A REVIEW OF CHURCH ATTENDANCE MEASURES

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Estimates of church attendance rates in the United States differ by the measure used: Headcount approaches generate rates about half those of survey-based approaches. Based on a series of experiments conducted on the 1996 General Social Survey (GSS) and a review of other studies and experiments, these differences in church attendance rates seem to result from several factors. First, because of both cognitive processes and social desirability effects, standard survey items yield overreports. Second, people often define “attending religious services” more broadly than what is tallied by headcounts. Finally, headcounts and survey-based estimates yield different results because of various other factors, such as the difficulty headcounts have in separating adult attendance from total attendance, and their frequent exclusion of non-weekend services.

Recent studies (Hadaway, Marler, and Chaves 1993; Chaves and Cavendish 1994) report that weekly church attendance is grossly overreported in standard surveys in the United States. This claim both seriously challenges our understanding of the profile of contemporary religious behavior in the United States and questions the accuracy of survey research in general. This paper reviews several new studies of church attendance rates and reports on new experiments conducted on the 1996 General Social Survey (GSS). The items used here from the 1996 GSS appear in Appendix A.

COMPARING MEASURES OF WEEKLY CHURCH ATTENDANCE

Prior studies have used four procedures to assess levels of church attendance reported in standard surveys. First, survey versus headcount comparisons estimate weekly church attendance from surveys and from counts of the number of people attending religious services. Second, survey experiments compare responses to a standard question asking about weekly attendance with responses to a differently worded question designed to yield more accurate (lower) estimates. Third, intersurvey evaluations compare weekly attendance estimates from one survey using a standard item to another survey with a supposedly more accurate measure. Finally, more indirectly, studies look at how the reported attendance of different groups or different target populations differ and evaluate what this difference indicates about respondents’ propensities to misreport their church attendance.

The survey/headcount comparisons indicate that standard attendance questions about “attending church last week” (e.g., the Gallup item asks “Did you, yourself, happen to attend church or synagogue in the last seven days?”) yield much higher attendance numbers than do counts of the number of people attending services. Table 1 indicates that three survey/headcount comparisons found that headcounts of church attenders were only 55 to 59 percent of the attendance level reported in surveys (Hadaway et al. 1993). The presumption is that net overreporting occurs in standard surveys; this does not mean that underreporting does not occur.

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1 The 1996 GSS is a full-probability, in-person interview of adults living in households in the United States. For details see Davis and Smith (1996).

2 The presumption is that net overreporting occurs in standard surveys; this does not mean that underreporting does not occur.

3 Here and elsewhere in this paper, over-reporting is measured by the ratio of the new method (e.g., census count) to the standard
Table 1. Some Comparisons of Weekly Church Attendance Estimates

<table>
<thead>
<tr>
<th>Survey vs. Headcount Methods</th>
<th>Method/Item</th>
<th>Percentages Attending Church “Last Week”</th>
<th>New Method/ Old Method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Astabula County Protestants: Survey: Astabula, Headcount: Astabula</td>
<td>35.8</td>
<td>.547(^{b})</td>
</tr>
<tr>
<td></td>
<td>Survey: Astabula, Headcount: Astabula</td>
<td>33.2(^{c})</td>
<td>.590</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey Question-Wording Experiments</th>
<th>Method/Item</th>
<th>Percentages Attending Church “Last Week”</th>
<th>New Method/ Old Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRRC (1994)(^{d})</td>
<td>Standard Item: Gallup 1993</td>
<td>41</td>
<td>.976</td>
</tr>
<tr>
<td></td>
<td>Variant Item: Gallup 1993</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Smith (1995b)(^{e})</td>
<td>Standard Item: NES Pilot 1995</td>
<td>32.3</td>
<td>.988</td>
</tr>
<tr>
<td></td>
<td>Variant Item: NES Pilot 1995</td>
<td>31.9</td>
<td></td>
</tr>
<tr>
<td>GSS 1996 (Table 2, p. 135)(^{f})</td>
<td>Standard Item: GSS 1996</td>
<td>37.1</td>
<td>.825</td>
</tr>
<tr>
<td></td>
<td>Variant Item: GSS 1996</td>
<td>30.6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey Comparisons</th>
<th>Method/Item</th>
<th>Percentages Attending Church “Last Week”</th>
<th>New Method/ Old Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presser and Stinson (1998)(^{g})</td>
<td>Standard: Gallup and GSS, 1993–1994</td>
<td>37–43</td>
<td>.628–.730; .688–.800(^{h})</td>
</tr>
<tr>
<td></td>
<td>Variant: Maryland SRC, 1992–1994</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

\(^{a}\) See note 3 for details.

\(^{b}\) An alternative calculation from figures in Hadaway, Marler, and Chaves (1993) yields a ratio of .573.

\(^{c}\) Adjusted for people attending church on weekdays only.

\(^{d}\) Standard item: “Did you, yourself, happen to attend church or synagogue in the last seven days, or not?” Compared with variant item: “Now, I would like to ask you whether or not you happened to attend church or synagogue in the last seven days—that is, between last [day of the week] and today, and the name of the church or synagogue you attended. Did you, yourself, happen to attend church or synagogue in the last seven days? Please tell me the names of the church or synagogue you attended.”

\(^{e}\) Standard item: “Now I would like to ask you whether or not you happened to attend church or synagogue this (this past) weekend. Did you yourself attend church or synagogue this (this past) weekend?” Compared with variant item: “Lots of people tell us that they attend religious services quite regularly, but that this (this past) weekend, for some reason or another, they could not attend. In a moment, I am going to ask you whether you attended religious service this weekend. Before you answer, think of a number of different things that will likely come to mind if you actually did attend religious services: things like whether you walked, drove or were driven by another person to the service [pause]; what the weather was like on the way [pause]; if someone you expected to see was not there [pause]; and the particular hymns or prayers that took place. [pause] After thinking about it, you may realize that you did not go this weekend, but you can remember another earlier weekend in which you did attend. [pause] Now that you’ve thought about it, which of these statements best describe you? I did not attend religious services this weekend; I thought about going this weekend, but didn’t; I usually go, but didn’t this weekend; I am sure I attended religious services this weekend; (VOLUNTEERED) I went on an earlier weekend; (VOLUNTEERED) I never go to religious services.

\(^{f}\) See Appendix A for question wordings. Since the random subsample that included the experimental GSS church attendance item had a lower level of church attendance than the subsample with the Gallup item (as measured by the standard GSS attendance item that appeared on all forms), it is possible that much of the measured difference is due to differences in sample composition rather than to wording.

\(^{g}\) In this ASR issue. Standard item: Standard item on Gallup surveys in 1993 and 1994 and GSS standard item is converted to weekly rates in 1993 and 1994 (see Table 2). Compared to variant item: “I would like to ask you about things you did yesterday—from midnight Saturday to midnight last night. Let’s start with midnight Saturday. What were you doing? Where were you? What did you do next?” [and so on until midnight Sunday].

\(^{h}\) Adjusted for people attending church on a day other than Sunday, based on the 1996 GSS: 8.3 percent of weekly church attenders attended only on a non-Sunday.
These results stimulated a series of survey experiments using alternative questions designed to minimize overreporting and to yield lower, more reliable estimates. The first two such studies in Table 1, by Gallup in 1993 and the National Election Studies (NES) in 1995, failed to find any statistically significant differences between results from surveys using the standard item and those using variant wordings; therefore they questioned the findings of the survey/headcount studies—that surveys overreport church attendance. The 1993 Gallup experiment was a fairly weak test, however. The variant item gave respondents more time to think about their answer and required that they substantiate their reported attendance by naming the church involved, but it did nothing to reduce the social desirability pressure to report attending, and only for those never attending church would the required naming of the church attended present a notable cognitive deterrent to overreporting.

In comparison, the 1995 NES experiment appears to be a stronger test. The variant wording (1) encourages respondents to think carefully about attending church, (2) tries to eliminate telescoping by focusing attention on specific events related to the last attendance, and (3) reduces social desirability pressures by assuring respondents that regular attenders may miss a particular week and by providing response categories that allow respondents to indicate that they are regular attenders, but did not attend last week. Nevertheless, the NES experiment showed even less evidence of overreporting than the Gallup experiment did.

The 1996 GSS experiment did, however, produce a significant difference in church attendance (p = .011): The standard Gallup question showed 37.1 percent attending and the GSS variant showed 30.6 percent (a ratio of .825). This reduction in reported attendance was achieved by (1) repeatedly emphasizing that reports were to cover only the last seven days, and (2) focusing not on church attendance, but on events occurring during the last week—church attendance was the fourth activity listed, following doctor visits, eating out, and going to the movies (see Appendix A). The intent of the first emphasis was to minimize telescoping, while the second was intended to reduce social desirability by framing the question as about activities in general during last week.

A nonexperimental comparison also compared standard, direct estimates of weekly attendance with an indirect (time-use) measure (Presser and Stinson 1998). Both the standard Gallup item and GSS’s general attendance item were converted to a weekly estimate. These estimates were then compared to an item on a 1992–1994 time-use survey from the University of Maryland’s Survey Research Center (SRC) that asked people interviewed on Mondays to report their full schedule of activities for the preceding day (i.e., from Saturday midnight until Sunday midnight). Like the GSS experiment, this approach cognitively focuses the respondent on a well-defined time frame and on activities in general rather than on church attendance in particular. In this case there are no prompts or direct inquiries about church services—attending church must be spontaneously recalled and reported by the respondent. The 1993–1994 Gallup and 1993–1994 GSS surveys produced estimates of weekly attendance of 37 to 43 percent; this new approach by the SRC indicated that Sunday attendance was significantly lower at 27 percent. When this latter figure is adjusted upward to account for non-Sunday attendance (based on 1996 GSS estimates), the adjusted SRC church attendance level is 29.6 percent, and the ratios are .688 to .800.

Finally, Hout and Greeley (1998, in this issue) evaluated the overreporting of church attendance found by Hadaway et al.’s (1993) survey/headcount study by considering whether (1) well-educated, “skeptical” respondents report less church attendance than others, and (2) married respondents report different attendance for their spouses than their spouses report for themselves. In both cases they were trying to see if groups more impervious to social desirability effects re-
port lower levels of church attendance. On the basis of this analysis they concluded that some minor overreporting might occur, yielding a ratio of about .91.5

In brief, while findings are quite mixed, it appears that alternative methods of measuring weekly church attendance—methods designed to reduce telescoping and social desirability effects—do result in lower reported levels of church attendance.6

THE MEANING OF ATTENDING RELIGIOUS SERVICES

The survey/headcount comparisons assume that standard church attendance questions refer to personal attendance in a formal place of worship at a regular worship service. This is probably what the designers of the items intended and what most analysts also assume. However, it is possible that respondents may interpret the key phrases (“attend religious services” in the GSS items and “attend church or synagogue” in the Gallup question) differently than researchers intended. In particular, it seems plausible that some people may apply a broader definition of these activities.

Taking the 1996 GSS weekly church attendance figure as the basis, we tried to verify that respondents’ reports were accurate and to determine whether reports matched the definition of “attendance” that was used in survey/headcount comparisons. The main adjustment involved the definition itself.

5 In line with Hout and Greeley’s (1998) spousal analysis, Smith (1985) shows that direct reports by married respondents and spousal reports yield highly similar and statistically indistinguishable estimates on a wide range of demographics. This is what one would expect if no differential measurement effects are present, since both represent random samples of married persons. On the 1986–1989 GSSs, which included questions on church attendance for self and spouse, 44.7 percent of married respondents directly reported going to church last week, and 42.8 percent of married respondents reported that their spouses attended last week. If we accept the spousal reports as more accurate (perhaps less influenced by social desirability), that indicates a ratio of .957.

6 The presumption is that the lower levels are more accurate, but this has not been substantiated by case-level validation studies.

everyone who said that they had “attend[ed] religious services” was asked three additional questions: If during the last week they had (1) attended a regular, weekly worship service at a church/synagogue (e.g., mass or Sunday morning services); (2) watched a religious program on television or listened to one on the radio; and (3) attended some other type of religious event or meeting (see Appendix A for details). Only those who said “yes” to the main part of the question or who mentioned a religious activity in the last part that was described as a worship service in the open-ended follow-up question were accepted as indicating that they had “attend[ed] religious services”: 88.8 percent were confirmed attenders, 4.6 percent were not attenders, .4 percent lacked a confirmed day, and 6.5 percent were uncertain. Taking the minimum exclusions of 5 percent lowered estimated church attendance rate to 29.2 percent; also excluding all “uncertains” reduced the rate to 27.2 percent. An intermediate procedure that allocated the uncertain cases produced a best estimate attendance rate of 28.0 percent, yielding a ratio of .755 (see Table 2).

The use of a broader definition of “church attendance” is also shown by a close examination of what people said in their reports about what days they attended church. Verbatim statements on both the GSS pretest (Smith 1995b) and the 1996 GSS itself indicate that many of the reports of weekday church activities represent participation in other than a full worship service. Looking at those who attended church on two or more days, it appears that over half are counting both worship services and other religious events (e.g., Bible study, prayer groups, choir practice, and so on) as “attend[ing] religious services.”7

In addition to searching for overreporting, an attempt was made to locate underreporting. All respondents who said they did not “attend religious services” in the last week were asked follow-up questions identical to those presented above: Had they

7 Although there is no direct evidence about the Gallup question’s formulation (“attend church or synagogue”), it is likely that the question is also understood by many respondents to include more than regular worship services.
Table 2. Church Attendance Estimates from the 1996 GSS

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Percent Attending Last Week</th>
<th>Number of Respondents</th>
<th>New Method/Old Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Gallup item</td>
<td>37.1</td>
<td>(511)</td>
<td>1.000</td>
</tr>
<tr>
<td>Standard GSS item (converted)</td>
<td>35.9</td>
<td>(2823)</td>
<td>.968</td>
</tr>
<tr>
<td>Last seven days variant</td>
<td>30.6</td>
<td>(951)</td>
<td>.825</td>
</tr>
<tr>
<td>Last seven days confirmed</td>
<td>30.5</td>
<td>(951)</td>
<td>.822</td>
</tr>
<tr>
<td>Last seven days worship only</td>
<td>29.2</td>
<td>(951)</td>
<td>.787</td>
</tr>
<tr>
<td>Last seven days worship only (estimate)</td>
<td>28.0</td>
<td>(951)</td>
<td>.755</td>
</tr>
<tr>
<td>Last seven days worship only (minimum)</td>
<td>27.2</td>
<td>(951)</td>
<td>.733</td>
</tr>
</tbody>
</table>

*Note: Question wordings are given in Appendix A.*

*See Smith (1997) for details.

*Minus one case for which no day was reported.

*Of those saying they “attended religious services,” 4.2 percent reported media viewing/listening and/or other religious activity, but no worship service.

*Estimate based on an allocation of the cases referred to in Table 1 partly as worship service attenders and partly as nonattendees (see Smith 1997).

*Of those saying that they “attended religious services,” 6.5 percent reported no religious activity (no viewing/listening, no worship service, no other religious activity).

watched or listened to a religious program, or had they attended “some other type of religious event or meeting?” These other religious activities were then detailed and coded as representing worship services, religious events other than worship services, and nonreligious events. None of the nonattendees reported going to a religious event that was in a fact a worship service. As such underreporting does not appear to have occurred. However, this analysis did reveal that 22.7 percent of the nonattendees were religiously active in some way during the week.8

In brief, people tend to understand phrases like “attend religious services” inclusively, and not as referring only to attending a regular worship service. If survey questions are intended to capture only such activities, then the current wordings of survey items will lead to overreports. However, if questions are trying to capture weekly religious participation that includes worship services, but is not restricted to those, then the current wording apparently underreports religious involvement because some, but not all people, now include religious activities beyond personally attending worship services in their self-reports.

**SUMMARY**

The 1996 GSS experiments and the Presser and Stinson (1998) comparisons both document moderate levels of overreporting of religious attendance with mid-range estimates of respectively .755 and .744. Moreover, the GSS and SRC estimates of the absolute level of survey attendance are also highly similar (28.0 percent for the GSS in 1996 and 29.6 percent for SRC in 1992–1994).9 Overreporting appears to occur because of some combination of a social desirability bias and telescoping (with perhaps the former encouraging the latter), and because people use a broader definition of “attend[ing] religious service” than was intended by researchers. (The latter leads to “overreports” only if the narrower definition of “attendance” is accepted as the base.) Although such levels of overreporting are noteworthy, levels are substantially smaller than those shown in survey/heardcount studies (ratios of .52 to .59). It is likely that the survey/heardcount proce-

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8 Moreover, this excludes family and personal activities such as saying grace, private prayers, Bible reading, and other such activities.

9 And since the GSS shows a slight decline in church attendance over time these estimates would be even closer if period was adjusted for.
duries overestimate overreporting, because of congregational undercounts (e.g., not including non-weekend services), the difficulty of separating adult attendance from total attendance, and other problems (see Celio 1993; Hout and Greeley 1998; Smith 1995a).

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### Appendix A. Question Wordings for Items on Church Attendance: GSS Standard and Experimental Items from the 1996 GSS

**Standard GSS Church Attendance Question**

How often do you attend religious services? (Use categories as probes, if necessary.)

**1996 GSS Experimental Questions**

1. Now I’m going to ask you about things you did during the last seven days. I’m only interested in what you did during the last seven days. From last (DAY OF WEEK) to today did you . . .
   a. Go to see a doctor or receive medical treatment at a clinic or hospital?
   b. Have a meal (breakfast, lunch, or dinner) at a restaurant (including fast food places and take-out)?
   c. Go to a movie theater to see a film?
   d. Attend religious services?

2. On what day or days did you attend religious services during the last seven days? (PROBE: “Did you attend religious services on any other days during the last seven days?” ASK UNTIL R SAYS “NO.”)

3. During the last seven days did you do the following:
   a. Attend a regular, weekly worship service at a church/synagogue (e.g., mass or Sunday morning services). Don’t include watching a service on TV or listening to one on the radio.
   b. Watch a religious program on television or listen to a religious program on the radio.
   c. Attend some other type of religious event or meeting (e.g. prayer breakfasts, Bible study groups, choir practices, church sponsored lectures, adult fellowship meetings)?

### REFERENCES


