

# Counting the Nonreligious: A Critical Review of New Measures



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**Abstract** The rise of the “nones”—individuals who are variously nonreligious—has recently piqued the interest of social scientists, not least because levels of secularization in the United States seem to now be catching up to those in Western Europe. The study of the nonreligious, though, can sometimes seem like the study of people who do not play ball, as terms like nonreligious, atheist, and agnostic are defined in terms of absence. The consequent methodological assumption is that measures of nonreligiosity are simply reverse-scored measures of religiosity. This assumption, however, oversimplifies the phenomenon. Like religiosity, nonreligiosity is a multidimensional phenomenon. Just as there are different religious orientations—intrinsic, extrinsic, quest, fundamentalist, and so forth—there are also different ways of being nonreligious. Just as there are multiple routes to religion, so it is for nonreligion. And just as there are religious interpretations of human experiences, there are nonreligious experiences of awe and value and meaning. In this chapter, we consider the conceptual issues involved in the measurement of nonreligious phenomena and introduce the reader to five scales measuring nonreligiosity.

**Keywords** Atheism · Nonbelief · Nonreligion · Secular · Humanism · Prejudice

The scientific study of religion is incomplete without an account of those who are variously *not* religious. Sociologists have always known this: the secularization thesis—the notion that religious decline follows societal modernization—has been a major subject of research and debate among sociologists of religion for decades, and remains so (e.g., Berger, 1990; Bruce, 2011; Martin, 1978; Zuckerman, Galen, & Pasquale, 2016). Psychologists of religion—among whose ranks we count ourselves—have been somewhat slower to turn their attention in this direction, though

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recent theories on the cognitive foundations of religious belief have triggered debate about whether and how the absence of religious belief might be psychologically possible (Barrett, 2010; Bering, 2010; Coleman III, Hood Jr., & Shook, 2015; Coleman III, Sevinç, Hood Jr., & Jong, 2019; Messick & Farias, 2019; Norenzayan & Gervais, 2013; Saler & Ziegler, 2006; Shook, 2017; Van Eyghen, 2016). In the most general terms, scholars of religion are increasingly interested in describing or explaining a related cluster of phenomena that might be reasonably called *nonreligion* (Lee, 2012), a term we prefer for its breadth relative to other commonly-used terms that revolve around theism (e.g., atheism, anti-theism; Bullivant, 2013) and the secular (e.g., secularism, secularization; Casanova, 2009; Zuckerman et al., 2016).

In this chapter, we introduce social scientists of religion to new developments in the measurement of the nonreligious. First, we examine the difficulty with defining nonreligion, before characterizing the diversity of nonreligious experience. Second, we discuss sociological and psychological approaches to measuring nonreligion, before assessing the structure, reliability, validity, and utility of five recent measures. In closing, we reflect on the possibility of multicultural applications and cautiously encourage the development of new measures of nonreligion.

## 1 Theoretical Basis

### 1.1 Defining Nonreligion

Lee's (2012, p. 131) definition of "nonreligion" is as good a place as any to begin: "Non-religion is any position, perspective or practice which is *primarily* defined by, or in relation to, religion, but which is nevertheless considered to be other than religious." It is a good place to begin, but immediately raises the problem of defining religion, about which much ink has already been spilt and over which much hand-wringing is ritualistically prefatorily performed by other scholars (e.g., Coleman III & Hood Jr., 2015; Jong, 2015; McCutcheon, 2007; Taves, 2009). Our own view is that guilt over imperfect definitions is largely unnecessary, and that the demand for definitions that specify necessary and sufficient conditions for some phenomenon to count as religious is predicated on the conceptual and empirical error that there is such a thing as religion. There is not: or rather, religion is not a natural kind of object or entity such that it would be amenable to essentialist definition and identification (Boyer, 2010; Jong, 2015). To be sure, some of the phenomena that we commonly label as religious may share certain traits in common, but there is no set of traits that invariably and exclusively occur among them all. All definitions of religion are susceptible to what (Jong, 2015; Jong & Halberstadt, 2016) has dubbed the *Buddhism* and *Football* problems. For example, definitions of religion that

revolve around supernatural belief face the objection that Theravada Buddhism—which scholars of religion strongly prefer to continue studying—is philosophically atheistic, while those that revolve around the presence of collective rituals and identities face the converse objection that too many things, including football fandom, may be included under such promiscuous criteria.

None of this is to say that our subject matter is illusory. The decline in self-reported religious affiliation, religious service attendance, and theistic belief are all real and measurable phenomena, as is recent interest in books like *The God Delusion* (Dawkins, 2006) and *God is Not Great* (Hitchens, 2007) and in gatherings like the Sunday Assembly that is a “secular congregation that celebrates life,” self-described as being “like church but totally secular and inclusive of all — no matter what they believed” (<https://www.sundayassembly.com/story>, ¶5, ¶1). Nor is it to say that the referents of our terms are self-evident: religion and its cognates will always be contested terms, but the arguments should not be about exhaustiveness but about relevance to the interests of any given scholarly community and purpose. In other words, definitions are irreducibly and inescapably matters of convention and can thus be adjudicated only by convention. Furthermore, scientific definitions are tools, whose purpose is to specify and delimit an area of inquiry, and therefore to guide research activities. The cost of defining religion too narrowly or too broadly is not that such definitions are *wrong*, but that they are unhelpful.

With this in mind, we stipulate that religion pertains to the belief in supernatural agents, where supernatural is defined in cognitive terms (as opposed to metaphysical ones à la Draper, 2005) as the violation of psychologically universal intuitive expectations (cf., Boyer, 2010; though see Dein, 2016; Taves, 2015). This is not a theoretically neutral definition; but then again, no definitions are theory neutral. It is, however, an admittedly narrow definition, emphasizing one aspect of religion (viz., belief) over others, such as religious observance or social identity. This puts us at variance with social scientists that might be interested specifically with such phenomena as the rejection of *organized* religion or distrust in religious *authority*. Such phenomena are not strictly excluded from our analysis—or from this chapter—but we should be clear and upfront about our prejudices.

Now, to revisit Lee’s definition of nonreligion: to paraphrase, nonreligious phenomena are those defined in relation to and distinguished from, the belief in supernatural agents. This is not to say that nonreligion is nonbelief *per se*, but it does entail that nonreligious believing, belonging, behaving, and so forth must be defined against supernatural belief to be counted. As we shall see, the most salient and measurable phenomena revolve around the rejection of religious identity (and adoption of various nonreligious ones) as well as of religious belief. Recent empirical and theoretical work, however, has included richer approaches to nonreligion than binaries concerning belief and identity.

## 1.2 *The Varieties of Nonreligious Experience*

**Taxonomizing Nonreligion** Just as religiosity is a diverse phenomenon, there is increasing recognition of the diversity within people who are nonreligious. There have, for example, been attempts to taxonomize nonreligious individuals based on the possible causes and reasons for their religious disbelief (Norenzayan & Gervais, 2013; Silver, Coleman III, Hood Jr., & Holcombe, 2014). Overlapping with some of this work, there have also been attempts to investigate the content of worldviews held by nonreligious individuals, and how these may differ from religious worldviews (Coleman III & Arrowood, 2015; Coleman III, Silver, & Holcombe, 2013; Coleman III, Silver, & Hood Jr., 2016; Keller, Bullik, Klein, & Swanson, 2018; Lee, 2014; Schnell, 2015; Silver et al., 2014). Very recently, researchers have also begun to investigate how the nonreligious experience moments of profundity and transcendence (e.g., Coleman III et al., 2013; Coleman III, Silver, & Hood Jr., 2016; Delaney, 2016; Zuckerman, 2014), sometimes even labeled as nontheistic spirituality (e.g., Ai & Wink, in press; Coleman III et al., 2016; Deal & Magyar-Russell, 2018; Preston & Shin, 2017). On a more negative note, there has also been some research on nonreligious individuals' experiences of discrimination, sometimes called anti-atheist prejudice (Hammer, Cragun, Hwang, & Smith, 2012). These nascent investigations add some complexity to our minimal definition of nonreligion and should motivate the construction and validation of new ways to measure these phenomena. As we shall see, however, attempts to measure nonreligion have largely shied away from building on these richer accounts of nonreligion, cleaving closely to our minimalist definition. This provides ample opportunity for psychometricians to step in and fill this methodological lacuna.

Even on a minimalist account of nonreligiosity, it is possible to characterize nonreligious individuals based on the various causes and effects of their nonreligiosity. For example, Norenzayan and Gervais's (2013) typology posits four categories of atheism based on different psychological causes of religious disbelief. *Mindblind atheism* is caused by poor mentalizing skills that are allegedly crucial for the development of religious beliefs (e.g., Caldwell-Harris, Murphy, Velazquez, & Mcnamara, 2011; Norenzayan, Gervais, & Trzesniewski, 2012); *Apathism* is caused by lack of motivation to believe in supernatural powers because existentially secure environments supply practical and psychological needs previously fulfilled by religion (e.g., Norris & Inglehart, 2015); *InCREDulous atheism* is caused by the lack of credible religious models or the presence of credibility-undermining behaviors (e.g. Lanman, 2012; Lanman & Buhrmester, 2017); *Analytic atheism* is caused by deliberate reasoning and information-seeking (e.g., Daws & Hampshire, 2017; Pennycook, Ross, Koehler, & Fugelsang, 2016). This typology was built on empirical and theoretical foundations from the social and cognitive psychology of religion, but more recent evidence has been mixed for some of these types, especially concerning the role of mentalizing and analytical thinking in religious belief (Coleman III, 2016; Daws & Hampshire, 2017; Farias et al., 2017; Lindeman & Lipsanen, 2016).

Silver et al. (2014) have also developed a typology of nonreligion, albeit focused on reasons rather than causes, and also on related interests and activities. Their interviews and survey of American nonbelievers led them to posit six types of atheist/agnostic individuals. The *Intellectual* rejects religious belief on intellectual grounds and is interested in self-educational endeavors, and in discussing scientific and philosophical issues. The *Activist* is critical of traditional religious morality and is concerned with such socio-political issues as environmentalism, feminism, and LGBTQ rights, which are often seen as being at odds with religious authority. The *Anti-Theist* is typically opposed to religion on both intellectual and moral grounds and actively seeks the demise of religion. The *Ritual* atheist/agnostic finds great interest and appreciation in activities usually associated with religion, such as ritual, ceremony, and tradition, and some may still participate in religious activities despite not believing in the associated doctrines. The *Seeker* is less likely to be an atheist than an agnostic and may even be comfortable with the label of spiritual were it to imply a naturalistic outlook that rejects dogmatism and embraces uncertainty. The *Non-Theist* is apathetic to the (non)existence of gods. This typology has not yet been subjected to rigorous empirical scrutiny, but similar findings have been reported in the surrounding literature (Beaman & Tomlins, 2015; Caldwell-Harris, 2012; Cragun, Manning, & Fazzino, 2017; Schnell, 2015; Smith, 2013; Quack & Schuh, 2017).

**Secular Spirituality and Worldviews** Taves, Asprem, and Ihm (2018) argue that while nonbelievers and believers make competing claims about a single feature of reality, these claims are usually also combined with shared sets of complex representations related to answering life's big questions, especially those concerning how we ought to live. In other words, nonreligious individuals may have rich worldviews that are related but not simply reducible to their lack of religious belief. For example, because they reject supernaturally endowed values, nonreligious individuals might actively construct systems of meaning from a variety of cultural sources (Schnell & Keenan, 2011; Speed, Coleman III, & Langston, 2018). One source of meaning commonly held by nonreligious individuals in the industrialized West stems from science. Some research suggests that belief in science can, like belief in gods, function as a compensatory control mechanism that reduces anxiety and discomfort through the perception of order (Farias, Newheiser, Kahane, & De Toledo, 2013; Rutjens, Van Harreveld, Van der Pligt, Kreemers, & Noordewier, 2013). Other sources of meaning come from experiences of nonreligious transcendence or spirituality, including feelings of awe and wonder directed at the natural world or connection to the universe and humanity (Caldwell-Harris, Wilson, LoTempio, & Beit-Hallahmi, 2010; Coleman III et al., 2013; Coleman III, Silver, & Hood Jr., 2016; Deal & Magyar-Russell, 2018; Preston & Shin, 2017). Although investigation into the varieties of nonreligious experience has only recently begun, this research can be used to identify positive nonreligious constructs to measure, based on what the beliefs and values nonreligious individuals do have rather than those they lack.

**Anti-Atheist Prejudice** One of the downsides to the varieties of nonreligious experience is manifested in the form of discrimination. When atheists make their identities publicly known, they report experiencing increased discrimination such as being denied opportunities, services, and even suffering verbal and physical abuse (Hammer et al., 2012). In some countries around the world, the penalty for atheism can mean jail time or even death (Sevinç, Coleman, & Hood, 2018). Although there is a wealth of studies exploring the reasons for the existence of anti-atheist prejudice (Edgell, Gerteis, & Hartmann, 2006; Gervais, 2014; Gervais et al., 2017; Swan & Heesacker, 2012), only Hammer et al. (2012) have studied of this prejudice from the perspective of the receiver. More research like this is needed, and thus research instruments to document perceived prejudice will be critical. Despite the widespread documentation of prejudice across disciplines, there are surprisingly few published measures of perceived prejudice against the nonreligious. In the methods and findings section, we review two recently established scales.

## 2 Literature Review

Having just explored some of the psychological research on religion and nonreligion, we are now confronted with the fact alluded to earlier that the social scientific study of nonreligion has until recently been the more-or-less exclusive purview of sociologists (Lee, 2012). It is therefore unsurprising that the dominant approach to measuring nonreligion revolves around commonly used methods in sociology, chiefly census-type questions and single-item social attitude measures.

### 2.1 Sociological Approaches to Measuring Nonreligion

**Counting (Non)Religious Identification** According to the Pew Research Center's (2015b) *The Future of World Religions* report, the estimated number of religiously unaffiliated individuals in the world in 2010 was 1.13 billion, or 16.4% of the global population. Looking specifically at atheism, Keysar and Navarro-Rivera (2013) estimated the number of atheists in the world at between 450 to 500 million individuals, or approximately 7% of the global population. In their "*Nones*" *on the Rise* report, Pew estimated from U.S. survey data that 19.6% of U.S. Americans were religiously unaffiliated in 2012 (Pew Research Center, 2012), with the proportion of atheists at 2.4%. By their 2014 *Religious Landscape Study*, the proportions were 22.8% and 3.1%, respectively (Pew Research Center, 2015a). Looking at the broader European context, in over half of the 22 countries surveyed for the 2014–2016 European Social survey, which operationalizes nonreligion as the self-identification of having no "particular religion or denomination," nonreligious individuals are a majority population (Bullivant, 2018).

How were these religiously unaffiliated individuals and atheists identified? In most large-scale surveys, participants are asked to categorize themselves in terms of their religious identity. For example, Pew's standard question, from which their U.S. estimates generally come, is: "What is your present religion, if any? Are you Protestant, Roman Catholic, Mormon, Orthodox such as Greek or Russian Orthodox, Jewish, Muslim, Buddhist, Hindu, atheist, agnostic, something else, or nothing in particular?" Other research groups use similar questions. The General Social Survey has been asking the same question for over 40 years: "What is your religious preference? Is it Protestant, Catholic, Jewish, some other religion, or no religion?" In 2014, they found that 21% answered *no religion* (NORC at the University of Chicago, 2015). Gallup asks, "What is your religious preference— are you Protestant, Roman Catholic, Mormon, Jewish, Muslim, another religion or no religion?" In 2014, their *no religion* rate was 16%. Similar questions are also to be found in census forms—insofar as national censuses ask questions about religion at all—which are then used to make global estimates, as Pew Research Center (2015b) has done. New Zealand simply asks, "What is your religion?" and supplies a list of options including *no religion* (but not *atheist*) (StatsNZ, 2013). Israel asks the same question but does not seem to provide a *no religion* option at all (Central Bureau of Statistics, 2008). Estonia asks, "Do you have a religious affiliation?" before asking for specifics only if the answer is affirmative (Tiit, 2011). Similar examples abound, and national censuses rarely ask more detailed questions.

While religious (and nonreligious) self-identification is the cornerstone of inquiry in the sociology of religion, it is also common to psychology experiments, as a means of constructing binary variables to be used as individual difference moderators of an experimental effect or correlational relationship. For example, in an experiment investigating the effect of mortality salience on explicit supernatural belief, Jong et al. (2012, Study 1) used *religious* and *nonreligious* identification in an interaction term with their experimental manipulation. In an investigation into the relationship between mentalizing skills and religiosity, Maij et al. (2017, Study 3) used participant self-identification as *atheist* and *believer* as outcome variables. In a cross-cultural study investigating the relationship between dogmatic tendencies and (non)religiosity, Uzarevic, Saroglou, and Clobert (2017) conducted a structural equation model comparing *atheist*, *agnostic*, and *Christian* groups based on self-identification.

**Counting Religious (Non)Belief** Measures of religious affiliation—or lack thereof—are measures of *social identity* and are equivocal proxies for belief and behavior. Although most estimates of nonreligion do come from such measures, there have also been attempts to look at rates of religious unbelief *per se*, such as atheism (i.e., not believing in God). Keysar and Navarro-Rivera (2013) global estimates come largely from the International Social Survey Programme that has the following question in their 40-country survey:

*Please indicate which statement below comes closest to expressing what you believe about God.*

1. I don't believe in God
2. I don't know whether there is a God and I don't believe there is any way to find out
3. I don't believe in a personal God, but I do believe in a Higher Power of some kind
4. I find myself believing in God some of the time, but not at others
5. While I have doubts, I feel that I do believe in God
6. I know God really exists and I have no doubts about it

Keysar and Navarro-Rivera (2013) consider respondents who choose option (1) as atheist and those who choose (2) as agnostics. By this definition, they report that, in 2008, the U.S. comprises 5% atheists and 8% agnostics. Besides asking for religious identification, Pew's *Religious Landscape Study* surveys on U.S. American religion have also included questions like "Do you believe in God or a universal spirit?" with follow-up questions about views of God as a person or an impersonal force and additional questions about belief in heaven, hell, and Scripture. Gallup also asks the same question—and has done so since 1976—but also similar others, including "Do you, personally, believe in God?"

Finally, a caveat about measures of religious self-identification bears mentioning. As we have just seen, recent estimates of U.S. American atheism vary from about 3% to 12%, depending on the question asked. There may be reason to think that this is an underestimation, however, because of the perceived social undesirability of atheism (e.g., Gervais et al., 2017) and survey participants' tendency toward socially desirable responding (Paulhus, 2002). Indeed, when Gervais and Najle (2017) used the *unmatched count technique* (e.g., Raghavarao & Federer, 1979), they found that an estimated 32% of their representative sample denied believing in God, in stark contrast to even the highest recent estimates from traditional survey methods.<sup>1</sup> Briefly, the *unmatched count technique* involves presenting a list of traits that might apply to the participant, who then indicates how many of those traits actually do apply to them. To estimate the prevalence of the target trait, usually a socially undesirable trait, is only included in the list for half of the participants. The variance in the total number of *Yes* answers between the two subsamples is therefore attributable to the presence of the socially undesirable trait in one of them.

**Single-Item Attitudinal and Behavioral Measures** Besides questions about religious identity and belief in God, large-scale social surveys also commonly ask other related questions about participants' attitudes and behaviors related to religion. The most relevant attitudinal item that is commonly used refers to the importance of religion in the respondent's life. For example, Pew's *Religious Landscape Study* asks, "How important is religion in your life – very important, somewhat important, not too important, or not at all important?" Similarly, Gallup asks in their U.S. and

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<sup>1</sup>Gervais and Najle's (2017) data and model predict that atheist prevalence exceeds 11% with greater than 0.99 probability and exceeds 20% with roughly 0.8 probability.

global polls, “How important would you say religion is in your own life — very important, fairly important or not very important?”

Large scale surveys also often ask questions about religious behavior, including religious service attendance and private prayer. Gallup asks, “How often do you attend church or synagogue — every week, almost every week, about once a month, seldom or never?” Pew’s question is less specific to Judeo-Christian practice— “Aside from weddings and funerals, how often do you attend religious services — more than once a week, once a week, once or twice a month, a few times a year, seldom, or never?”—and prefers to report *Seldom* and *Never* as the same category (i.e., *Seldom/Never*). Pew also asks a question about private practice: “People practice their religion in different ways. Outside of attending religious services, do you pray several times a day, once a day, a few times a week, once a week, a few times a month, seldom, or never?” Similarly, the General Social Survey asks, “How often do you attend religious services?” as well as “About how often do you pray?”

**Comparing Sociological Methods** So far, we have considered four ways of counting nonreligious people: by self-identification into categories, by self-reported lack of belief in God, by self-reported attitudes about religion, and by self-reported frequency of religious behavior. All of these methods provide *prima facie* plausible ways of counting nonreligious people; however, they differ in the figures they produce. Focusing just on U.S. American data, recall that Pew found that 22.8% of U.S. Americans claimed no religious affiliation in 2014; the GSS’s estimate was similar, at 21%, and Gallup’s was a lower 16%. This is similar to rates of respondents who say that religion is of little or no importance to them: 21.6% from Pew, 19% from Gallup. Interestingly, however, 13% of those who self-identified as religiously unaffiliated nevertheless rated religion as *very important* (Pew Research Center, 2015a). Self-report data on religious service attendance provides a slightly more nonreligious picture—though given the social desirability of religious service attendance, these figures may be underestimates (Cox, Jones, & Navarro-Rivera, 2014). Pew found that 30% of respondents seldom or never went to church, but also that 4% of the religiously unaffiliated attended services weekly. The GSS found similar rates, with 26.2% never attended religious services. Gallup’s figures are higher, with 17% never attending and 30% seldom attending. Personal prayer was more commonly practiced than service attendance but still commensurate with religious affiliation rates. GSS found that 14.7% of responses never prayed. According to Pew, 23% of respondents seldom or never prayed outside of religious services, although 20% of religious unaffiliated people did. These figures stand in contrast to rates of disbelief in God. When asked specifically about belief in God, Pew found that 9% and Gallup found that 11–12% did not believe, though recall that Gervais and Naijle (2017) estimated rates of disbelief in God at 32%. Rates of people who explicitly self-identified as atheist were lower still (3.1%, Pew Research Center, 2015a).

## 2.2 *Psychological Approaches to Measuring Nonreligion*

Psychologists are less interested in counting the number of religious and nonreligious people within a population than in measuring the extent of individuals' irreligiosity. This is why they tend to prefer to measure ordinal and interval variables over categorical ones, at least as dependent measures. Furthermore, psychologists prefer to use multiple items to measure a single construct, in part because they assume that this averages out the random error for any single item, though to Gardner, Cummings, Dunham, and Pierce's (1998) point, according to the psychometric theory, a good single item is better than multiple bad ones. Just as most sociological methods described above operationalize nonreligion as the absence of religion—e.g., self-categorizing as *not* have a religious affiliation, answering *No* when asked if they believe in God, reporting the lack of religious observance—the analogous move among psychologists is to treat low scores on measures of religiosity as indicators of nonreligion.

The standard tool in the psychologist's toolbox is a *scale*, typically a multi-item instrument designed to capture a psychological construct, such an attitude, belief, or emotion. Until very recently, the field known as the psychology of religion was almost exclusively preoccupied with the psychology of American Protestantism (Hood Jr, Hill, & Spilka, 2018). As such, most religiosity scales were designed for religious respondents, in such ways that make them inappropriate for distinguishing between religion and nonreligious participants, let alone for quantifying the extent of an individual's irreligiosity. Take, for example, one of the most commonly used psychometric instruments in the psychology of religion, Allport and Ross's (1967) Religious Orientation Scale (ROS). The ROS is a measure of *how* the respondent is religious; that is, their approach to religion. The measure simply assumes that the respondent is religious and asks about the motivations behind their religiosity. Other religious orientations scales might assess whether the respondent is a fundamentalist about their religion (Altemeyer & Hunsberger, 1992) or whether they approach religion like a journey or quest (Batson & Schoenrade, 1991). Low scores on these measures do not indicate irreligiosity; they indicate a lack of intrinsic or extrinsic or fundamentalist or quest religiosity. Indeed, examining the 126 measures Hill and Hood Jr. (1999) compendium of religiosity measures—still the most comprehensive collection of its kind—Cragun, Hammer, and Nielsen (2015) concluded:

There is not a single measure reported in Hill and Hood Jr. (1999) that can validly assess how religious (vs. nonreligious) and spiritual (vs. nonspiritual) individuals consider themselves, regardless of whether they self-identify as religious, spiritual, or neither. (p. 38)

In short, most measures of religiosity do not work for nonreligious populations insofar as they assume religiosity. Some religiosity measures do exist that might be useful for assessing respondents' *nonreligiosity* as well as their religiosity. For example, the Supernatural Belief Scale (SBS; Jong et al., 2012; Jong & Halberstadt, 2016) was designed to work in secular contexts, as can be seen in the response scale used: positive SBS scores indicate religious belief, negative scores indicate disbelief, and scores approaching 0 indicate agnosticism. Indeed, Jong et al. (2012) found

that the SBS can distinguish between different categories of nonreligious individuals: participants who self-identified specifically as atheists scored significantly lower than those who identified nonreligious in other ways. The SBS comes in two versions, the SBS-10 (Jong et al., 2012) and the SBS-6 (Jong & Halberstadt, 2016), the latter being a revision of the former to improve cross-cultural applicability. Translations of the SBS-6 exist in simplified Chinese, German, Hangul, Hindi, Bahasa Indonesia, Japanese (Hiragana), Portuguese, Russian, Tagalog, Tamil, Thai, and Turkish.

The SBS arguably takes a rather narrow view of what counts as a supernatural agent—essentially, “high” (e.g., God) and “low” gods (e.g., angels, djinn) and human souls—which makes it vulnerable to the criticism made earlier that low (i.e., negative) scores might only indicate disbelief in these particular, albeit cross-culturally common, spiritual beings. In contrast, Tobacyk’s (2004) Paranormal Belief Scale (PBS) includes so-called traditional religious beliefs but also witchcraft beliefs, spiritualist (e.g., astral projection) and precognitive (e.g., astrology) beliefs, cryptozoological beliefs (e.g., the Loch Ness monster), and so forth. Tobacyk’s measure suffers the opposite problem from (Jong et al., 2012; Jong & Halberstadt, 2016) in that quite devout Christians, Muslims, Jews, Hindus, and Buddhists might end up with quite low scores.

Lying somewhere between Jong et al.’s and Tobacyk’s scales is Cragun et al. (2015) NonReligious-NonSpiritual Scale (NRNSS), a 17-item measure that distinguishes between (non)religiosity and (non)spirituality. Participants respond to items about their religious and spiritual beliefs and practices on a 5-point Likert-type scale that, like the SBS, encompasses agreement and disagreement with the items. The NRNSS goes beyond the SBS and the PBS in that it contains a more diverse set of attitudinal and behavioral questions than the others’ focus on supernatural beliefs. For example, besides items like “The supernatural exists”, the NRNSS also includes “I would describe myself as a religious person,” “Religion is not necessary for my personal happiness,” and “I never engage in religious practices.” The distinction drawn between religiosity and spirituality is best construed as one between institutionality and individualism. Their Institutional Religiousness subscale includes such items as “I am guided by religion when making important decisions in my life” and “Religion helps me answer many of the questions I have about the meaning of life,” whereas their “Individualistic Spirituality” subscale includes “I engage in spiritual activities” and “The supernatural exists.” Like the SBS, the NRNSS shows good convergent validity, with higher NRNSS scores being negatively correlated with various single-item measures of religiosity and religious morality and positively correlated with a measure of secular morality (Cragun et al., 2015). The NRNSS is of particular interest to researchers aiming to measure *supernaturalistic* elements of spirituality, as the instructions to the scale explicitly define spirituality in narrow terms. The NRNSS is arguably like the SBS in that it is a religiosity measure that can be used to assess the extent of respondents’ nonreligion, albeit in two dimensions rather than one.

### 2.3 *Five Recent Measures*

Having surveyed various sociological methods for counting the nonreligious and a psychological method for quantifying the extremity of individual nonreligion, we now turn to recent attempts to characterize the diversity of nonreligion. Here, we review five recent measures of nonreligion. The first two measures focus on overt and covert instances of discrimination against the nonreligious, addressing this important aspect of nonreligious experience. The third scale categorizes and quantifies different reasons for not believing in gods; and the fourth and fifth capture values and attitudes that nonbelievers endorse.

**Measure of Atheist Discrimination Experiences (MADE)** Previous research has shown that people dislike atheists, finding them more likely to commit actions such as bestiality and murder when compared to other stigmatized groups (Gervais, 2014). Although there is no evidence to suggest atheists actually have an affinity for animals or are more likely to commit murder, there is evidence that anti-atheist prejudice can involve verbal and physical threats, property damage, or being forced to conceal or deny their identity (Hammer et al., 2012). The MADE (Brewster, Hammer, Sawyer, Eklund, & Palamar, 2016) is a 24-item measure of self-reported experiences of overt atheist discrimination. Participants are asked to reflect on each item and report how frequently they thought the experience had occurred to them using a 6-point Likert-type scale anchored from *Never* to *Almost all of the time*.

**Microaggressions Against Non-Religious Individuals Scale (MANRIS)** Prejudice against atheists can also manifest in ways that are subtler than described in the MADE. Psychologists call covert instances of discrimination *microaggressions*, referring to statements or acts made to members of marginalized groups, which can be perceived as antagonistic or disparaging because they imply negative evaluations or stereotypes. The MANRIS (Cheng, Pagano, & Shariff, 2018) is a 31-item measure of self-perceived microaggressions against the nonreligious. Participants are asked to report how often they experience the microaggression items by responding on a 5-point Likert-type scale anchored at *Never*, *1-3 times*, *4-6 times*, *7-9 times*, and *10 or more times* in a six-month period.

**Reasons of Atheists and Agnostics for Nonbelief in God's Existence Scale (RANGES)** Previous theoretical and empirical research has attempted to taxonomize nonreligious individuals based on the causes and reasons for their religious disbelief (Norenzayan & Gervais, 2013; Silver et al., 2014). RANGES (Bradley, Exline, Uzdevaines, Stauner, & Grubbs, 2018) speaks to this concern: it is a 38-item multi-dimensional measure of consciously accessible reasons individual nonbelievers may provide for their own nonbelief. Participants respond on a 5-point Likert-type scale anchored at *Not At All Important* and *Extremely Important*.

**Dimensions of Secularity (DoS)** Nonreligion may be defined in terms of the lack of religious beliefs, but social scientists have also recently been investigating the extent to which there are beliefs and values characteristically affirmed by different

kinds of nonreligious individuals. The DoS (Schnell, 2015) is a 23-item multidimensional measure of constructs commonly found within nonreligious worldviews, designed to encompass five dimensions: atheism, agnosticism, scientism, humanism, and personal responsibility. These dimensions are not intended to be comprehensive, and Schnell suggests researchers should add further constructs as necessary. Participants respond on a 6-point Likert-type scale with options anchored at *Do Not Agree At All* and *Agree Completely*. The published version of the DoS is currently only available in German, although the manuscript is in English.

**Humanism Scale (H-Scale)** The H-Scale (Coleman III et al., 2017; Coleman III et al., 2018) is a 9-item measure of humanistic concerns, inspired in part by Law's (2013, p. 263) definition of humanism as a worldview that "gives special importance to human concerns, values, and dignity," albeit without his insistence on a "narrow" humanism that includes atheism. The H-scale is thus not a measure of nonreligion *per se*—humanism can be espoused by religious and nonreligious individuals alike—but it attempts to capture an important aspect of many nonreligious individuals' worldviews. Furthermore, the H-scale's items were designed to at least subtly compete with aspects of religious worldviews, by pitting humanist concerns against others, such as in the item: "I am 'prohuman,' I believe in humans over any other philosophy or belief system." Along the same lines, it also secularizes Tillich's (1957) notion of religion as ultimate concern as in the item "The social and economic conditions in which humanity is living are my ultimate concern"; this item puts the ultimate concern in what Taylor would call the immanent frame. Participants respond to the items on a 5-point Likert-type scale anchored at *Completely Disagree With The Statement*, *Slightly Disagree With The Statement*, *Neutral To The Statement*, *Slightly Agree With The Statement*, and *Completely Agree With The Statement*.

### 3 Methods: Five Recent Measures

These five recent measures of nonbelief—the MADE, the MANRIS, the RANGES, the DoS, and the H-Scale—were developed using various methods. These scale development methods are briefly outlined below.

#### 3.1 *Measure of Atheist Discrimination Experiences (MADE)*

MADE items were created based on a review of existing atheist discrimination literature and were checked for content validity by experts in the field. The MADE was tested for construct validity across two studies ( $N = 1341$  and  $N = 1057$ ) on American samples of self-identified atheists recruited through social media and online atheist communities. MADE was administered alongside a series of validation measures, including adaptations of the Stigma Consciousness Questionnaire

(Pinel, 1999; e.g., “Most people have a problem with viewing atheists as equals”) and the public collective self-esteem sub-scale of the Collective Self-esteem Scale (Luhtanen & Crocker, 1992; e.g., “In general, others think that atheist people are untrustworthy”), Version 3 of the UCLA loneliness scale (UCLA3; Russell, 1996; e.g., “How often do you feel left out?”), and the Hopkins Symptom Checklist-21 (Green, Walkey, McCormick, & Taylor, 1988; e.g., “Feeling blue?”). The MADE was expected to correlate positively with these measures.

### **3.2 *Microaggressions Against Non-Religious Individuals Scale (MANRIS)***

MANRIS items were theoretically derived and drawn from existing microaggression scales, in consultation with experts in the field. They were then adjusted and checked for content validity by several experts in anti-atheist prejudice. Construct validity was tested across two studies ( $N = 765$  and  $N = 720$ ) using American non-religious samples collected from Amazon’s Mechanical Turk consisting of self-identified atheists, agnostics, spiritual but not religious, religious “nones,” and secular humanists. The MANRIS was administered alongside a battery of validation measures, including three subscales from the Perceived Non-Religious Discrimination Scale measuring overt prejudice (PNDS; Hammer et al., 2012; e.g., “being physically threatened because of my non-religious identity”), and a revised version of the Center for Epidemiologic Studies Depression Scale (Radloff, 1977; e.g., “feeling lonely”). The Neuroticism subscale of the Big Five Inventory was also administered as a covariate (John & Srivastava, 1999; e.g., “Worries a lot”).

### **3.3 *Reasons of Atheists and Agnostics for Nonbelief in God’s Existence Scale (RANGES)***

RANGES items were constructed from a review of prior literature, unpublished research, and feedback from field experts and non-academic experts. Reliability and validity were tested across two studies ( $N = 520$  and  $N = 369$ ), using American non-religious samples collected from Amazon’s Mechanical Turk. Test-retest reliability was assessed on 133 participants from the second study one year later. The RANGES was administered with a series of relevant measures, including 7 single items describing broad reasons for nonbelief (e.g., “Intellectual—seeing belief in a god or gods as illogical, not rational; religious teachings or beliefs about gods seem inconsistent or confusing”), Altemeyer and Hunsberger’s (1997) 12-item Sources of Religious Doubt Scale (SRDS; e.g., “Religious tenets don’t make sense”), and measures of religious and spiritual struggles.

### 3.4 *Dimensions of Secularity (DoS)*

DoS items were constructed from a review of philosophical and theological literature and empirical research on secularity and nonbelief, and then further refined by several of Schnell's collaborators. Schnell (2015) reports two studies on DoS. The first study included ( $N = 412$ ; mix of self-identified religious, spiritual, agnostic, atheist, and indifferent participants) German speaking psychology undergraduates and university staff. This study was used for exploratory factor analysis, after which items were improved. It also included a series of religiosity, spirituality, and numinous experience measures; these will not be reviewed here, as the DoS items in the first study were significantly different from those in the second. The second study ( $N = 136$ ; self-identifications same as the first study) drew participants from a sample of Austrian households and was used for confirmatory factor analysis. This study also included Schnell's (2009) Sources of Meaning and Meaning in Life Questionnaire (SoMe), ostensibly for construct validation; its subfactors include Vertical self-transcendence (e.g., "Prayer is important to me"), Horizontal self-transcendence (e.g., "Everyone has a mission to fulfill in life"), Self-actualization (e.g., "I strive to fulfill my goals"), Order (e.g., "Actions speak louder than words"), and Wellbeing and relatedness (e.g., "I strive for inner peace and balance"). Schnell hypothesized that the different sources of meaning would be related to different dimensions of secularity. For example, Vertical transcendence—arguably a kind of religiosity—should be negatively correlated with the Atheistic, Agnostic, and Scientism dimensions. Horizontal transcendence, which emphasizes taking responsibility for the betterment of the world, should be positively correlated with the humanism dimension. Self-actualization, which emphasizes human agency, should be positively correlated with Scientism and Personal responsibility.

### 3.5 *Humanism Scale (H-Scale)*

The H-Scale items, seen in Table 1, were initially constructed based on 59 interviews with nonbelievers (Silver et al., 2014) and from various humanistic treatises and scholarly work (e.g., Cragun, 2016; Kurtz, 2007; Law, 2013). Construct validity was then initially tested across two studies. In the first study, self-identified American nonbelievers in God were recruited from social media and online atheist communities ( $N = 1164$ ), whereas the second study ( $N = 227$ ) included a mixed religious/nonreligious sample of undergraduate students recruited from a medium sized university in the Southern United States. For construct validation, the second study included the attitudes subscale of the Social Justice Attitudes Scale (SJS; Torres-Harding, Siers, & Olson, 2011; e.g., "I believe that it is important to make sure that all individuals and groups have a chance to speak and be heard, especially those from traditionally ignored or marginalized groups"), the intrinsic religiosity subscale of the Duke University Religiosity Index (DUREL; Koenig & Büssing, 2010;

**Table 1** Humanism scale items

Subscale	Variable
<i>Social value</i>	
Q1	I believe strongly in humanity and the power of people
Q2	There is no greater resource in this world than humanity
Q3	The greatest moral decision is doing the most good for human beings
Q4	The social and economic conditions in which humanity is living are my ultimate concern
Q5	If someone is seeking inspiration, it can be found in humanity
Q6	I am “prohuman,” I believe in humans over any other philosophy or belief system
<i>Social justice</i>	
Q7	Every person has the right to find happiness and achieve their full potential regardless of belief, ethnicity, or cultural identity
Q8	Human value and respect should be the greatest social value
Q9	Human suffering should be eradicated in all its forms from the world

e.g., “In my life, I experience the presence of the Divine.”), and the universalism (e.g., “broad-mindedness, beauty of nature and arts, social justice...”) and benevolence (e.g., “helpfulness, honesty, forgiveness...”) subscales of the Short Schwartz Value Survey (SSVS; Lindeman & Verkasalo, 2005).

## 4 Findings: Five Recent Measures

Findings from research on the MADE, the MANRIS, the RANGES, the DoS, and the H-Scale support their psychometric properties. The reliability, validity, factor structure, and utility of these five nonreligious scales are promising.

### 4.1 *Measure of Atheist Discrimination Experiences (MADE)*

**Scale Structure** The sample from the first study on the MADE was divided into two samples to conduct exploratory ( $N = 665$ ) and confirmatory factor analysis ( $N = 676$ ), respectively. Parallel analysis on the first half of the sample indicated that four factors should be extracted, but for theoretical reasons Brewster et al. (2016) decided to extract five factors, which they then attempted to confirm using the other half of the sample. The five factors were Immoral (e.g., “People have told me that I am not a ‘good person’ because of my atheism”), Bringing Shame (e.g., “I have been told that I am selfish because I am an atheist”), Asked to Pass (e.g., “I have asked to pretend that I am not an atheist”), Overt Maltreatment (e.g., “My property has been vandalized because I am an atheist”), and Social Ostracism (e.g., “Because of my atheism, others have avoided me”). Confirmatory factor analysis showed that

a bi-factor model enjoyed adequate fit, comprising a general factor (Cronbach's  $\alpha = .95$ ) separate from the five theoretical sub-factors. This measurement model was superior to either a unidimensional or simple five-factor model. Coefficient omega was computed to quantify the unique variance attributable to the sub-factors on top of the general factor; the very low omega scores indicated that the sub-factors only accounted for 8% of variance. Brewster and colleagues therefore advise the sub-factors not be treated separately in future research.

**Reliability** The MADE has very good internal consistency of its single general factor. Its Cronbach's  $\alpha$  was 0.95.

**Validity** As evidence of convergent validity, the MADE general factor was positively correlated with the awareness of the stigma associated with atheism ( $r = 0.56$ ,  $p < 0.001$ ) as well as of the public devaluation of atheists ( $r = 0.37$ ,  $p < 0.001$ ). Moreover, as evidence of predictive validity, MADE scores predict self-reported feelings of loneliness ( $r = 0.18$ ,  $p < 0.001$ ) and psychological distress ( $r = 0.27$ ,  $p < 0.001$ ).

**Utility** The MADE scale advances research by offering a way to measure overt instances of prejudice from those on the receiving end (i.e., atheists). This is particularly useful from the perspective of minority stress theory (Meyer, 2003) in which documenting the effects of atheist stigma are important for developing policy interventions and counseling strategies for clinicians.

## 4.2 *Microaggressions Against Non-Religious Individuals Scale (MANRIS)*

**Scale Structure** Initial exploratory factor analysis and item analysis suggested five factors that explained two thirds of the variance on the MANRIS. A second study confirmed a bi-factor model comprising a single general factor alongside five factors corresponding to the five subscales: Assumption of Inferiority (e.g., "Others have assumed I have no morals because of my lack of religion"), Denial of Non-religious Prejudice (e.g., "Others have told me to not complain about my experiences as a non-religious individual"), Assumption of Religiosity (e.g., "Others have acted surprised that I do not believe in God or Gods"), Endorsing Non-religious Stereotypes (e.g., "Others have acted as if all non-religious people are alike"), and Pathology of a Non-religious Identity (e.g., "Others have made fun of my non-religious identity").

**Reliability** The five subscales on the MANRIS have excellent reliability. Subscale Cronbach's  $\alpha$ 's ranging from 0.89 to 0.96 for Assumption of Inferiority (Cronbach's  $\alpha = 0.96$ ), Denial of Non-religious Prejudice (Cronbach's  $\alpha = 0.94$ ); Assumption of Religiosity (Cronbach's  $\alpha = 0.89$ ), Endorsing Non-religious Stereotypes (Cronbach's  $\alpha = 0.92$ ), and Pathology of a Non-religious Identity (Cronbach's  $\alpha = 0.92$ ).

**Validity** The composite scale demonstrated convergent validity with self-reported overt experiences of discrimination (PNDS sub-scales;  $r = 0.58$  to  $0.67$ ,  $p < 0.001$ ) as well as depressive symptoms ( $r = 0.25$ ,  $p < 0.001$ ), even when controlling for gender, ethnicity, and neuroticism ( $r = 0.18$ ,  $p < 0.001$ ). Moreover, the MANRIS composite score works as least as well ( $r = 0.12$ ,  $p < 0.001$ ) in predicting depressive symptoms than the PNDS ( $r = 0.10$ ,  $p < 0.01$ ), though this correlation may be driven by shared variance between the MANRIS and PNDS. The MANRIS also showed self-identified atheists reported more experiences of microaggressions than the other nonreligious identities (e.g., agnostics, religious “nones”, and spiritual but not religious;  $p \leq 0.02$ ) and the spiritual but not religious ( $p < 0.01$ ).

**Utility** The MANRIS will be useful for parsing out different components of anti-atheist prejudice and their various causes and effects. The scale may be beneficial for clinicians interested in developing coping strategies for nonreligious individuals as well as researchers who focus on the antecedents and consequences of atheist prejudice.

### 4.3 *Reasons of Atheists and Agnostics for Nonbelief in God’s Existence Scale (RANGES)*

**Scale Structure** A Very Simple Structure (VSS; Revelle & Rocklin, 1979) analysis was conducted for the RANGES alongside the exploratory factor analysis, which led the researchers to pare down the original 64 items to 35, and to add 3 items to improve factor structure. Results of a second VSS suggested an 8- or 9-factor solution would suffice; the authors judged that a 9-factor structure would lead to better factor loadings and more interpretable factors. The authors originally expected 8 factors. The distinction between *early* and *current socialization* was unanticipated, as was the distinction between *bad experiences* and *societal concern*; they also hypothesized an *existentialism* component, which did not emerge. In the second study, a confirmatory factor analysis indicated that a 9-factor solution enjoyed adequate fit covering the domains of Current socialization (e.g., “Belief in God is not accepted in my social group”), Intellectual (e.g., “The existence of God doesn’t make logical sense”), Bad experiences with religion (e.g., “I have been hurt by religious people in the past”), Agnostic (e.g., “No one really knows for sure whether or not god exists”), Relational (e.g., “Earlier in my life, I felt as though I was mistreated by God”), Early socialization (e.g., “Growing up, my parents or caretakers did not believe that God exists”) (e.g., “I find it uplifting to believe that God does not exist”), Societal concerns (e.g., “Religious institutions are too powerful in society”), and Intuitive (e.g., “The concept of God just doesn’t make sense on a gut level”).

**Reliability** All nine factors were internally consistent: Current socialization (Cronbach’s  $\alpha = 0.82$ ), Intellectual (Cronbach’s  $\alpha = 0.85$ ), Bad experiences with religion (Cronbach’s  $\alpha = 0.90$ ), Agnostic (Cronbach’s  $\alpha = 0.83$ ), Relational

(Cronbach’s  $\alpha = 0.90$ ), Early socialization (Cronbach’s  $\alpha = 0.90$ ), Emotional (Cronbach’s  $\alpha = 0.85$ ), Societal concerns (Cronbach’s  $\alpha = 0.88$ ), and Intuitive (Cronbach’s  $\alpha = 0.87$ ). The results from the follow-up study showed modest to moderate temporal stability one year later (ICCs = 0.52 to 0.72), and replicated the earlier finding that, all factors demonstrated good internal consistency (Cronbach’s  $\alpha > 0.79$ ).

**Validity** To provide evidence of construct validity, the RANGES subscales were used to predict a diverse set of relevant measures; however, the lack of explicit hypotheses about these makes evaluation difficult. The most interpretable results are about the seven single-item broad reasons for nonbelief, which roughly corresponded to the RANGES subscales, with the exception of the Agnostic and Societal concerns subscales, which were not represented. Overall, the RANGES subscales were positively correlated with the relevant single-item measures: Early socialization but not Current socialization was correlated with the socialization item. As seen in Table 2, Bradley et al. (2018) report a battery of correlations with other measures, but these are not easily interpreted as evidence for construct validity.

**Utility** The RANGES instrument is a potentially important contribution to the psychology of (non)religion, because it takes into consideration the multidimensionality of nonreligious experience. The scale is limited to only measuring consciously accessible reasons for nonbelief; however, it captures some of the sub-conscious paths outlined by Norenzayan and Gervais (2013). Moreover, various dimensions map onto deconversion trajectories (Streib, Hood, Keller, Csöff, & Silver, 2009), and relate to the different types of nonbelief outlined by Silver et al. (2014).

**Table 2** Convergent and discriminant validity of ranges subscales

Study 2									
	1	2	3	4	5	6	7	8	9
<i>Single item reasons for nonbelief</i>									
Socialization	(-0.07)	-0.09	0.02	0.12	0.02	[0.49*]	-0.01	-0.15	0.07
Intellectual	0.07	[0.51*]	0.04	-0.07	0.07	-0.02	-0.25	0.05	0.06
Bad experiences with religion	-0.10	0.04	[0.71*]	.01	.02	0.00	-0.13	0.13	-0.03
Relational	-0.04	-0.08	0.06	0.02	[.54*]	0.02	-0.03	0.00	-0.02
Emotional (positive)	0.06	-0.16	-0.05	-0.03	-0.02	0.01	[0.50*]	0.06	0.03
Emotional (negative)	-0.18	-0.12	0.04	0.07	0.21	0.10	[0.40*]	0.07	-0.14
Intuitive	0.01	-0.11	0.03	0.11	-0.01	0.01	0.01	-0.11	[0.62*]

\* $p < 0.05$ ; Holm-corrected for all multiple regression coefficients used in validity testing, separately for Study 1 and Study 2. Highest VIF = 2.44. Factor 1 = Current Socialization, Factor 2 = Intellectual, Factor 3 = Bad Experiences with Religion, Factor 4 = Agnostic, Factor 5 = Relational, Factor 6 = Early Socialization, Factor 7 = Emotional, Factor 8 = Societal Concerns, Factor 9 = Intuitive. [ ] hypothesis supported; ( ) hypothesis not supported

#### 4.4 Dimensions of Secularity (DoS)

**Scale Structure** In the first study, exploratory factor analysis suggested a five-factor solution, but internal consistency of three of the factors was deemed inadequate: items from the Scientism, Humanism, and Personal responsibility subscales were modified prior to the second study. The confirmatory factor analysis on the revised scale found that a five-factor solution enjoyed good fit.

**Reliability** Internal consistency reliability for the individual factors on the DoS was improved from the previous version. All five subscales showed good internal consistency: Atheism (e.g., “God created by mankind”;  $\alpha = 0.90$ ), Agnosticism (e.g., “God/higher power might exist, but will never know”; Cronbach’s  $\alpha = 0.87$ ), Scientism (e.g., “Trust in science and technology to solve problems of mankind”; Cronbach’s  $\alpha = 0.83$ ), Humanism (e.g., “I approach others with benevolence and kindness”; Cronbach’s  $\alpha = 0.75$ ) and Personal responsibility (e.g., “Everybody responsible for their own life”; Cronbach’s  $\alpha = 0.88$ ).

**Validity** The correlations between revised DoS and sources of meaning showed mixed support for the validity of the DoS. Schnell’s (2009) hypotheses were only partially supported by the data on DoS and SoMe, as seen in Table 3, and there were also unpredicted significant correlations.

**Utility** Most research has operationalized nonreligion as a unified, unidimensional construct without regard for the diversity of nonreligious worldviews. In contrast to this approach, the DoS presents one promising avenue for the measurement of affirmative aspects of nonreligious worldviews. More specifically, the Scientism, Personal responsibility, and Humanism subscales align with key aspects identified in previous research focused on the nonreligious (Coleman III & Arrowood, 2015; Farias et al., 2013; Schnell & Keenan, 2011).

**Table 3** Correlations between revised DoS and sources of meaning

	Vertical self-transcendence	Horizontal self-transcendence	Self-actualization	Order	Well-being and relatedness
Atheism <sup>a</sup>	[-0.66***]	-0.17*	0.06	-0.02	-0.14
Agnosticism <sup>a</sup>	[-0.25***]	0.09	0.01	0.11	0.04
Scientism	(-0.11)	-0.03	[0.20*]	0.34***	0.07
Personal responsibility <sup>a</sup>	-0.14	-0.04	(0.05)	0.19*	0.13
Humanism <sup>a</sup>	-0.09	[0.36***]	0.11	0.08	0.17*

\* $p \leq 0.05$ ; \*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$

<sup>a</sup>Transformed; [ ] hypothesis supported; ( ) hypothesis not supported

**Table 4** Correlations with humanism subscales and validation measures

Validation measures	Humanism subscale	
	Social value	Social justice
SJS: Attitudes	0.35***	0.37***
DUREL: Intrinsic religiosity	-0.26***	-0.25***
SSVS: Universalism	0.23***	0.33***
SSVS: Benevolence	0.26***	0.27***

\*\*\* $p < 0.001$

### 4.5 Humanism Scale (H-Scale)

**Scale Structure** The exploratory factor analysis in the first study suggested a 2-factor solution for the H-Scale, accounting for 57% of the variance. In the second study, confirmatory factor analysis confirmed a two-factor solution with satisfactory fit, measuring Social Value (e.g., “I believe strongly in humanity and the power of the people”) and Social Justice (e.g., “Human value and respect should be the greatest social value”).

**Reliability** Both subscales of the H-Scale have adequate internal consistency: Social Value (Cronbach’s  $\alpha = 0.81$ ) and Social Justice (Cronbach’s  $\alpha = 0.72$ ). This provides some support for the reliability of the H-Scale.

**Validity** The two subscales were significantly positively correlated,  $r = 0.53$ ,  $p < 0.001$ , supporting the construct validity of the H-Scale. As seen in Table 4, as expected, H-Scale scores were negatively correlated with intrinsic religiosity, even though none of the items were explicitly nonreligious. Furthermore, H-Scale scores were positively correlated with conceptually similar measures of social justice attitudes, universalism, and benevolence values, supporting the convergent validity of the H-Scale. The distinction between the Social Value and the Social Justice subscales does not seem to add to the discriminant validity of the H-Scale.

**Utility** The H-scale is not strictly speaking a measure of nonreligion, as it does not directly refer to the rejection of religious beliefs. Research suggests, however, that humanism is a widespread aspect of nonreligious worldviews (Langston, Hammer, & Cragun, 2015; Sevinç, Metinyurt, & Coleman III, 2017; Silver et al., 2014) at least in the United States and perhaps the West more broadly (Brown, 2017).

## 5 Critique

All five measures of nonreligion—the Measure of Atheist Discrimination Experiences (MADE), the Microaggressions Against Non-Religious Individuals Scale (MANRIS), the Reasons of Atheists and Agnostics for Nonbelief in God’s Existence Scale (RANGES), the Dimensions of Secularity (DoS) scale, and the Humanism

Scale (H-Scale)—show promise. All have clear utility and good internal consistency, and their factor structures provide some empirical support for the construct validity of the underlying constructs they are endeavoring to measure, but further research is needed to provide additional evidence on the validity of these measures. Further research on the MADE should explore the effects of discrimination on additional mental health and wellbeing variables. Because the MADE sub-factors are not suitable for research purposes, future work should seek to identify reliable and valid subcomponents of overt discrimination. Moreover, since prejudice against atheists is near universal phenomenon (cf. Gervais et al., 2017), it is imperative to explore the possible cross-cultural applications of the MADE. Future research on the MANRIS should develop and test versions for cross-cultural application. Further research should test the validity of RANGES in cross-cultural settings, specifically in polytheistic contexts. The scale will be useful in further disambiguating the varieties of nonreligion, in longitudinal studies examining the temporal stability of reasons for nonbelief, for cognitive researchers comparing and contrasting explicit reasons with implicit mental processes, and in clinical settings where different reasons may be associated with different health outcomes and stigmatization. Currently, an English translation and validation of the DoS is underway (T. Schnell, personal communication, November 14th, 2017), but future research should test the ability of the DoS to uniquely predict nonreligious identities and seek to establish the validity of the DoS dimensions in across different cultures and other languages. Also, future research will need to investigate the validity of the H-Scale in cross-cultural settings.

## 6 Multicultural Applications

To date, the scales featured in this chapter have remained untranslated from their original languages. As we have noted above, however, the religiously unaffiliated represent a significant and growing minority in many countries around the world. Furthermore, nonreligion is not merely a Western European phenomenon: based on World Values Survey data, Keysar and Navarro-Rivera (2013) estimate that in China, India, Indonesia, and Brazil, there are a total of 265 million atheists. This number is likely to grow as education levels increase, given trends within these countries suggesting that more educated people are also more likely to be atheists. It is not yet clear how nonreligion in non-Western contexts compares with nonreligion in Western Europe and the United States. To investigate this question, the tools described here will require validation—and, in all likelihood, adaptation—for diverse contexts around the world.

## 7 Conclusion: Designing New Measures of Nonreligion?

Only a handful of psychometrically validated measures designed specifically for the nonreligious exist. Of the five we found, two are measures of experienced discrimination (i.e., MANRIS, MADE). RANGES resembles Norenzayan and Gervais

(2013) interests in the routes of atheism and the typologies developed by Silver et al. (2014); however, articulated reasons should not be confused for actual causes, which may be inaccessible to introspection. The remaining two measures—DoS and the H-Scale—attempt to capture more positive aspects of nonreligion, as opposed to the mere absence of supernatural belief or spiritual practice. Some aspects covered by these scales, however—humanistic ideals in particular—may only be associated with nonreligion in specific cultural and historical contexts, and more research is needed to test these assumptions. After all, philosophical humanism has its anti-religious critics—Nietzsche, Freud, Foucault, and Lyotard among them—as well as fervent disciples.

In his now classic paper, Gorsuch (1984) called measurement the “boon and bane” (p. 442) of the psychology of religion, both enabling substantive research to flourish while also distracting from such research with preoccupations with constructing and validating scales. In resolution to this dilemma, Gorsuch (1990) later outlined a set of four criteria to consider before charging ahead with the construction of new measures. As summarized by Hill and Edwards (2013), before developing a new measure one should be sure:

- (a) Existing measures are not psychometrically adequate to the task, (b) there are no measures available for particular constructs, (c) conceptual or theoretical issues demand modification of existing measures, or (d) no existing measures appear useable with a specific clinical population. (p. 51)

By these criteria, the state of measurement in our corner of the psychology of religion is unclear. First, more psychometric evaluation is required for all the measures mentioned here, particularly for cross-cultural application: it is not yet clear if they stand up to the task of measuring global nonreligion. Second, the options for measuring nonreligion, especially in its multidimensionality, are very limited. Third, the field is still in its conceptual and theoretical infancy, and it is not yet clear that psychological constructs are worth measuring and are practically measurable. The fourth criterion is less relevant for our current purposes.

Cautiously, then, we do encourage the theoretically-driven construction of new measures of dimensions of nonreligion. We urge, though, that researchers conduct cross-cultural psychometric validation, rather than only on American samples: for decades, sociologists have observed that the United States has an unusual relationship with secularization. It would not surprise us to discover that measures designed for an American population would fail to apply more broadly elsewhere. As the psychology of religion is slowly but surely shedding its American Protestant parochialism, it would be a shame if the psychology of nonbelief and other varieties of nonreligion committed the same original sin as its forebear.

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