a theme less emphasized in most religious and spiritual traditions, or by many models they extol (Lopez, Snyder, & Pedrotti, 2003, pp. 94, 105).
590 Another exception that supports divergent validity was that forgiveness of self was uncorrelated with spiritual models, as well as virtually all other religious and spiritual constructs. This is consistent with previous empirical research (see Toussaint & Williams, 2008), and perhaps reflects its less central role in religious teachings (e.g., it is hardly discussed by Rye et al., 2000).

595 Finally, summary models were not associated with socially desirable responding or with worshipful attitudes towards contemporary celebrities (divergent validity), but were positively associated with perceived social support, which has long been recognized as a correlate of many forms of religious and spiritual involvement. And summary models were not significantly associated with death anxiety, adding to mixed previous findings in both
600 students and adults. Religious teachings about death and afterlife have been theorized to protect against death anxiety, and various measures of religiosity have at times shown inverse relationships with death anxiety. But other studies have found no correlation, and these mixed findings have sometimes varied by faith tradition (e.g., Al-Sabwah & Abdel-Khalek, 2006; Cohen et al., 2005; Ens & Bond, 2007).

605 In additional analyses (not shown), it was found that all of these summary results were largely unchanged by using alternate constructions of the summary measure, for example, dividing by total weight, or summing environmental scores after standardizing by their standard deviations (unweighted and standardized sums of environmental scores correlated very highly, $r = 0.99$).

610 *Open-ended responses*

At the end of the SMILE, participants were invited to supply feedback (Q18) about their experience of completing the questionnaire, or any other reactions. Feedback ranging from 1 to 152 words in length ($M = 24$, $SD = 20$) was received from 34% of participants ($N = 339$). Comments were predominantly positive, and a major theme ($N = 116$) was
615 reports that the questionnaire made them reflect on their beliefs and their life, which almost all appreciated (e.g., "as I go through this questionnaire, I am beginning to realize

that there are more people in my life than I thought that possess these qualities”). Only a very small number expressed negative emotions ($N = 8$, e.g., “I felt sad because I noticed that I am not as religious as I thought I was. I wish I was more religious”). Many explicitly
620 said the questions were interesting or enjoyable ($N = 35$). Many others did not comment directly on their experience of the questionnaire, but elaborated on their philosophy of life/spirituality in general ($N = 108$), or of spiritual models ($N = 57$).

Discussion

This study applied a new measure, the SMILE, to investigate the perceived identities and
625 influence of spiritual models within major social environments of importance to a diverse sample of US college students. Based on concepts from Bandura’s (1986) Social Cognitive Theory, the SMILE was well received by respondents, confirming the viability of its fundamental design features. Numerous SMILE items as well as a summary measure of spiritual modeling influence demonstrated good psychometric properties, including
630 adequate or fairly high 7-week test–retest reliability, and patterns of correlation with other constructs that supported convergent, divergent, and criterion-related validity.

In addition to examining the SMILE’s psychometric properties, the present study provided initial substantive insights about whom US college students regard as spiritual models, and how model perceptions are associated with demographic and other factors.
635 It revealed many group differences in expected directions, as well as substantial individual heterogeneity. Such information can inform planning and design of future studies of patterns, correlates, and changes dynamics over time of spiritual modeling variables, including short- and long-term causal influences on spirituality, health and well-being outcomes (e.g., Oman et al., 2007; Oman & Thoresen, 2007).

640 *Implications for intervention development*

We noted earlier that the spiritual modeling framework (Figure 1) suggests possible interventions at multiple levels (individual/environment) and on multiple factors (model information and availability, meta-beliefs, or implementation intentions). Findings from the present study may inform such interventions in at least two ways. First, they can
645 contribute *content* to some interventions. For example, teachers who conduct classroom spiritual modeling interventions might facilitate student engagement by discussing survey findings about the diversity of cited models as well as the identities of the most commonly cited models within each environment (e.g., mothers, fellow students, ministers, Mother Teresa, etc.). Such discussions could permit students to learn from each other, and from
650 the diversity of student experiences, as well as support critical thinking.

Second, the present findings can inform intervention *design* by assisting efforts to characterize preexisting spiritual modeling assets in individuals and environments (Lerner & Benson, 2003), sometimes called “spiritual capital” (Oman & Thoresen, 2007, p. 42). Despite widespread recognition of the importance of social learning, only a few previous
655 empirical studies of any kind have attempted to directly characterize perceptions of behavioral model availability in social networks or naturalistic social environments (for rare examples see Cobb, Tedeschi, Calhoun, & Cann, 2006 on post-traumatic growth; and Simonton, 1975 on creativity in history).

The present study revealed areas of commonality across groups, but also
660 much individual and group diversity. Clearly, in demographically and spiritually

heterogeneous populations, individuals may vary greatly in the perceived availability of models. Furthermore, the models who are valued are confined neither to a fixed set of everyday roles, nor to prominent models from a single faith tradition (e.g., Table 4). Awareness of these diverse assets and needs should inform individually focused asset-

665 building interventions in heterogeneous populations. Similarly, efforts to enrich social environments to better support spiritual modeling learning processes (attention, retention, etc.) must take into account individual diversity as well as commonalities (e.g., Kristeller et al., 2005; Oman, Flinders, et al., 2008). The present study offers a reference point for characterizing the patterning of perceived spiritual models, and should be comple-

670 mented by studies of the patterning of spiritual modeling meta-beliefs.

Oman, Flinders, and Thoresen (2008) demonstrated the feasibility of interventions based on the present conceptual framework. They described a college course focused on spiritual models that contained both academic and practical (or “scientific” and “lab”) components. Encouraging findings, including large gains in spiritual modeling and well-

675 being measures, emerged from a randomized trial that compared their intervention with both a control group, and with a comparison intervention that lacked an equivalent spiritual modeling component.⁸

More generally, appropriately accommodating diverse faith traditions is important to maintain ethically grounded spiritual modeling interventions in non-denominational social environments. Oman and colleagues (2008) suggest that “the key is not the blurring of religious distinctions or categories but...enabling someone else to practice [his or] her religion” (quoting Gopin, p. 103). For many traditions, pedagogical resources are rich, but few systematic teaching resources are presently available (Oman & Thoresen, 2003a). Depending upon community context, an important challenge may on some occasions

680 involve incorporating committed *atheistic* models of character strengths and virtues. Suitable material can also be found for such models.⁹

685

Strengths and limitations

This study has several strengths including a theoretical framework that is grounded in highly influential psychological theory, and supported by all major faith traditions. It used

690 a large, ethnically and regionally diverse sample, and both internal and test–retest reliability were evaluated. Quantitative validation was obtained from many measures of spirituality and religion, virtues, and other psychosocial constructs, which were complemented by several open-ended questions that provided a more qualitatively oriented validation perspective.

On the other hand, study conclusions should be viewed in light of several limitations. It is unclear to what extent findings may generalize to those who are of other ages, who are not college students, or to students at other types of colleges or outside the US. Comparatively few participants were affiliated with non-Christian religions, leaving less statistical power for testing relationships in these groups. We do not know how results may

700 have been affected by the incorporation in the introductory text and Part I (Q3) of particular virtues and illustrative examples, and the omission of others (e.g., other virtues in Peterson & Seligman, 2004). Respondents were not able to provide separate ratings for influence from prominent models from different time periods. Finally, test–retest reliability estimates may have been affected by administering a SMILE version that

705 contained additional question subparts, as well as using an older and more homogeneous student sample.

Future directions

Although the SMILE measure used in this study is a promising start, research is needed for further validation and on complementary strategies for assessing spiritual modeling variables. For example, qualitative studies could better illuminate the SMILE's strengths and limitations for capturing respondents' full range of relevant perceptions about spiritual models (Belzen & Hood, 2006). Such studies could potentially suggest refining or adding items, or ways of eliminating the summary measure's apparent "floor effects" (abundance of zeros) outside of participants who are both spiritual and religious (see Figure 2). Other potential ways to improve the SMILE include separate assessment of pre- and post-1900 model influence (Q9), alternate introductory lists of illustrative examples and spiritual qualities (Q3), or allowing participants to cite multiple models in everyday social environments (Q4–Q7). Alternate versions of the SMILE are also needed for other age groups (e.g., including the work environment for non-student adults). Cross-cultural validation research beyond the US and primarily Christian cohorts is needed. Last but not least, spiritual modeling research could be facilitated by developing briefer assessments of spiritual models. A nontrivial part of the SMILE's length arises from the communicative challenge of defining spirituality in an inclusive way, suggesting that abbreviated versions might be most readily feasible for homogeneous populations, such as congregants or students at denominational colleges.

Research on substantive questions is also needed. In addition to intervention studies, topics for research include a better understanding of ethnic differences, of spiritual influences on people who report no models; of how spiritual models change over time within individuals; and the role of subconscious processes and influences (Aarts, Gollwitzer, & Hassin, 2004; Hassin, Uleman, & Bargh, 2005).

More generally, we need to understand individual and environmental factors that impede or facilitate the fundamental SCT-based spiritual learning processes of attention, retention, reproduction in behavior, and motivation (Bandura, 1986). Such factors are a perennial concern of religious and spiritual educators, and their conceptualization might benefit from science/religion dialogue (Barbour, 2000; Oman & Thoresen, 2003b). For example, even though "much disparity exists . . . in the role of the spiritual director," the underlying spiritual modeling processes and meta-beliefs could be studied and characterized (Moon, 2002, pp. 269–70). That is, from an empirical spiritual modeling perspective, what are the pedagogical similarities and differences between spiritual mentors such as clergy, Christian spiritual directors, Jewish sages, and Hindu gurus (Csikszentmihalyi & Rathunde, 1990; Oden, 1984; Raina, 2002; Schwartz, Bukowski, & Aoki, 2005)?

Conclusions

We have presented the theoretical basis and an initial psychometric evaluation of the SMILE, the first structured measure focused on spiritual modeling perceptions. In a large and diverse sample of US college students, the SMILE's foundational sections demonstrated good validity and reliability, and were well-received by respondents. Learning from spiritual models is recognized as central to spiritual growth by all major faith traditions, as well as by an influential mainstream psychological theory (Bandura, 2003). Spiritual modeling factors, we argued, are potentially useful foci for both individual-level and environmental-level interventions in established fields such as pastoral psychology, as well as emerging fields such as spirituality and health (Miller & Thoresen, 2003;

Thoresen & Harris, 2002). We hope that the perspectives, tools, and findings described here may be useful for advancing basic scientific understanding as well as effective, ethically grounded interventions to foster spiritual growth, social betterment, and physical health.

Notes

1. The present study's approach to defining spirituality is very similar to the increasingly influential definition of spirituality as a "search for the sacred" (Hill et al., 2000, p. 66; Pargament, 2007, p. 32; Zinnbauer & Pargament, 2005, pp. 35, 36). In presenting this definition, Hill, Pargament and colleagues (2000) specified that "the term 'sacred' refers to a divine being, divine object, Ultimate Reality, or Ultimate Truth as perceived by the individual" (p. 66). Conversely, Emmons (1999) uses the term "ultimate concerns" to refer to "the multiple personal goals that a person might possess in striving toward the sacred... individuals' implicit worldview beliefs give rise to goal concerns that reflect how they 'walk with ultimacy' in daily life" (pp. 6–7)."
2. We felt that concrete illustrations were necessary for communication, despite the potential for biasing results. The relevant SMILE introductory text stated: "For example, some people feel they have learned wise daily living from: Wise people in history—such as writers, philosophers, saints, or figures such as Jesus or the Buddha; Wise people in their family or community, such as their friends, parents, or grandparents; Ordinary people who are partly wise, partly foolish; Many different people (learning little bits of wisdom from each)."
3. The theme of human relationships was far less common among spiritual and/or religious participants, perhaps partly because they received a different variant of Q2 (see Table 1).
4. Compared with others, the "neither" group cited fewer prominent models both pre-1900 (21% vs. 46%) and post-1900 (33% vs. 51%), but the identities and approximate conditional proportions of 5/6 cited models remained unchanged: Before 1900, Jesus, the Buddha, and Abraham Lincoln (36%, 17%, and 8%); After 1900, Mahatma Gandhi, Mother Teresa, and Martin Luther King (31%, 31%, and 17%, respectively).
5. Using either Pearson product-moment or polychoric correlations, factor analyses of the four environmental influence items (Q9) also revealed a single factor, as did factor analyses of the numbers of reported models (Q4–Q7).
6. Socially desirable responding was uncorrelated with influence items (Q9), and with three of the four model counts (Q4–Q7), excepting only number of school models ($r = -0.08$, $p < 0.05$).
7. Thus, internal reliability estimates based on the uncorrelated measurement errors of classical test theory, such as Cronbach's alpha, are not appropriate (Bollen, 1989).
8. Findings from a randomized trial of the Oman et al. (2008) intervention show increases vs. controls at 2-month follow-up in summary spiritual models, especially pre-1900 (Cohen's $d = 0.78$, $p < 0.05$, a "large" effect size). The trial also reported benefits in increased non-materialistic aspirations, more favorable views of God, reductions in dysfunctional religious coping, large gains in mindfulness (viewed as a learning skill), and large gains in two key spiritual modeling meta-beliefs, perceived efficacy for learning from community-based and from prominent spiritual models (all $d_s \geq 0.65$, $p_s < 0.05$; Oman et al., 2007; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). Such a college course could also be viewed as an environmental-level intervention that supports transformation of school-based spiritual modeling meta-beliefs, especially if enduringly integrated into the curriculum. Oman and colleagues (2008) present the course design as compatible with an inclusive definition of spirituality as "seeking a sense of being or becoming connected to something greater than just oneself" (p. 82), operationalized as character strengths and virtues (Peterson & Seligman, 2004).
9. For example, a striking case is provided by Gora (G.R. Rao), a committed atheist who labored with Mahatma Gandhi for Indian independence and social justice. Gora's and Gandhi's relationship exemplifies how theists and atheists can find respectful, trusting, and even affectionate common ground in shared ideals of social service. Gandhi told Gora that "Whether you are in the right or I am in the right, results will prove," but that "I can see an ideal in your talk. I can neither say my theism is right nor your atheism wrong. We are seekers after truth. . . . go ahead with your work. I will help you, though your method is against mine." (Rao, 1951, p. 44).

References

- à Kempis, T. (1441/1952). *The imitation of Christ*. New York: Penguin.
- 810 Aarts, H., Gollwitzer, P.M., & Hassin, R.R. (2004). Goal contagion: Perceiving is for pursuing. *Journal of Personality and Social Psychology*, *87*, 23–37.
- Al-Sabwah, M.N., & Abdel-Khalek, A.M. (2006). Religiosity and death distress in Arabic college students. *Death Studies*, *30*, 365–375.
- 815 Astin, A.W., Astin, H.S., Lindholm, J.A., Bryant, A.N., Calderone, S., & Szelenyi, K. (2005). The spiritual life of college students: A national study of college students' search for meaning and purpose. Higher Education Research Institute, University of California, Los Angeles (full text: <http://spirituality.ucla.edu/reports/index.html>).
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- 820 Bandura, A. (2003). On the psychosocial impact and mechanisms of spiritual modeling. *The International Journal for the Psychology of Religion*, *13*, 167–174.
- Barbour, I.G. (2000). *When science meets religion* (1st ed.). San Francisco: HarperSanFrancisco.
- Belzen, J.A., & Hood, R.W. (2006). Methodological issues in the psychology of religion: Toward another paradigm? *Journal of Psychology: Interdisciplinary and Applied*, *140*, 5–28.
- 825 Benson, P., & Spilka, B. (1973). God image as a function of self-esteem and locus of control. *Journal for the Scientific Study of Religion*, *12*, 297–310.
- Bollen, K.A. (1989). *Structural equations with latent variables*. Wiley: New York.
- Boyatzis, C.J., Dollahite, D.C., & Marks, L.D. (2005). The family as a context for religious and spiritual development in children and youth. In E.C. Roehlkepartain, P.E. King, L. Wagener, & P.L. Benson (Eds.), *The handbook of spiritual development in childhood and adolescence* (pp. 297–309). Thousand Oaks, CA: Sage.
- 830 Campbell, M.K., Hudson, M.A., Resnicow, K., Blakeney, N., Paxton, A., & Baskin, M. (2007). Church-based health promotion interventions: Evidence and lessons learned. *Annual Review of Public Health*, *28*, 213–234.
- 835 Cobb, A.R., Tedeschi, R.G., Calhoun, L.G., & Cann, A. (2006). Correlates of posttraumatic growth in survivors of intimate partner violence. *Journal of Traumatic Stress*, *19*, 895–903.
- Cohen, A.B., Pierce Jr, J.D., Chambers, J., Meade, R., Gorvine, B.J., & Koenig, H.G. (2005). Intrinsic and extrinsic religiosity, belief in the afterlife, death anxiety, and life satisfaction in young Catholics and Protestants. *Journal of Research in Personality*, *39*, 307–324.
- 840 Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Csikszentmihalyi, M., & Rathunde, K. (1990). The psychology of wisdom: An evolutionary interpretation. In R.J. Sternberg (Ed.), *Wisdom: Its nature, origins, and development* (pp. 25–51). New York: Cambridge University Press.
- 2 845 Davis, M.H. (1980). A multidimensional approach to individual differences in empathy. *Catalog of Selected Documents in Psychology*, **1**, **111**.
- Emmons, R.A. (1999). *The psychology of ultimate concerns: Motivation and spirituality in personality*. New York: Guilford.
- Ens, C., & Bond Jr, J.B. (2007). Death anxiety in adolescents: The contributions of bereavement and religiosity. *Omega: Journal of Death and Dying*, *55*, 169–184.
- 3 850 Fetzer, **1**. (2003). *Multidimensional measurement of religiousness/spirituality for use in health research* (2nd ed.). Kalamazoo, MI: Fetzer Institute (full text: <http://www.fetzer.org>).
- Gallup, G., & Lindsay, D.M. (1999). *Surveying the religious landscape: Trends in U.S. beliefs*. Harrisburg, PA: Morehouse.
- 855 Glanville, J.L., Sikkink, D., & Hernandez, E.I. (2008). Religious involvement and educational outcomes: The role of social capital and extracurricular participation. *The Sociological Quarterly*, *49*, 105–137.
- Glenn, C.L. (2003). Public education changes partners. In H. Hecl, & W.M. McClay (Eds.), *Religion returns to the public square: Faith and policy in America* (pp. 299–325). Washington, DC: Woodrow Wilson Center Press.

- 860 Gorsuch, R.L., & Venable, G.D. (1983). Development of an "age universal" I-E scale. *Journal for the Scientific Study of Religion*, 22, 181–187.
- Haley, E., White, C., & Cunningham, A. (2001). Branding religion: Christian consumers' understandings of Christian products. In D.A. Stout, & J.M. Buddenbaum (Eds.), *Religion and popular culture* (pp. 269–288). Ames, IA: Iowa State University Press.
- 865 Hassin, R.R., Uleman, J.S., & Bargh, J.A. (Eds.). (2005). *The new unconscious*. New York: Oxford University Press.
- Hendrick, C., & Hendrick, S. (1986). A theory and method of love. *Journal of Personality and Social Psychology*, 50, 392–402.
- 870 Hill, P.C., Pargament, K.I., Hood Jr, R.W., McCullough, M.E., Swyers, J.P., Larson, D.B., et al. (2000). Conceptualizing religion and spirituality: Points of commonality, points of departure. *Journal for the Theory of Social Behaviour*, 30, 51–77.
- Hilty, D.M., & Morgan, R.L. (1985). Construct validation for the religious involvement inventory: Replication. *Journal for the Scientific Study of Religion*, 4, 75–86.
- Hood, R.W. (1975). The construction and preliminary validation of a measure of reported mystical experience. *Journal for the Scientific Study of Religion*, 14, 29–41.
- 875 Hood, R.W., Spilka, B., Hunsberger, B., & Gorsuch, R. (1996). *The psychology of religion: An empirical approach*. New York: Guilford.
- Huppert, F. (2004). A population approach to positive psychology: The potential for population interventions to promote well-being and prevent disorder. In P.A. Linley, & S. Joseph (Eds.), *Positive psychology in practice* (pp. 693–709). New York: Wiley.
- 880 Kristeller, J.L., Rhodes, M., Cripe, L.D., & Sheets, V. (2005). Oncologist assisted spiritual intervention study (OASIS): Patient acceptability and initial evidence of effects. *International Journal of Psychiatry in Medicine*, 35, 329–347.
- 885 Lent, R.W., & Lopez, F.G. (2002). Cognitive ties that bind: A tripartite view of efficacy beliefs in growth-promoting relationships. *Journal of Social & Clinical Psychology*, 21, 256–286.
- Lerner, R.M. (2008). Spirituality, positive purpose, wisdom, and positive development in adolescence: Comments on Oman, Flinders, and Thoresen's ideas about "integrating spiritual modeling into education." *The International Journal for the Psychology of Religion*, 18, 108–118.
- Lerner, R.M., & Benson, P.L. (2003). *Developmental assets and asset-building communities: Implications for research, policy, and practice*. New York: Kluwer Academic/Plenum Publishers.
- 890 Lopez, S.J., Snyder, C.R., & Pedrotti, J.T. (2003). Hope: Many definitions, many measures. In S.J. Lopez, & C.R. Snyder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 91–106). Washington, DC: American Psychological Association.
- 895 Maltby, J., Houran, J., Lange, R., Ashe, D., & McCutcheon, L.E. (2002). Thou shalt worship no other gods—unless they are celebrities: The relationship between celebrity worship and religious orientation. *Personality and Individual Differences*, 32, 1157–1172.
- McCullough, M.E., Emmons, R.A., & Tsang, J.-A. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, 82, 112–127.
- Mikulincer, M., & Shaver, P.R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford.
- 900 Miller, W.R., & Thoresen, C.E. (2003). Spirituality, religion, and health: An emerging research field. *American Psychologist*, 58, 24–35.
- Moon, G.W. (2002). Spiritual direction: Meaning, purpose, and implications for mental health professionals. *Journal of Psychology & Theology* [Special Issue: Psychotherapy and spiritual direction, part I], 30, 264–275.
- 905 Nippert-Eng, C.E. (1996). *Home and work: Negotiating boundaries through everyday life*. Chicago: University of Chicago Press.
- Nord, W.A., & Haynes, C.C. (1998). *Taking religion seriously across the curriculum*. Alexandria, VA: Association for Supervision and Curriculum Development.
- 910 Oden, T.C. (1984). *Care of souls in the classic tradition*. Philadelphia: Fortress Press.

- Oman, D., Flinders, T., & Thoresen, C.E. (2008). Integrating spiritual modeling into education: A college course for stress management and spiritual growth. *The International Journal for the Psychology of Religion, 18*, 79–107.
- 915 Oman, D., Shapiro, S.L., Thoresen, C.E., Flinders, T., Driskill, J.D., & Plante, T.G. (2007). Learning from spiritual models and meditation: A randomized evaluation of a college course. *Pastoral Psychology, 55*, 473–493.
- Oman, D., & Thoresen, C.E. (2003a). The many frontiers of spiritual modeling. *The International Journal for the Psychology of Religion, 13*, 197–213.
- 920 Oman, D., & Thoresen, C.E. (2003b). Spiritual modeling: A key to spiritual and religious growth? *The International Journal for the Psychology of Religion, 13*, 149–165.
- Oman, D., & Thoresen, C.E. (2005). Do religion and spirituality influence health? In R.F. Paloutzian, & C.L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (pp. 435–459). New York: Guilford.
- 925 Oman, D., & Thoresen, C.E. (2007). How does one learn to be spiritual? The neglected role of spiritual modeling in health. In T.G. Plante, & C.E. Thoresen (Eds.), *Spirit, science and health: How the spiritual mind fuels physical wellness* (pp. 39–54). Westport, CT: Praeger.
- Oman, D., Thoresen, C.E., & Driskill, J.D. (2008). *So help me God: A social cognitive approach to God-mediated control*. Paper presented at colloquium on Cognitive Science and Religion, sponsored by University of California at Berkeley, and Graduate Theological Union, Berkeley, CA, March 6.
- 930 Osarchuk, M., & Tatz, S.J. (1973). Effect of induced fear of death on belief in afterlife. *Journal of Personality and Social Psychology, 27*, 256–260.
- Paloutzian, R.F. (2005). Religious conversion and spiritual transformation: A meaning-system analysis. In R.F. Paloutzian, & C.L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (pp. 331–347). New York: Guilford.
- 935 Pargament, K.I. (2007). *Spiritually integrated psychotherapy: Understanding and addressing the sacred*. New York: Guilford Press.
- Peterson, C., & Seligman, M.E.P. (2004). *Character strengths and virtues: A handbook and classification*. Washington, DC and New York: American Psychological Association and Oxford University Press.
- 940 Plante, T.G. (2007). Integrating spirituality and psychotherapy: Ethical issues and principles to consider. *Journal of Clinical Psychology, 63*, 891–902.
- Post, S.G., Puchalski, C.M., & Larson, D.B. (2000). Physicians and patient spirituality: Professional boundaries, competency, and ethics. *Annals of Internal Medicine, 132*, 578–583.
- 945 Powell, L.H., Shahabi, L., & Thoresen, C.E. (2003). Religion and spirituality: Linkages to physical health. *American Psychologist, 58*, 36–52.
- Raina, M.K. (2002). Guru-shishya relationship in Indian culture: The possibility of a creative resilient framework. *Psychology and Developing Societies, 14*, 167–198.
- Rao, G.R. (1951). *An atheist with Gandhi*. Ahmedabad: Navajivan Pub. House.
- 950 Reynolds, W.M. (1982). Development of reliable and valid short forms of the Marlowe–Crowne social desirability scale. *Journal of Clinical Psychology, 38*, 119–125.
- Rowatt, W.C., & Kirkpatrick, L.A. (2002). Two dimensions of attachment to God and their relation to affect, religiosity, and personality constructs. *Journal for the Scientific Study of Religion, 41*, 637–651.
- 955 Rye, M.S., Pargament, K.I., Ali, M.A., Beck, G.L., Dorff, E.N., Hallisey, C., et al. (2000). Religious perspectives on forgiveness. In M.E. McCullough, K.I. Pargament, & C.E. Thoresen (Eds.), *Forgiveness: Theory, research, and practice* (pp. 17–40). New York: Guilford.
- Schwartz, K.D., Bukowski, W.M., & Aoki, W.T. (2005). Mentors, friends, and gurus: Peer and nonparent influences on spiritual development. In E.C. Roehlkepartain, P.E. King, L. Wagener, & P.L. Benson (Eds.), *The handbook of spiritual development in childhood and adolescence* (pp. 310–323). Thousand Oaks, CA: Sage.
- 960

- Shapiro, S.L., Oman, D., Thoresen, C.E., Plante, T.G., & Flinders, T. (2008). Cultivating mindfulness: Effects on well-being. *Journal of Clinical Psychology, 64*, 840–862.
- Sheldon, C.M. (1898). *In his steps: "what would Jesus do?"*. Chicago: Advance Publishing.
- 965 Simonton, D.K. (1975). Sociocultural context of individual creativity: A transhistorical time-series analysis. *Journal of Personality and Social Psychology, 32*, 1119–1133.
- Smedley, B.D., & Syme, S.L. (Eds.). (2000). *Promoting health: Intervention strategies from social and behavioral research*. Washington, DC: National Academy Press.
- Smith, C. (2003). Theorizing religious effects among American adolescents. *Journal for the Scientific Study of Religion, 42*, 17–30.
- 970 Smith, C., & Denton, M.L. (2005). *Soul searching: The religious and spiritual lives of American teenagers*. Oxford; New York: Oxford University Press.
- Steen, T.A., Kachorek, L.V., & Peterson, C. (2003). Character strengths among youth. *Journal of Youth & Adolescence, 32*, 5–16.
- 975 Steensland, B., Park, J.Z., Regnerus, M.D., Robinson, L.D., Wilcox, W.B., & Woodberry, R.D. (2000). The measure of American religion: Toward improving the state of the art. *Social Forces, 79*, 291–318.
- Stokols, D. (1992). Establishing and maintaining healthy environments: Toward a social ecology of health promotion. *American Psychologist, 47*, 6–22.
- 980 Templer, D.I. (1970). The construction and validation of a death anxiety scale. *Journal of General Psychology, 82*, 165–177.
- Thompson, L.Y., & Snyder, C.R. (2003). Measuring forgiveness. In S.J. Lopez, & C.R. Snyder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 301–312). Washington, DC: American Psychological Association.
- 985 Thoresen, C.E., & Harris, A.H. (2002). Spirituality and health: What's the evidence and what's needed? *Annals of Behavioral Medicine, 24*, 3–13.
- Tillich, P. (1951). *Systematic theology*. Chicago: University of Chicago Press.
- Tisdell, E.J. (2007). In the new millenium: The role of spirituality and the cultural imagination in dealing with diversity and equity in the higher education classroom. *Teachers College Record, 109*, 531–560.
- 990 Toussaint, L.L., & Williams, D.R. (2008). National survey results for Protestant, Catholic, and nonreligious experiences of seeking forgiveness and of forgiveness of self, of others, and by God. *Journal of Psychology and Christianity, 27*, 120–130.
- Youniss, J., McLellan, J.A., & Yates, M. (1999). Religion, community service, and identity in American youth. *Journal of Adolescence, 22*, 243–253.
- 995 Zimet, G.D., Dahlem, N.W., Zimet, S.G., & Farley, G.K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*, 30–41.
- Zinnbauer, B.J., & Pargament, K.I. (2005). Religiousness and spirituality. In R.F. Paloutzian, & C.L. Park (Eds.), *The handbook of the psychology of religion and spirituality* (pp. 21–42). New York: Guilford.
- 1000 Zinnbauer, B.J., Pargament, K.I., Cole, B., Rye, M.S., Butter, E.M., Belavich, T.G., et al. (1997). Religion and spirituality: Unfuzzifying the fuzzy. *Journal for the Scientific Study of Religion, 36*, 549–564.

1005 **Appendix 1: Explanation of theoretical framework**

The purpose of this appendix is to clarify and further elaborate the conceptual framework represented in Figure 1. To help guide future theory and application of the SMILE, it illustrates and clarifies intra-individual factors, environmental factors, relationships, individual and group spiritual modeling meta-beliefs, and the patterning of modeling perceptions.

1010 ***Intra-individual factors***

At the core of the model are factors within the focal individual, represented as the oval in Figure 1. Key internal factors include an individual's spiritual beliefs, as well as related factors such as

1015 spiritual experiences, previously learned information about model behaviors, and motivation to learn from models. These factors are not static and are closely connected to social learning processes, such as *attention*, *retention*, and *motivation*. They change and evolve over an individual's life course, sometimes dramatically, as in cases of spiritual transformation (Paloutzian, 2005). Like other forms of social learning, spiritual modeling may take place either consciously or subconsciously (Aarts et al., 2004; Hassin et al., 2005; Oman & Thoresen, 2003b).

1020 Of special interest are an individual's *spiritual modeling meta-beliefs*, a subset of spiritual beliefs, represented as the central circle in Figure 1. These beliefs concern ideas about how and why people learn from spiritual models. They represent a subset of metacognitive beliefs. Depending on how a researcher defines spirituality, different components of an individual's belief system may qualify as spiritual meta-beliefs. For example, if spirituality is defined theistically in relation to a deity, then many life-long non-believers may have few spiritual modeling meta-beliefs beyond the opinion that "learning theistic spirituality from anyone is irrelevant to my personal life." In contrast, most people may be viewed as holding spiritual modeling meta-beliefs when spirituality is defined in other ways, such as a search related to perceived sacred qualities or ultimate concerns (Emmons, 1999; Hill et al., 2000; Pargament, 2007).

1030 Regardless of how spirituality is defined, spiritual modeling processes may be influenced by meta-beliefs, represented as bullet points in Figure 1. Such beliefs may concern *criteria* for recognizing a worthwhile spiritual model (e.g., qualities such as compassion or faith); the *value and function* of learning from spiritual models (e.g., spiritual, social, or physical benefits); *aids* for learning (e.g., devotional reading, meditation, fellowship); observable *signs or conditions* for learning (e.g., born-again experiences); and one's *efficacy perceptions* about one's current capacity to learn from spiritual models. Such efficacy perceptions may pertain to *autonomous* efficacy, as well as to socially or divinely assisted forms of efficacy. The latter are sometimes called *proxy efficacy* and *integral efficacy* (Bandura, 2003; Oman, Thoresen, & Driskill, 2008).

1040 Spiritual modeling meta-beliefs guide choices in behavior, attention, and affiliation, and may be held at a conscious or unconscious level (Aarts et al., 2004; Hassin et al., 2005). For example, in concert with an individual's spiritual and religious beliefs (the octagon in Figure 1), spiritual modeling meta-beliefs, whether conscious or subconscious, may influence choices of friends, vocations, marital partners, and/or membership in groups. In some cases meta-beliefs about spiritual modeling may help inspire life-long commitments to particular spiritual practices, directors, teachers, or lifestyles. As represented in the "Behaviors" and "Outcomes" boxes in Figure 1, these behaviors and choices may also beneficially or adversely affect other outcomes of interest. These outcomes may include mental, physical, and spiritual health, academic achievement, prosocial behavior, and civic engagement.

1045 **Environmental factors**

1050 However, an individual's spiritual engagement and meta-beliefs do not arise autonomously—they are also deeply affected by social environments, represented by the outer semicircle in Figure 1. For adults, social environments may include home and family, school, workplace, religious or spiritual organizations, or other environments such as clubs. Different social environments are not completely "compartmentalized," but may reciprocally influence each other to a degree that varies by individual circumstances (e.g., Nippert-Eng, 1996). Electronic, oral, and printed media are also recognized in SCT as major sources of modeling influences for most individuals (Bandura, 1986). For example, the Internet may provide models via YouTube or Facebook sites. Figure 1 highlights influences from family, school, and the media, arguably the most universally salient influences for college students. Also highlighted are influences from the religious or spiritual organizations that are highly relevant to a large majority of US students (Astin et al., 2005; Smith & Denton, 2005). Each social environment is a potential source of spiritual models, such as one's mother, a fellow student, one's minister, or prominent historic or contemporary individuals such as Jesus, the Buddha, Mother Teresa, or Nelson Mandela.

1060 Chances for spiritual learning are clearly constrained if suitable models do not exist *within* each environment (e.g., may be few models in an abusive family). These chances may also be encouraged by other environmental factors that are implicit in Figure 1, but not spelled out. An environment's norms may be influential. For example, an environment may typically facilitate or impede *attending* to a spiritual model's actions and behaviors if a model's spiritual features are highlighted or if they

are ignored. To illustrate, family norms and conversations might showcase or ignore a devout grandmother's spiritual practices; similarly, a history curriculum might encourage studying Martin Luther King Jr or Gandhi's lifestyles, including religious beliefs and practices, or it may only focus on a few dates and political events associated with them (see Nord & Haynes, 1998).

Group-level meta-beliefs about spiritual modeling are also embedded within each social environment. Such meta-beliefs are distinct from group norms and structures, although over time, they may influence each other. Group-level meta-beliefs are part of everyday social experience, and we all encounter varieties as we move through the day between family, work, neighborhood, and other social environments. A variety of media influences also have recently emerged, such as text messaging, web sites, and cell phones. Such beliefs may range from implicit to overt, from proreligious to anti-religious, and from rudimentary to highly elaborated. For children, family level spiritual modeling meta-beliefs are particularly consequential. The *character and valence* of embedded meta-beliefs—whether proreligious, anti-religious, or neutral—may sometimes be a topic of disagreement. For example, thoughtful observers disagree about whether public educational institutions in the US are truly neutral in their attitude towards religion and spirituality, or may unintentionally but systematically convey an anti-religious perspective (e.g., “we teach students to think about the world in exclusively secular ways... [although] it is not the conscious intention of educators to marginalize religion,” Nord & Haynes, 1998, pp. 201–202).

Relationships

Finally, Figure 1 uses double-headed arrows to represent person-to-environment influences and relationships. First, the individual is viewed as capable of influencing the surrounding social environments, following SCT's concept of “triadic reciprocal causation” between personal factors, behavior, and the environment (Bandura, 1986, p. 24). Second, interpersonal relationships that involve mutual knowledge and awareness, especially attachment relationships, may sometimes exercise disproportionate influence (Lent & Lopez, 2002; Mikulincer & Shaver, 2007). Processes such as attention, retention, and motivation to learn from a particular community-based model (e.g., a favorite grandmother) or prominent spiritual model (e.g., Jesus or the Dalai Lama) may be facilitated by an individual's belief and valuation of a personal relationship with that model. Such relationships may serve as support an individual in learning a variety of spiritual behaviors and attitudes. This could include absorbing spiritual modeling meta-beliefs. Smith and Denton (2005, p. 243) note that people who develop personal relationships with models may often become “personally invested in sustaining the relationships,” which commonly involves “affirming and enacting” the modeled qualities and worldviews.

Patterning of modeling perceptions

Figure 1 shows that an individual's meta-beliefs and perceptions of spiritual models are influenced by multiple and often conflicting sources. Contradictory messages are almost certain to occur in different social environments, or be received from different people within those environments. Through both conscious and subconscious processes, however, most individuals can be expected to develop at least moderately coherent patterns of belief, perception, and behavioral responses that help them navigate diverse relationships and social environments.