

EXCEPTIONAL BEHAVIOR OR EXCEPTIONAL IDENTITY? OVERREPORTING OF CHURCH ATTENDANCE IN THE U.S.

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Abstract It is well established that religious service attendance is overreported on conventional surveys. However, research has focused almost exclusively on overreporting in American survey data. This study extends the current body of research by pursuing the following question: Are Americans the only overreporters, or is this a ubiquitous survey artifact inherent to conventional survey measures of religious service attendance? Overreporting is estimated as the difference between directive measures from conventional surveys and those from time diaries. The survey artifact is examined across 14 countries and over four decades, highlighting the consistency and extremeness of (over)reported American religious participation, in light of concordance between modes in other countries. Findings suggest that American religiosity may be exceptional not in terms of actual behavior, but rather in terms of identity. As a result, this study adds to our understanding of American exceptionalism by drawing a distinction between religious identities and religious behavior.

Introduction

The problem of overreported religious service attendance on American surveys is well known. While about 40 percent of Americans report having attended religious services in the previous week, many overreport their attendance—that is, they exaggerate their frequency of attendance at services in response to

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survey questions—leaving the actual rate reduced by between a quarter and half (Chaves and Cavendish 1994; Hadaway, Marler, and Chaves 1993; Hadaway, Marler, and Chaves 1998; Hadaway and Marler 2005; Marcum 1999; Marler and Hadaway 1999). Yet, more than an error to be corrected or avoided, overreporting is a survey artifact that provides social scientists an opportunity to better understand human behavior (Schuman 1982). This article takes advantage of this opportunity to investigate whether the tendency to overreport is a universal or a uniquely American phenomenon, yielding findings that call into question the exceptionalism of American religious behavior.

American exceptionalism, the view of the United States as a unique entity in the world, has long roots extending back to Tocqueville and Weber—European visitors who viewed American religiosity with an outsider's eye (Tiryakian 1993). The uniqueness of the American experience, including the role of religion in its foundation and development, and its continuing high levels of religiosity, plays a central role in the American identity (Kammen 1993). The widely understood place of the United States as an outlier of religiosity in a secularized developed world is an important part of this story (Lipset 1991, 1996).

Two main arguments against this exceptional view of American religious behavior have been made, although each to a different end. Some criticize American exceptionalism, arguing that it is Europe that is exceptionally irreligious in comparison to the United States and the rest of the world (Berger, Davie, and Fokas 2008; Casanova 2003; Greeley 1991, 2004). Others argue that American religious exceptionalism has been overstated and that American religiosity is more complex than the outlier label suggests. Rather than asserting its exceptional nature and focusing on the magnitude of difference, research should simply investigate how American religiosity differs (Demerath 1998). The current study takes this approach, but also examines how American religiosity is similar to that in other countries.

MEASUREMENT AND BIAS

Following Hadaway, Marler, and Chaves (1993), Presser and Stinson (1998) reaffirmed that stylized survey questions do upwardly bias estimates of weekly church attendance in the United States. Comparing three different measures of service attendance—(i) a conventional stylized question; (ii) a conventional stylized question edited to alleviate social-desirability bias; and (iii) a variable coded from time diaries—they found a gap between estimated rates of attendance from the two different types of stylized questions, and a larger gap between the stylized questions and the estimate from the time diary study. The difference between the estimates from the stylized measures and the time-use measure suggests that differential levels of directiveness of the measures is at least partially causative, with the more directive measures priming the respondent for a more socially desirable response.

Directive items (i.e., stylized questions from conventional surveys) promote a high level of self-reflection on the part of the respondent, prompting the cognitive processes (i.e., estimation and answer editing) that encourage biased reporting (see Smith 1998). This understanding is well founded in an identity theoretical framework. According to Burke, “the problem with most measurement situations is that without the normal situational constraints it becomes very easy for a respondent to give us that idealized identity picture which may only seldom be realized in normal interactional situations” (1980, 28). This is exactly the situation that may be driving overreported church attendance in survey estimates using conventional stylized questions. As explained by Hadaway, Marler, and Chaves, “overreporting is generated by the combination of a respondent’s desire to report *truthfully* his or her identity as a religious, church-going person and the perception that the attendance question is really about this identity rather than about *actual attendance*” (1998, 127; emphasis in original). Rather than simply reporting factual attendance, the respondent applies a pragmatic interpretation (Clark and Schober 1992; Schwarz 1996; Sudman, Bradburn, and Schwarz 1996), influenced by a desire to self-present in an identity-consistent light.

In comparison, time diary studies allow improved estimation through the use of a chronological reporting procedure that avoids the directiveness of the conventional survey question (Stinson 1999). By measuring without explicit mention of the behavior of interest (Robinson 1985, 1999), time diaries avoid prompting comparable levels of self-reflection, yielding better quality, less biased measures of socially desirable behaviors (Bolger, Davis, and Rafaeli 2003; Niemi 1993; Zuzanek and Smale 1999). In short, because church attendance is reported without prompting in time diaries, the respondent’s spontaneous volunteering of this activity is less susceptible to overreporting based on social desirability.¹

Extending the analysis of Presser and Stinson (1998), this study investigates these cross-national differences using data from a number of developed nations, the selection of which is highly dependent on data availability. The population rate of overreporting will be estimated as the difference between the stylized and time diary measures (hereafter, the “intermodal gap” or, more simply, the “gap”). If the intermodal gap is of a similar magnitude and direction in all countries, overestimation would be best attributable to a more consistent form of measurement error, indicating something about the manner in which the mind (at least those in the countries examined here) estimates or recalls pertinent information differently in these modes. However, if the United States emerges

1. This isn’t to say that time-use measures of attendance are completely unbiased. It is possible that the mere mention of a Sunday may prime some American respondents, making salient their religious identity, and prompting an identity-confirming response. However, these are likely to be the respondents who regularly and frequently attend. Moreover, respondents may also omit or report fewer non-normative (negative) behaviors, but that has no bearing on the current project.

as the only country with a substantial gap, it would suggest the presence of a uniquely American religious identity that results in overreporting in line with Hadaway et al (1998). Such a finding would call for a reassessment of American exceptionalism. Exclusively American overreporting would result in an actual rate of attendance that is more similar to European rates than conventional survey estimates suggest. This reduction in the behavioral aspect of American exceptionalism, in light of a uniquely American overreport, would put a new twist on exceptionalism. If only Americans overreport, they may continue to appear exceptional identity-wise even if they do not behave in an exceptional manner.

To rigorously test this hypothesis, Canada, the Republic of Ireland, and Great Britain will be included in the analyses to maximize similarities with the United States. As these nations have a long shared history and a common language, as well as other cultural commonalities relevant for survey research (Johnson et al. 2002), they are the most likely to show levels of overreporting on par with the U.S. Previous unpublished research suggests that both Britons (Hadaway and Marler 1997a) and Canadians (Hadaway and Marler 1997b) may overreport their frequency of church attendance.

If religion is vibrant anywhere in Europe, it is not in Protestant but rather in Catholic Europe (Greeley 2004). As overreporting may simply be a function of high levels of self-reported attendance, Italy, Ireland, and other Catholic nations provide another interesting comparison. Obversely, to maximize possible differences, the relatively irreligious nations of Northern Europe (the Netherlands, Norway, Finland, and Germany) are included as a distinct counterpoint to the United States in terms of self-reported level of religious practice.²

Data

Stylized estimates of church attendance: The stylized questions vary by survey, but all follow a typical format. These questions directly ask respondents' frequency of attendance over the past year, coding between four and seven response categories that range from "more than once a week" to "never." In the extreme, the number of response categories has been extended to 11, with more of the additional response options distinguishing levels of higher frequency. (Full information on each dataset [i.e., question wording, response rates, and information on samples] is available in appendices A, B, and C, available online.)

Even if measurement were a simple function of the respondent mapping his or her "true" value onto the corresponding response option, these categories would not necessarily map onto each other between surveys² perfectly.

2. Notably, finding some amount of underreporting is possible in some of these more irreligious countries.

Misalignment between categories of behavioral frequency is common. Moreover, survey response is not a simple function of the respondent mapping his or her true value onto the corresponding response option (Cannell, Miller, and Oksenberg 1981; Tourangeau 1984, 1987; Tourangeau and Rasinski 1988; Tourangeau, Rips, and Rasinski 2000). Respondents use more than just the explicit wording of a question to enumerate, compute, or estimate a response. For example, they may use the range and number of response options in their mental calculus (Schwarz et al. 1985; Schwarz 1990). Even if offered the identical question stem, the same respondent may opt for two different response categories given a different set of options due to the different implications of these codes considering their contextual meaning in the list. In sum, both the misalignment of the categories between surveys and respondents' imperfect use of these different response categories complicate the measurement situation.

"Regular and frequent" attendance will be operationalized as attending nearly every week (about 2–3 times a month) or more frequently. Multiple studies from each country will be included to minimize idiosyncratic measurement error from any single study. The stylized estimates used here come from four series of cross-cultural surveys, including the World Values Surveys [WVS] 1981–2008 (World Values Survey Association 2006, 2008, 2009), the Eurobarometer [EB] from 1970 through 2005 (Schmitt and Scholz 2005; Papacostas 2005–2006, 2006), the International Social Survey Program [ISSP] (International Social Survey Program 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1996a, 1996b, 1997, 1998, 1999, 2000, 2001, 2002, 2004), including the American General Social Survey³ [GSS] (Davis, Smith, and Marsden 2009), and the European Social Survey [ESS] (Jowell and the Central Coordinating Team 2003, 2005, 2007, 2008). The relative lack of Finnish data in comparison to that of the other European countries included here necessitates an additional source of data. The Gallup Ecclesiastica Studies 1999 and 2003 (Gallup Ecclesiastica 2002, 2007) provide a fitting, although temporally limited, source for additional stylized measures of religious service attendance. Other comparable data are used for non-European countries to fill in temporal gaps, including the American National Election Study [ANES] (Sapiro, Rosenstone, and the National Election Studies 2004), the Canadian National Election Study [CNES] (Clarke et al. 1977, 1982; Lambert et al. 1984; Johnston et al. 1991–1992), and the Canadian General Social Survey Cycle [CGSS] 15 (Statistics Canada 2003), Cycle 17 (Statistics Canada 2004), and Cycle 18 (Statistics Canada 2005). Most of these surveys are administered face-to-face.

Time-use measures: The majority of time-use studies used in the following analyses are component surveys of the Multinational Time Use Study [MTUS]

3. ISSP participants also include the ALLBUS (Germany) and the British Social Attitudes Survey, among many others.

(Multinational Time Use Study 2007, 2010). The MTUS is a collaboration between numerous national statistical agencies and university-based scholars that emphasizes the harmonization of coding categories (Gershuny et al. 2000). In addition, these analyses will include a number of national time-use studies to fill in missing time periods and extend coverage. These studies include the German Time Use Study 2001–2002 (Statistisches Bundesamt 2005), the Irish National Time Use Survey 2005 (Department of Justice, Equality, and Law Reform 2008), the Italian Time Use Study 2002–2003 (Istituto Nazionale di Statistica 2005), the Spanish Time Use Survey 2002–2003 (Instituto Nacional de Estadística 2005), the United Kingdom Time Use Study 2005 (Office for National Statistics 2007), the Canadian General Social Survey Cycle 19—Time Use 2005 (Statistics Canada 2008), and the American Time Use Study 2003–2008 (Abraham et al. 2008). For the current purposes, these studies can be straightforwardly harmonized with the MTUS. Attendance is estimated as that reported for those respondents randomly assigned to report on a Sunday. More information on each of these studies, including sample sizes, response rates, and a brief summary of sample characteristics, is available in the appendices, which can be found in an online supplement.

Methods

First, trends in the stylized estimates for each country will be briefly described. Diary estimates will then be compared to conventional survey estimates from the same year. If no conventional studies are available in the year(s) of a diary study, the diary estimate will be compared to estimates from adjacent years.⁴ Mean rates of attendance between modes will be compared using a two-sample Z-test for proportions. The test statistic is computed as

$$z = \frac{(\hat{p}_{tij} - \hat{p}_{sij})}{\sqrt{\hat{p}(1-\hat{p})\left(\frac{1}{n_{tij}} + \frac{1}{n_{sij}}\right)}}$$

where s refers to the stylized estimate, t to the time diary estimate, i to country, and j to year, and

$$\hat{p} = \frac{p_{tij}n_{tij} + p_{sij}n_{sij}}{n_{tij} + n_{sij}}$$

4. This is essentially the nearest neighbor imputation using the closest years of available data points to substitute for the missing year. However, instead of randomly selecting a single donor within the window, gaps are computed for all nearest neighbors. Linear and nonlinear models were estimated to investigate the appropriateness of using adjunct years. Comparison of residuals for missing and non-missing years suggests that using adjunct years is a reasonable procedure.

Some of the sample sizes of the studies used here are quite large, yielding statistical tests with a great deal of power. As a result, even very small differences will be statistically significant (Cohen 1988). In light of this, effect sizes are used to allow some sense of the practical significance or magnitude of these differences. The first effect size is the raw mean difference (gap). However, because the variance of the proportion, $[p(1-p)]$, is dependent on the value of the proportion, p , a second effect size, a variant of Cohen's d for proportions, is used here, utilizing an arc sine transformation of p . Without this transformation, the statistical power to detect even equivalent differences could vary with the value of the proportion (Cohen 1988; Hojat and Xu 2004). It is calculated as

$$d'_{ij} = \left| [2(\arcsin\sqrt{p_{ij}})] - [2(\arcsin\sqrt{p_{sij}})] \right|$$

Cohen's d is often compared to the following guidelines: Under 0.20 is not considered to be a substantive effect, 0.20 is considered a small effect, 0.50 a medium effect, and 0.80 a large effect. These guidelines, along with the results of the significance tests and the size of the raw gaps, will all be considered.

Results

Netherlands: The conventional survey estimates of attendance (see figure 1) from the Netherlands start at an attendance rate around one-third in 1970 and are reduced over the following four decades to about 12 percent in 2006. (Figures 1–14 are available in online supplementary material.) Estimates from time diaries do not fall far from the conventional survey estimates, yielding a gap between diary and conventional survey data that fails to consistently reach statistical or substantive significance (see table 1). In the first three years, comparisons to estimates from the Eurobarometer (1975, 1980, and 1985) yield small gaps (–2.3, –0.2, and –0.7 points) that fail to reach conventional levels of statistical significance ($p \leq 0.05$). Two comparisons are made in each of the latter three years (1990, 1995, and 2000), and in each year, one comparison reaches statistical significance and one does not. In 1990 and 1995, comparison to the Eurobarometer yields a significant gap (4.5 and 5.6), although comparisons to the 1990 WVS and 1995 ISSP (2.1 and 0.4) do not. In 2000, comparison to the 2000 ISSP yields a significant gap (3.6), although the gap from the 1998 ISSP (–0.4 points) is not significant. In the last year of diary data, 2005, comparisons to the Eurobarometer yield small, nonsignificant gaps (–1.9, –0.9). In none of these comparisons does a substantive gap emerge (all $d < 0.200$; most < 0.100).

Germany: Considering the recent history of Germany, the West and East are treated separately. The trend for the West (see figure 2) resembles that from the Netherlands, with stylized measures beginning in 1970 at about 29 percent and

Table 1. Comparison of Diary and Stylized Estimates by Country and Year: Raw Gaps, Z-tests, and Effect Sizes

Country	Diary estimates						Stylized estimates						Raw gap	Z-test	p	p'	Effect size	
	Year	Mode	Rate (%)	SD	CI	N	Study	Year	Mode	Rate (%)	SD	CI						N
Netherlands	1975	SAQ	24.6	43.1	±3.3	1129	EB	1975	FTF	26.8	44.3	±2.7	1006	-2.3	1.199			0.05
Netherlands	1980	SAQ	25.6	43.6	±2.3	2378	EB	1980	FTF	25.7	43.7	±2.7	976	-0.2	0.094			0.00
Netherlands	1985	SAQ	23.2	42.2	±1.9	2968	EB	1985	FTF	23.8	42.6	±2.7	952	-0.7	0.425			0.02
Netherlands	1990	SAQ	22.8	41.9	±2.0	2919	EB	1990	FTF	18.2	38.6	±1.4	3143	4.5	4.389	***	***	0.11
Netherlands	1990	SAQ	22.8	41.9	±2.0	2919	WVS	1990	FTF	20.7	40.5	±2.6	1012	2.1	1.362			0.05
Netherlands	1995	SAQ	18.2	38.6	±1.8	2956	EB	1995	FTF	12.5	33.1	±2.1	1004	5.6	4.110	***	**	0.16
Netherlands	1995	SAQ	18.2	38.6	±1.8	2956	ISSP	1995	FTF	17.8	38.2	±1.7	2055	0.4	0.355			0.01
Netherlands	2000	SAQ	17.7	38.2	±2.2	1546	ISSP	1998	FTF	18.1	38.5	±1.7	2015	-0.4	0.298			0.01
Netherlands	2000	SAQ	17.7	38.2	±2.2	1546	ISSP	2000	SAQ	14.1	34.8	±1.7	1604	3.6	2.793	**		0.10
Netherlands	2005	SAQ	12.1	32.6	±1.5	2001	EB	2005	FTF	13.9	34.7	±2.1	1004	-1.9	1.453			0.06
Netherlands	2005	SAQ	12.1	32.6	±1.5	2001	EB	2005	FTF	13.0	33.6	±2.1	1002	-0.9	0.707			0.03
Germany, West	2001-2	SAQ	13.4	34.0	±2.2	3744	ESS	2002	FTF	10.7	30.9	±1.4	1811	2.7	2.867	**		0.08
Germany, East	2001-2	SAQ	5.8	23.3	±2.6	959	ESS	2002	FTF	3.7	18.9	±1.1	1097	2.1	2.220	*		0.10
France	1998-9	SAQ	9.0	28.6	±1.6	1788	EB	1998	FTF	5.2	22.2	±1.4	979	3.8	3.585	***	*	0.15
France	1998-9	SAQ	9.0	28.6	±1.6	1788	ISSP	1998	SAQ	13.4	34.1	±2.0	1118	-4.4	3.748	***	*	0.14
France	1998-9	SAQ	9.0	28.6	±1.6	1788	WVS	1999	FTF	7.6	26.4	±1.3	1608	1.4	1.528			0.05
Norway	1980-1	SAQ	5.0	21.8	±1.8	748	WVS	1982	FTF	5.7	23.0	±1.4	1045	-0.6	0.585			0.03
Norway	1990-1	SAQ	4.7	21.3	±1.5	872	EB	1990	FTF	4.9	21.7	±1.3	1011	-0.2	0.241			0.01
Norway	1990-1	SAQ	4.7	21.3	±1.5	872	WVS	1990	FTF	5.1	22.1	±1.2	1228	-0.4	0.441			0.02

Continued

Table 1. Continued

Country	Diary estimates						Stylized estimates						Raw			Effect size		
	Year	Mode	Rate (%)	SD	CI	N	Study	Year	Mode	Rate (%)	SD	CI	N	gap	Z-test		p	p'
Norway	1990–1	SAQ	4.7	21.3	±1.5	872	ISSP	1990	SAQ	8.5	27.9	±1.4	1500	–3.8	3.493	***	*	0.16
Norway	1990–1	SAQ	4.7	21.3	±1.5	872	EB	1991	FTF	3.5	18.4	±1.1	1001	1.2	1.323			0.06
Norway	1990–1	SAQ	4.7	21.3	±1.5	872	ISSP	1991	SAQ	4.6	21.0	±1.1	1470	0.1	0.089			0.00
Norway	2000–1	SAQ	3.8	19.0	±1.4	982	ISSP	2000	SAQ	6.6	24.9	±1.3	1436	–2.9	3.039	**		0.13
Norway	2000–1	SAQ	3.8	19.0	±1.4	982	ISSP	2002	SAQ	6.9	25.3	±1.3	1457	–3.1	3.268	**		0.14
Norway	2000–1	SAQ	3.8	19.0	±1.4	982	ESS	2002	FTF	5.0	21.8	±1.0	2035	–1.3	1.538			0.06
Finland	1999	SAQ	7.0	25.5	±1.2	1926	Gallup	1999	FTF	6.6	24.9	±1.7	988	0.4	0.402			0.02
Slovenia	2000–1	SAQ	18.5	38.8	±2.0	2784	ISSP	2000	FTF	21.0	40.7	±2.5	1054	–2.5	1.729			0.06
Slovenia	2000–1	SAQ	18.5	38.8	±2.0	2784	WVS	1999	FTF	17.2	37.7	±2.4	989	1.3	0.922			0.03
Spain	2003	SAQ	15.5	36.2	±1.1	7829	ISSP	2002	FTF	21.7	41.3	±1.6	2471	–6.2	7.191	***	***	0.16
Spain	2003	SAQ	15.5	36.2	±1.1	7829	ESS	2002	FTF	19.8	39.9	±2.1	1717	–4.3	4.391	***	***	0.11
Spain	2003	SAQ	15.5	36.2	±1.1	7829	ESS	2004	FTF	18.9	39.2	±1.9	1654	–3.4	3.419	***		0.09
Austria	1992	SAQ	21.5	41.1	±2.0	2623	ISSP	1992	FTF	26.8	44.3	±2.7	1021	–5.3	3.420	***		0.12
Italy	1988–9	SAQ	34.1	47.6	±1.2	9542	EB	1988	FTF	39.0	48.8	±3.0	1053	–4.9	3.177	**		0.10
Italy	1988–9	SAQ	34.1	47.6	±1.2	9542	EB	1989	FTF	40.8	49.1	±1.7	3047	–6.6	6.658	***	***	0.14
Italy	2003	FTF	25.1	43.5	±1.1	16293	ESS	2002	FTF	32.4	46.8	±2.9	1205	–7.3	5.610	***	***	0.16
Italy	2003	FTF	25.1	43.5	±1.1	16293	ESS	2004	FTF	29.7	45.7	±2.5	1527	–4.6	3.927	***	**	0.10
Great Britain	1974–5	SAQ	10.2	30.2	±1.6	1809	EB	1975	FTF	13.3	33.9	±2.0	1138	–3.0	2.535	*		0.09
Great Britain	1983–4	SAQ	13.4	34.0	±2.3	1212	EB	1985	FTF	15.4	36.1	±2.1	1123	–2.0	1.402			0.06
Great Britain	1987	SAQ	11.2	31.6	±2.1	1257	ISSP	1988	SAQ	16.1	36.7	±2.0	1307	–4.8	3.569	***	*	0.14
Great Britain	1987	SAQ	11.2	31.6	±2.1	1257	EB	1988	FTF	14.7	35.5	±2.2	1012	–3.5	2.484	*		0.10

Continued

Table 1. Continued

Country	Diary estimates						Stylized estimates						Raw gap	Z-test	p	p'	Effect size	
	Year	Mode	Rate (%)	SD	CI	N	Study	Year	Mode	Rate (%)	SD	CI						N
Great Britain	2000–1	SAQ	10.2	30.3	±1.2	3936	ISSP	2000	SAQ	12.6	33.2	±2.2	972	–2.4	2.210	*		0.08
Great Britain	2000–1	SAQ	10.2	30.3	±1.2	3936	ISSP	2002	SAQ	13.0	35.9	±1.6	1960	–2.9	3.302	***		0.09
Great Britain	2000–1	SAQ	10.2	30.3	±1.2	3936	ESS	2002	FTF	12.6	33.2	±1.6	2051	–2.4	2.831	**		0.08
Great Britain	2005	FTF	9.0	28.6	±2.7	761	EB	2005	FTF	11.9	32.3	±2.0	995	–2.9	1.934	*		0.09
Great Britain	2005	FTF	9.0	28.6	±2.7	761	EB	2005	FTF	13.8	34.5	±2.1	1028	–4.8	3.131	**		0.15
Ireland	2005	FTF	42.2	49.4	±5.3	509	EB	2005	FTF	49.0	50.0	±3.1	999	–6.8	2.506	*		0.14
Ireland	2005	FTF	42.2	49.4	±5.3	509	EB	2005	FTF	49.8	50.0	±3.1	988	–7.6	2.775	**		0.15
Ireland	2005	FTF	42.2	49.4	±5.3	509	ESS	2006	FTF	46.2	49.9	±2.6	1788	–3.9	1.567			0.08
Canada	1981	Phone	22.3	41.7	±4.5	374	WVS	1982	FTF	32.4	46.8	±2.7	1254	–10.1	3.731	***	*	0.23
Canada	1992	Phone	15.5	36.2	±2.4	1245	ISSP	1992	SAQ	25.4	43.6	±2.7	1004	–9.9	5.858	***	***	0.25
Canada	1999	CATI	14.9	35.6	±2.2	1478	ISSP	1998	SAQ	21.9	41.4	±3.0	974	–7.0	4.440	***	***	0.18
Canada	1999	CATI	14.9	35.6	±2.2	1478	WVS	2000	FTF	25.1	43.4	±2.2	1925	–10.2	7.283	***	***	0.26
Canada	2005	CATI	10.2	30.2	±1.3	2980	CGSS	2004	CATI	27.1	44.4	±0.8	16802	–16.9	19.784	***	***	0.45
Canada	2005	CATI	10.2	30.2	±1.3	2980	WVS	2006	FTF	24.6	43.1	±2.4	2057	–14.4	13.697	***	***	0.39
United States	1975–6	Mixed	31.6	46.5	±2.7	1766	GSS	1975	FTF	44.9	49.8	±2.5	1487	–13.3	7.811	***	***	0.28
United States	1975–6	Mixed	31.6	46.5	±2.7	1766	GSS	1976	FTF	41.6	49.3	±2.5	1492	–10.0	5.931	***	***	0.21
United States	1975–6	Mixed	31.6	46.5	±2.7	1766	ANES	1976	FTF	38.5	49.1	±2.0	2226	–6.9	4.497	***	***	0.14
United States	1985	SAQ	29.3	45.5	±4.6	560	GSS	1985	FTF	44.0	49.7	±2.5	1530	–14.7	6.069	***	***	0.31
United States	1993	Phone	26.3	44.0	±2.4	1728	GSS	1993	FTF	44.1	49.7	±2.5	1568	–17.8	10.737	***	***	0.38
United States	1998–9	CATI	29.8	45.9	±9.3	155	GSS	1998	SAQ	40.9	49.2	±1.8	2788	–11.0	2.726	**		0.23
United States	1998–9	CATI	29.8	45.9	±9.3	155	ANES	1998	FTF	37.3	48.4	±2.7	1271	–7.5	1.826			0.16

Continued

Table 1. Continued

Country	Diary estimates						Stylized estimates						Raw			Effect size		
	Year	Mode	Rate (%)	SD	CI	N	Study	Year	Mode	Rate (%)	SD	CI	N	gap	Z-test		p	p'
United States	1998–9	CATI	29.8	45.9	±9.3	155	WVS	1999	FTF	45.2	49.8	±2.9	1198	–15.3	3.628	***	*	0.32
United States	2003	CATI	25.1	43.4	±1.3	4901	GSS	2002	FTF	40.3	49.1	±1.8	2743	–15.2	13.856	***	***	0.33
United States	2003	CATI	25.1	43.4	±1.3	4901	ANES	2002	CATI	42.0	49.4	±2.6	1497	–16.9	12.605	***	***	0.36
United States	2003	CATI	25.1	43.4	±1.3	4901	GSS	2004	FTF	41.9	49.4	±1.8	2801	–16.8	15.319	***	***	0.36
United States	2003	CATI	25.1	43.4	±1.3	4901	ANES	2004	CATI	35.9	48.0	±2.7	1204	–10.8	7.543	***	***	0.24
United States	2004	CATI	25.3	43.5	±1.7	3299	GSS	2004	FTF	41.9	49.4	±1.8	2801	–16.6	13.768	***	***	0.35
United States	2004	CATI	25.3	43.5	±1.7	3299	ANES	2004	CATI	35.9	48.0	±2.7	1204	–10.6	7.008	***	***	0.23
United States	2005	CATI	24.7	43.1	±1.8	3033	GSS	2004	FTF	41.9	49.4	±1.8	2801	–17.2	13.965	***	***	0.37
United States	2005	CATI	24.7	43.1	±1.8	3033	ANES	2004	CATI	35.9	48.0	±2.7	1204	–11.2	7.325	***	***	0.24
United States	2005	CATI	24.7	43.1	±1.8	3033	WVS	2006	Web	36.0	48.0	±3.3	1167	–11.3	7.334	***	***	0.25
United States	2005	CATI	24.7	43.1	±1.8	3033	GSS	2006	FTF	39.8	49.0	±1.4	4491	–15.1	13.592	***	***	0.33
United States	2006	CATI	25.4	43.5	±2.1	2952	WVS	2006	Web	36.0	48.0	±3.3	1167	–10.7	6.855	***	***	0.23
United States	2006	CATI	25.4	43.5	±2.1	2952	GSS	2006	FTF	39.8	49.0	±1.4	4491	–14.5	12.878	***	***	0.31
United States	2007	CATI	24.3	42.9	±1.9	2897	WVS	2006	Web	36.0	48.0	±3.3	1167	–11.7	7.573	***	***	0.26
United States	2007	CATI	24.3	42.9	±1.9	2897	GSS	2006	FTF	39.8	49.0	±1.4	4491	–15.5	13.779	***	***	0.33
United States	2007	CATI	24.3	42.9	±1.9	2897	GSS	2008	FTF	39.3	48.8	±2.1	2014	–15.0	11.229	***	***	0.32
United States	2008	CATI	23.9	42.6	±1.8	3124	GSS	2008	FTF	39.3	48.8	±2.1	2014	–15.4	11.769	***	***	0.33

NOTE.— * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$, two tailed; p' is Bonferroni corrected significance. See online appendices for more information on the studies included here. ANES = American National Election Study; CGSS = Canadian General Social Survey; CNES = Canadian National Election Study; EB = Eurobarometer; ESS = European Social Survey; GSS = American General Social Survey; ISSP = International Social Survey Program; WVS = World Values Survey [0].

ending in 2008 at nearly 10 percent. Stylized rates of attendance in the East are characterized by noisy stability with rates in the low single digits (see figure 3). The 2001–2002 West German diary estimate⁵ (10.7 percent) falls close to the stylized estimate from that year (13.4 percent, 2002 ESS) resulting in a small (2.7) but significant gap ($p \leq 0.01$). In comparison to the East German diary estimate (5.8 percent), the 2002 ESS (3.7 percent) yields a small but significant gap (1.1; $p \leq 0.05$). In neither of these comparisons do the German gaps reach substantive significance, with effect sizes well below 0.200.

France: Less than a quarter of French respondents (23 percent) reported regular attendance on stylized measures in 1970, decreasing over time to about 6 percent in 2008 (see figure 4). The only available diary estimate (9 percent in 1998–1999) falls in the middle of the stylized estimates for those years (5.2, 7.6, and 13.4 percent). The gaps between the diary and the highest (1998 ISSP; –4.4-point gap) and lowest (1998 EB; 3.8-point gap) stylized estimates are statistically significant (both at $p \leq 0.001$) but have opposite signs. The gap between the diary and the 1999 WVS (1.4 points) does not reach statistical significance ($p = 0.125$). In none of these comparisons does the difference reach substantive significance ($d < 0.200$).

Norway: The stylized measures of attendance from Norway show little discernible trend (see figure 5). The earliest stylized estimate available, 1982, shows a frequent, regular attendance rate of just less than 6 percent, while the latest year of data, 2008, shows a rate not much different (4.3 percent). The first diary, 1971, falls a decade before the first available stylized estimate and will not be considered here. The 1980–1981 diary shows a rate of 5 percent, falling very close to the nearest stylized estimate (1982 WVS; 5.7 percent), yielding a small and nonsignificant gap. The 1990–1991 diary (4.7 percent) is compared to five stylized estimates, yielding four small and nonsignificant gaps (0.1 to 1.2), and one larger (3.8) and statistically significant ($p \leq 0.001$) gap. The last diary estimate (3.8 percent in 2000–2001) is close to one of the three proximate stylized estimates (5.0 percent, 2002 ESS estimate) but is significantly different from the ISSP estimates from 2000 and 2002 (6.6 and 6.9 percent). In none of these comparisons does the gap approach substantive significance.

Finland: The second Nordic country included in the current project, Finland, looks similar to Norway in its low conventional survey estimates between 3 and 8 percent (see figure 6). While three diary estimates are available in Finland, only one (1999) falls within the series of available stylized estimates. This

5. A time-use study in 1966 is available in the MTUS but falls prior to the earliest available stylized estimate. Another is available in the early 1990s but does not contain the information needed to compute rates of religious service attendance.

estimate (7.0 percent) does not differ statistically or substantively from the Gallup estimate of the same year (6.6 percent).

Slovenia: The second post-communist country included in the current project, Slovenia, shows a moderate declining trend in attendance on conventional surveys (see figure 7). Slovenian respondents registered a regular attendance rate of about 23 percent in 1992, dropping to about 16 percent in 2008. The only time-use estimate from Slovenia is from 2000–2001 (18.5 percent), and is similar to those based on the stylized measures from the 2000 ISSP (21.0 percent) and the 1999 WVS (17.2 percent). In neither case does the diary estimate differ statistically or substantively from the stylized estimates.

Spain: About 41 percent of Spaniards reported frequent, regular attendance in 1981, and this rate fell to about 17 percent in 2008 (see figure 8). The single time-use estimate in 2003 (15.5 percent) is compared with three stylized estimates: ISSP 2002 (21.7 percent), ESS 2002 (19.8 percent), and ESS 2004 (18.9 percent). In each case, the diary estimate is significantly lower than the stylized estimates (both at $p \leq 0.001$), although this is possibly due to the enormous sample size of the diary ($n = 7829$) for the relatively smaller gaps with the ESS estimates. In no cases are the gaps substantively significant ($d < 0.200$).

Austria: The observed Austrian conventional survey estimates begin in 1989 at 33 percent, declining to the mid-teens in the mid-2000s (see figure 9). The only available diary estimate for Austria is 21.5 percent in 1992, and is compared to a single stylized estimate (26.8 percent) from the 1992 ISSP. The difference between these estimates is statistically ($p \leq 0.001$), although not substantively ($d = 0.12$), significant.

Italy: The rate of regular reported attendance in Italy starts high in 1970 at greater than 55 percent, declining quickly to around 32 percent in the early 1980s (see figure 10). The trend then increases again, although more gradually than the earlier precipitous decline, reaching a value of about 42 percent in the mid-1990s. Another rapid decline in the late 1990s yields a final rate of around 30 percent in 2005. The 1988–1989 diary (34.1 percent) is compared to the 1988 and 1989 Eurobarometers. Both (39.0 and 40.8 percent) are significantly higher than the diary estimate. The 2003 diary estimate (25.1 percent) is compared to the 2002 and 2004 ESS. Both (32.4 and 29.7 percent) are significantly higher than the diary estimate. The significant gaps may be due to the extremely large samples in the diaries (9542 and 16,293). In neither year are the gaps substantively significant ($d < 0.200$).

*Great Britain*⁶: The earliest stylized estimate for Great Britain is about 15 percent in 1973, and remains virtually equivalent nearly four decades later at about

6. British data exclude Northern Ireland. Estimates here reflect only Great Britain proper, although some estimates exclude remote parts of the Scottish Highlands and the Crown Dependencies.

12 percent in 2008 (see figure 11). Five diary estimates are available for Great Britain. The 1974–1975 diary estimate (10.2 percent) is compared to the 1975 Eurobarometer (13.3 percent), yielding a statistically significant three-point gap. The 1983–1984 diary (13.4 percent) is compared to the 1985 Eurobarometer, yielding a nonsignificant two-point gap. The 1987 diary is compared to two stylized estimates, the 1988 ISSP and 1988 Eurobarometer. The gap for the former (4.8 points) and the latter (3.5 points) are both statistically significant. The 2000–2001 diary (10.2 percent) is compared to three stylized estimates from the ISSP 2000 (12.6 percent), ISSP 2002 (13.0 percent), and ESS 2002 (12.6 percent). All three gaps (2.4, 2.9, and 2.4) are statistically significant. The 2005 diary (9.0 percent) is compared to two 2005 Eurobarometer surveys (11.9 and 13.8 percent), yielding two (2.9 and 4.8) statistically significant gaps. While consistent in size, none of these comparisons yields a substantively significant gap ($d < 0.200$; most $d < 0.100$).

Ireland: The Irish data show the highest levels of self-reported attendance (see figure 12). From 1973 to 1985, attendance rates from conventional surveys remained extremely high, at nearly 90 percent. Rates of reported attendance dropped dramatically in the mid-1980s, ending in 2006 at about 46 percent. The time diary estimate from 2005 is compared to two stylized estimates from the Eurobarometer (49.0 and 49.8 percent) and to one from the 2006 ESS (46.2 percent). The two gaps from the Eurobarometer (6.8 and 7.6) both reach statistical significance, although the ESS (3.9) does not. None of these three gaps reaches substantive significance ($d < 0.200$).

Canada: The Canadian trend is clearly downward (see figure 13), starting at 41 percent in 1974 and ending near 25 percent in the mid-2000s⁷. The first diary, 1981 (22.3 percent), is compared to the 1982 WVS (32.4 percent), yielding a large and significant gap (10.1 points). The 1992 diary (15.5 percent) is compared to the 1992 ISSP (25.4 percent), also yielding a large and significant gap (9.9 points). The 1999 diary (14.9 percent) is compared to two stylized estimates: the 1998 ISSP (21.9 percent) and the 2000 WVS (25.1 percent). These gaps (7.0 and 10.2 points, respectively) both rise to statistical significance. The 2005 diary (10.2 percent) is compared to two stylized estimates: the 2004 CGSS (27.1 percent) and the 2006 WVS (24.6 percent). These large gaps (16.9 and 14.4 points) both rise to statistical significance. Unlike all the countries discussed previously, the Canadian gaps also rise to substantive significance. With the exception of 1998 ISSP, all gaps have at least a small effect size, with the 2005 gaps approaching a medium effect size.

United States: The earliest stylized estimates are both low (39.7 percent in 1970) and high (50.1 percent in 1972) values; more recent estimates in the late

7. Two stylized estimates are available prior to 1970, and both follow this trend: 59 percent in 1965 and 51 percent in 1968.

2000s are in the upper 30s (see figure 14). The U.S. has 10 diary estimates that can be compared to the conventional survey estimates, although one (1998) has too small a sample size to be reliable and the last six are grouped closely together. The 1974 diary (31.6 percent) falls well below the nearest stylized estimates from the GSS 1975 (44.9 percent), GSS 1976 (41.6 percent), and ANES 1976 (38.5 percent). The gaps range from 6.9 to 13.3 points, and are all statistically significant ($p \leq 0.001$). The 1985 diary (29.3 percent) also falls well below the single comparable stylized estimate from the 1985 GSS (44.0 percent), yielding a large (14.7) and significant ($p \leq 0.001$) gap. Compared to the 1993 GSS (44.1 percent), the 1993 diary (26.3 percent) is nearly 18 points lower, creating a very large and significant gap ($p \leq 0.001$). The last six American diaries were conducted in consecutive years from 2003 to 2008. The 2003–2008 diary estimates are nearly identical, ranging from 24 to 25 percent. Comparisons to the GSS, ANES, and WVS (from 36 to 42 percent) yield large and significant ($p \leq 0.001$) gaps ranging from 11 to 17 points. Like Canada, and unlike all the other countries discussed, the American gaps reach substantive significance in nearly every case, with effect sizes ranging between 0.200 and 0.400.

Using a Bonferroni correction⁸ to adjust for the increased probability of a Type 1 error given the multiple comparisons, an alpha of 0.0006 is needed to maintain the family-wise alpha of 0.05. This would result in a number of additional nonsignificant results, particularly one from each of the Netherlands (2000 ISSP), Spain (2004 ESS), and Italy (1998 EB). More dramatically, none of the Irish, East German, West German, or Austrian gaps would remain statistically significant, and only one of the British and Norwegian gaps would. However, neither the Canadian nor American findings would be altered.

Discussion

The overall pattern in conventional survey rates of European attendance is toward infrequency. This pattern can be characterized in three ways: (i) low and stable, although noisy, rates like those in Great Britain and the Nordic countries; (ii) linear trends over time toward lower rates, like those in the Netherlands and West Germany; and (iii) more complex trends leading toward lower rates over time, like those in Italy and Ireland. Considering only the stylized reports from conventional surveys, the difference between the United States and all the other countries in the study appears to be growing. Relative stability in the American estimates in comparison to Canadian and European secularization is creating a yawning divide, indicating that Americans are maintaining a high and stable level of religiosity (Presser and Chaves 2007) when compared to

8. This correction is presented after the uncorrected results because the adjustment makes significant differences less likely, in agreement with the hypotheses of this article.

most other Western nations. American religious exceptionalism appears to be supported.

However, when diary data are included in these analyses, and the differing levels of bias in the conventional survey reports are considered, a different picture emerges. Comparing rates of attendance from time diaries puts the United States in line with a number of European countries. In the past decade, American rates of attendance (from 24 to 25 percent) look much more similar to Italy (25 percent in 2003) and Slovenia (19 percent in 2000) than the conventional survey data would suggest.

The American trend consistently maintains a very large gap. Time diary estimates range primarily from 10 to 18 percentage points below the conventional survey estimate. The gaps in the Canadian case resemble those in the American case. In both of these countries, gaps are statistically and substantively significant. Outside North America, the largest gaps are found in the Catholic countries of Europe, but none matches the size and substantive significance of those in Canada and the U.S. Even in high-attendance Ireland, the gap ranges only from about four to eight points and is neither consistently statistically significant nor substantively significant. Austria's single comparison shows a statistically significant five-point gap, but does not reach substantive significance. Spain's three comparisons yield gaps from four to seven points, all statistically significant, but none substantially so. The two Italian diary studies yield gaps ranging from about five to seven points. While these all reach (uncorrected) conventional levels of statistical significance, none approaches substantive significance. The French gap also reaches statistical significance in two of the three comparisons, although these two notably differ in sign—the ISSP showing an overreport and the WVS showing an underreport, both of about four points. Some part of these gaps may be caused by other nonsampling errors. However, the consistency and magnitude of the American gap in light of the multiple sources of conventional survey data (in the U.S. and elsewhere) suggest a substantive difference between (North) America and Europe in overreporting.

LIMITATIONS

While this study utilizes nearly 500 individual studies from 14 countries and regions spanning over four decades and including nearly a million respondents, a lack of data still puts a caveat on some of its inferences. The number of countries that have only one available diary study, and diary years without available conventional surveys, necessitates cautious inferences. However, there are a number of countries discussed here using sufficient data to warrant stronger inferences. The Netherlands, Great Britain, and Norway all have multiple mode comparisons over a number of years. In comparison with each of these cases, the American gap is wide and consistent, and this supports the hypothesis presented here.

Also adding a caveat to these findings is the nature of religious practice across faith communities. Some religious organizations and individual attendees do

not use Sunday as their primary day of worship. Are these results valid even without controlling for denominational distinctions, or are differences in the gap between countries due to differing fractions of religious groups who do not attend on Sunday? National statistics show a relatively small amount of variation of the percentage of those with non-Christian faiths across the countries considered here: the U.S., Italy, and the UK have about 5 percent, comparable to Austria and the Netherlands (8 percent), Germany (6 percent), and Canada (4 percent). The lowest rates are in Norway (2 percent), Slovenia (2 percent), and Finland (< 1 percent), and the highest is in France (14 percent). In Spain, only the percentage of non-Catholics is available (between 6 and 10 percent), which includes Protestants, Orthodox Christians, and all other faith groups. If differences in these small groups among countries is driving the size of the gap, France should have a large gap and Canada a relatively small one. However, this is not the case. While these small populations likely do cause some error and increase the size of the gaps between conventional and diary estimates, they appear unlikely to be a substantial cause of the pattern of results seen here. Unfortunately, since the diary studies available do not contain the necessary variables, this question cannot be pursued in much greater depth.

It is also unlikely that characteristics of the questions, sampling frames, and methods in the surveys used here explain the large and consistent gap in the U.S. and Canada. First, American and Canadian stylized questions do not differ systematically from those used in Europe, and certainly not in a way that would cause such large and consistent effects. The questions used here are identical at best, and comparable at worst, when looking across studies, countries, and years. No predictable pattern of results emerges given the variation in the response options by country and year. Second, it is unlikely that differences in the sampling frames could result in these findings. With very few exceptions, all samples are based on well-accepted probability sampling designs and appear to cover their populations well. Moreover, the analyzed samples are identical in the age ranges that they cover, including only adults aged 20 and higher. Moreover, the effects of demographic covariates commonly associated with church attendance (e.g., age, marital status, parenthood, income, education) do not vary significantly or consistently between models predicting each of these attendance measures (Brenner 2009).

Finally, while the differences between survey modes are unlikely to cause these findings, they do deserve further attention. Even though the use of telephone interviewing on diary studies and the emergence of overreporting are strongly correlated, it is unlikely that telephone administration is causing the American and Canadian gaps. Telephone diary administration is unlikely to produce the social-desirability bias we may expect from conventional telephone interviewing. Moreover, any bias would likely result in higher estimates using a phone mode in comparison to self-administered methods. This suggests that the gaps estimated here are smaller than they would be had the diaries been self-administered. It is also unlikely that telephone administration of diaries

could potentially promote errors caused by forgetting, due to the yesterday-recall procedure used. While the yesterday-recall procedure may lead to the inadvertent forgetting of some minor, short-duration activities, it is unlikely that major activities, like attending a religious service, would be forgotten (Juster 1985).

Conclusion

The substantial overreporting in American survey estimates of religious service attendance raises a question about the nature of religiosity and survey measurement. Paraphrasing the quotations from Hadaway, Marler, and Chaves (1998) and Burke (1980), conventional survey measurement of religious practice calls for self-reflection by the respondent, yielding an identity claim based not (only) on one's actual behavior but also on one's idealized self-concept. By moving into a measurement situation with a nondirective measure of religious participation, the prompting of this identity process may be avoided. Time diaries measure behavior using a chronological procedure that avoids much of the bias inherent in self-reports of socially desirable behaviors. Comparisons of these two methods suggest that the biasing effect of directive measurement of religious service attendance is not a universal survey artifact. Rather, overreporting fails to appear consistently and substantially in the European surveys examined here, but does appear in the surveys administered in the two North American countries considered. These findings suggest that in the United States, and possibly in Canada, a religious identity is viewed as important, and that this factor contributes to bias in the stylized measures. Moreover, the relative stability of the American gap suggests that this pattern has persisted for nearly four decades, and perhaps longer.

Given these findings, any discussion of exceptional American religious practice should be cautious in using terms like "outlier" and in characterizing American self-reported attendance rates from conventional surveys as accurate reports of behavior. Rather, while still relatively high, American attendance looks more similar to a number of countries in Europe, after accounting for overreporting. American religion may, however, be considered exceptional in a new way in light of these findings: Unlike the other countries examined here, American behavior continues its consistent failure to match self-reported rates. American religiosity as an outlier is a concept that may be better applied to identity and self-concept rather than behavior.

Supplementary Data

Supplementary data are freely available online at <http://poq.oxfordjournals.org/>.

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