

Religiosity-of-Interviewer Effects: Assessing the Impact of Veiled Enumerators on Survey Response in Egypt

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Abstract: While public opinion research has expanded rapidly in the Islamic world since 2001, little scholarly work has examined interviewer effects related to an enumerator's religious adherence. We find that the perceived religiosity of an interviewer impacts respondents' expressions of personal piety and adherence to Islamic cultural norms in a sample of approximately 1,200 women in Greater Cairo. Muslim women indicate that they are more religious and adherent to Islamic cultural norms when interviewed by an enumerator donning the Islamic headscarf. Conversely, members of Egypt's minority Coptic Christian community report that they are less adherent to Christianity when interviewed by a veiled enumerator. Through psychological processes of strategic self-presentation of identity and impression management, the veil may trigger Muslim respondents to express what they perceive to be socially desirable (i.e., more devout) responses; in contemporary Egypt, being perceived as pious may elicit social and economic benefits. Christians appear to deemphasize their religious identity to avoid appearing at odds with the dominant, Muslim majority to which the enumerator appears to belong. Younger, poorer and less educated women — who may be most susceptible to concerns about social desirability — show the largest effects.

INTRODUCTION

Since 2001, the number of public opinion surveys conducted in the Islamic world has markedly increased as scholars and policymakers, alike, have sought to understand how personal religiosity translates into

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political views and attitudes toward Islamic extremism in Muslim societies. Little scholarly work, however, has sought to address the unique types of interviewer effects that might influence survey responses in the Islamic context.

This article considers the effect of having an interviewer who wears a *hijab*, or Islamic headscarf, on responses to questions related to religiosity and Islamic cultural norms in a survey experiment administered on a sample of approximately 1,200 women in Greater Cairo. Whether an interviewer wears or does not wear the headscarf is an important form of non-verbal communication about both the religious affiliation of the survey enumerator as well as her degree of religious observance. We find that Muslim women are more likely to say that they are religious when the survey enumerator wears a veil. Members of Egypt's minority Coptic Christian community, on the other hand, report — on average — that they are less pious in their Christianity when questioned by an interviewer wearing an Islamic headscarf. In addition, Christian women interviewed by a veiled enumerator were more likely to report that their daughters had been subject to female circumcision, a practice performed in both communities but increasingly associated with Islamic cultural norms. Muslim women were also less likely to report that they had been forced to have sex with their husbands when they had been assigned a veiled interviewer; some Muslims maintain the social expectation that a wife does not have the right to refuse sexual intercourse to her husband as long as doing so does not cause her harm or stop her from carrying out religiously prescribed duties.

The differential response across Christian and Muslim populations suggests something about the psychological processes at work. In contemporary Egypt, being perceived as pious and able to withstand secular influence may elicit certain social and economic benefits. As individuals engage in strategic self-presentation of identity and impression management, the veil may trigger Muslim respondents to express what they perceive to be socially desirable (i.e., more devout) responses. Christians, on the other hand, appear to deemphasize their religious identity to avoid appearing at odds with the dominant, Muslim majority to which the enumerator appears to belong. Younger, poorer, and less educated women exhibit the largest effects. We interpret this result as support for a mechanism linking the observed effects to social desirability bias since young, less established individuals may be more concerned about impression management and strategic self-presentation toward enumerators that are presumed to be older and of a higher social status. These results suggest

that for studies of public opinion in the Muslim world, the responses given to questions related to religiosity and religion-related cultural norms may be systematically influenced by enumerator dress, which can provide an important signal of enumerator beliefs.

INTERVIEWER EFFECTS AND SOCIAL DESIRABILITY BIAS

The literature on interviewer effects suggests that the race and gender of an interviewer can systematically and significantly affect survey responses, biasing outcomes in a number of ways. Interviewer race has been found to impact attitudinal, behavioral, and even political-knowledge indicators, especially on questions addressing issues related to race (Schaeffer 1980; Cotter, Cohan, and Coulter 1982; Davis and Silver 2003). Regarding the gender of the interviewer, a number of studies show that respondents provide more progressive and egalitarian answers on gender-sensitive questions when interviewed by women (Lueptow, Moser, and Pendleton 1990; Kane and Macaulay 1993; Flores-Marcias and Lawson 2008; Benstead 2010). Both male and female respondents are also more willing to report details on sensitive topics, such as sexual activity, to female interviewers (Abramson and Handsschumacher 1978; Hansen and Schuldt 1982; Darrow et al. 1986; Catania et al. 1996).

In explaining interviewer effects, scholars believe respondents may mask their true feelings in an effort to please the interviewer or to appear to hold socially-approved norms (Goffman 1963). Social conformity and desirability bias generally refer to the tendency of respondents to provide responses that they believe will be viewed favorably by others and avoid embarrassment or criticism. Past social and psychological studies show that individuals will sometimes — consciously, or subconsciously — follow the dominant norms or opinion of the society they are in rather than maintaining their initial stance on a variety of issues (Asch 1951). Such conformity is thought to be encouraged by informal social sanctions or rewards that are frequently related to emotions such as shame and pride (Goffman 1967; Scheff 1988). The culture in which individuals grow up may be responsible for this conforming behavior, as determinants of shame and pride are based on culture-specific expectations (Bond and Smith 1996). The impact of these social sanctions is, therefore, different from culture to culture, and studies have found evidence of such desirability effects that reflect the norms of different settings (Zerbe and Paulhus 1987; Neto 1995; Kondo et al. 2010).

Survey data have given us insight into societal attitudes and interpersonal interactions by revealing under what conditions respondents will intentionally and inaccurately present themselves in socially admirable ways (Evans, Hansen, and Mittelmarmark 1977; Himmelfarb and Lickteig 1982; Paulhus 1984; Palvos 1972; Sigall and Page 1971; Warner 1965). Respondents representing a variety of races, for example, seek to avoid answering questions in ways that might offend the interviewer and, as a result, respondents typically express warmer feelings and higher levels of trust toward people that share the interviewer's race (Schuman and Converse 1971; Anderson, Silver, and Abramson 1988; Davis 1997a; 1997b; Krysan and Couper 2003). Among members of the same racial group, respondents may seek to avoid insulting an interviewer to a greater extent than an interviewer of another race as a result of in-group loyalty. Social deference theory also suggests that a desire to minimize the social distance between two strangers may lead to responses that complement the interviewer's perceived social group and in some cases demean the respondent's own social group (Lenski and Leggett 1960; Williams 1964; Reese et al. 1986; Kane and Macaulay 1993; Webster 1996; Davis 1997a).

Differential social status and power is also believed to impact interview response bias (Davis 1997; Kane and Macaulay 1993; Lenski and Leggett 1960; Reese et al 1986; Webster 1996; Williams 1964). Some respondents, particularly those in lower status social groups, might perceive an enumerator's higher social status. Respondents would act deferentially toward the enumerator by expressing opinions that complement the interviewer's social group or demean the respondents own social group. Davis for instance highlights African American respondents' reluctance to reveal their true political beliefs and "disassociate themselves from black issues, and alternatively appear more docile and accommodating" (Davis 1997a, 320). Thus, respondents who are members of groups that have been subjected to discrimination in the past, such as African-Americans or women, might be especially likely to express views that are respectful to high-status interviewers' social groups, such as white males.

Converse considers such findings in survey research as a useful "indicator of evolving areas of interpersonal tension...and deserve to be treated as a fact of social life and not merely as an artifact of the survey interview" (Converse 1971, 45). In this study, we use face-to-face surveys as an opportunity to examine interreligious interactions in Egypt and the influence of perceived interviewer religiosity on expressions of attitudes related to religious and cultural values. While public opinion

experts recognize the importance of race and gender in social desirability effects, little scholarly work has sought to address the unique types of interviewer effects that might influence survey responses in the religious context. Past studies show that weekly church attendance, a positive value in American society (Groves 1989), is grossly over reported in standard surveys in the United States (Hadaway, Marler, and Chaves 1993; Chaves and Cavendish 1994; Smith 1998); however, few studies have explored social desirability bias within the context of interfaith relations.

Our study considers social desirability effects in the context of Egypt, a country with two primary religious groups where Muslims vastly outnumber Christians. Specifically this article considers the effect of interviewer dress, particularly whether or not the interviewer dons the *hijab*, or Islamic headscarf, on questions related to personal religiosity and religious cultural norms. Understanding potential desirability bias in interfaith contexts will be increasingly important for sound research as investigation of religious attitudes increases. Major research projects that conduct polls in the Islamic world, including the World Values Survey and the Pew Global Attitudes project, seek to measure worldwide attitudes on a variety of subjects, including personal religiosity and religious adherence in the context of sectarian tension. Failure to account for the impact of non-verbal cues — like religious dress — may create biases in assessment both over time and in terms of cross-sectional variation.¹

INTERVIEWER DRESS AS A FORM OF NON-VERBAL COMMUNICATION

In contemporary Egypt, one observes considerable variety in terms of the style of dress worn by women, ranging from completely Westernized apparel to both traditional clothing and more modern Islamic garb. Previous research suggests that Islamic dress, particularly donning the veil, provides an external signal of Muslim identity and religious observance. Many scholars believe the choice of dress by women in part reflects different interpretations of the Koranic instructions for appropriate Islamic attire as well as varying levels of personal piety.

The veil serves as an effective signal of piety, particularly since a woman who chooses to wear the Islamic headscarf may incur a cost for her action (Chehabi 1993; Carvalho 2013; Patel 2012). Patel (2012) argues that personal religiosity is a trait only known by an individual and is, thus, not directly observed by onlookers. He finds that proper

Islamic dress allows women to convey information about themselves to others, and that more pious women adopt more conservative clothes and behaviors to differentiate themselves from less pious women. If veiling increases the perceived religiosity of survey enumerators, what is the cognitive impact of such a signal on respondent response?

Expressing socially desirable responses as a result of the perceived religiosity of a survey enumerator may be related to processes of strategic self-presentation of identities or impression management.² Theory and research on impression management suggest that people monitor the image that they provide of themselves to the audiences they address (Baumeister 1982; Bischooping and Schuman 1992; Leary and Kowalski 1990; Schlenker 1980). Such behavior is motivated, in part, by a desire to act in a manner consistent with social expectations, lest one face emotions of shame, embarrassment, or risk losing the power associated with adhering to such standards. Individuals will often modify or change their image so that it corresponds to social values, assuming the individual has a belief about what the audience values.

In the case of interviewer effects, the use of impression management is determined by the relation between the social identity of the respondent and that of the audience. Impression management involves both a cognitive and strategic factor. The cognitive factor refers to the aspect of social identity that is made cognitively salient to the respondent in the process of the interview. The strategic factor refers to the desire to express identity in a contextually appropriate fashion, and implies sensitivity to the identity of the audience and the audience's relative power or ability to impose social sanctions (Reicher, Spears, and Postmes 1995; Spears and Lea 1994).

The presence of a veiled enumerator arouses expectations related to the respondents' beliefs about religion, sentiments toward the religion of the enumerator, and what they know about interactions between those who hold the enumerator's religious identity and those who hold the respondent's religious identity. For example, a Muslim respondent will reference what she believes about Muslims and Islamic norms as well as what she associates with interpersonal interactions between Muslims. A Christian respondent will similarly reference her beliefs about Muslims and Muslim-Christian interactions in Egypt. This cognitive process then informs the strategic response provided by the interviewee to express her identity in a way deemed agreeable to the enumerator. If an individual has an aversion to being viewed as impious or antagonistic to the religion of the enumerator, she may opt to "edit" her response (Tourangeau, Rips and Rasinski 2000).

As a Muslim, being perceived as pious and less susceptible to secular influences can be considered socially desirable as it may elicit numerous social and economic benefits. Piety is an important attribute in Muslim societies, as it typically indicates good moral character, trustworthiness, and honesty, leading to a good reputation in social interactions. Reputation is critical as individuals and families frequently rely on informal networks to secure employment, improve desirability in the marriage market, obtain subsidized goods and services, and access informal savings and credit networks (Singerman 1995; Hoodfar 1997; Patel 2012). Similar to interviewer effects relating to race and gender, respondents may seek to minimize social distance between themselves and the veiled enumerator whom they perceive to be religious, and desire to appear to subscribe to culturally desirable norms.

For Christians, pressure to conform to dominant societal norms may be even more intense. Christians and Muslims in Egypt have been integrated for centuries; however, the relationship between the two religious groups has varied historically. Religious identity and ethnic consciousness have grown in salience in Muslim and Christian communities of Egypt since the 1970s (Sedraa 1999). Coptic Christians are believed to make up between 8 and 10% of the country's total population. Indeed, Egypt is home to the largest number of Orthodox Christians in the Middle East. During the second half of the 20th century, the Christian community's condition declined and many Christians faced religious violence with the resurgence of militant Islamic groups with violence peaking in the 1990s. According to Zeidanab (1999), Copts have increasingly suffered from persecution and discrimination because of the changing terms of "national identity" in Egypt; while Coptic Egyptians were core to the national project during the heyday of Arab nationalism, national identity in Egypt is increasingly conflated with Muslim identity. With the increasing Islamization of the Muslim community and concomitant decline in secularism, Muslims are increasingly likely to see Copts as "the other," and vice versa. Communal differences have been the source of tension (Makari 2007) particularly since associational life in Egypt tends to revolve around religion and religious community. In some cases, Christian students have been coerced to wear the Islamic headscarf; anti-Coptic books and pamphlets continue to be in widespread circulation (Ibrahim 1996).

The literature on interviewer effects would suggest that the enumerator's perceived religion and degree of religiosity may interact with the respondent's religion, thereby influencing the responses by Muslims and

Christians in different ways. As a result, we expect the signal of the veil to trigger a desire to self-present as more pious, on average, for Muslim respondents out of a desire to affirm their membership in the dominant group and establish a common degree of religiosity with the enumerator. Conversely, we expect Christian respondents to deemphasize their religious identity to avoid appearing antagonistic to the dominant group to which the enumerator appears to belong. This expectation is consistent with research finding that people at times opt to dissociate themselves from socially disadvantaged groups (Ellemers, Spears and Doosje 1999). Christians, therefore, may respond to items related to religiosity by expressing lower levels of piety, or less adherence to Christianity, when interviewed by a veiled woman in order to minimize social distance.

Beyond simple expressions of religiosity however, there is reason to expect the enumerator's perceived religion may impact socio-cultural responses as well. With approximately 90% of Egyptians identifying as Muslims, Islamic cultural norms have a large impact on Muslims and the Christian minority alike. We should expect Muslims to express stronger adherence to cultural norms associated with Islam when interviewed by a veiled enumerator in an effort to align with desirable Islamic social standards. Despite being of a different religion, Christians, too, may be more likely to express greater observance to Islamic cultural norms due to their deferential social status in Egypt and — perhaps unconscious — desire to adhere to the local society's practices, which happen to be Islamic. This study explores the effect of an explicitly Muslim female enumerator in the Egyptian societal conditions on responses given by Muslim and Christian women.

This study relates to existing work on the impact of gender and dress on attitudes in the Islamic world. Benstead (2010) shows that both male and female respondents in Morocco reported less progressive attitudes toward women's participation in politics to female interviewers wearing the *hijab*, but more progressive attitudes towards equality in personal status laws to female interviewers, regardless of dress. Our study is distinct from Benstead (2010) in a number of ways. Benstead (2010) focuses primarily on attitudes toward gender equality although she also finds an effect of female interviewers wearing the *hijab* on reported religiosity and support for democracy; this article addresses issues related to levels of religious conviction and adherence to Islamic cultural norms. The number of interviews conducted by female interviewers wearing a *hijab* in Benstead (2010) was relatively small ($N = 65$) and was assessed as only a partially successful randomization of housing listings in a nationally-representative

survey of political attitudes; the data analyzed in this article represent a much larger number of interviews completed by veiled interviewers ($N = 582$ veiled, i.e., treatment; $N = 586$ unveiled, i.e., control) and we assess our effort at random assignment achieved successful balance on the dimensions of age, religion, education and socioeconomic status across treatment and control groups. Finally, Benstead (2010) also deals with the impact of interviewer gender and the *hijab* on question response and item-missing data for respondents of both genders, while this article narrows in on the impact of Islamic dress on a sample of women from two ethno-religious groups.

METHODS AND RESULTS

The survey used in this article was conducted by a Cairo-based polling firm in two neighborhoods of Greater Cairo.³ 1,200 married women aged 18–64 years old were selected to participate in a face-to-face survey administered in August 2009 where not more than one woman per household was interviewed. Quota sampling was used within households. Households were selected through the following process. Each neighborhood was divided into 20, proportionally-populated segments. Thirty households were targeted in each segment with the goal of achieving 1,200 total respondents. A random walk method was used for household selection. Ninety-seven percent of surveys were completed out of 1,200 sought (1,168 out of 1,200).⁴ The survey, which included a variety of other questions, took about 60 minutes to complete.

The two neighborhoods surveyed — Bulaq al-Dakrur and Imbaba — are known to be low-income areas with wealth and educational background levels close to the modal Egyptian than the average Cairene. For example, the educational level in our sample is similar to the educational level reported in the 2008 Egyptian Demographic and Health Survey (EDHS); 30% of our respondents never attended school, compared with 32% in the nationally representative EDHS sample. Fifty-seven percent of our respondents completed at least a secondary education, compared with 45% of the national EDHS's respondents, making our sample slightly more educated than a nationally representative sample. Seventy-six percent of the women in our sample have satellite television in their homes; recent studies have suggested that about 70% of Egyptians have home access to satellite TV.⁵ The two neighborhoods are also home to

recent migrants from rural areas, suggesting that the women interviewed come from both rural and urban backgrounds.

SURVEY QUESTIONS

This article seeks to analyze the effect of having an enumerator who wears a *hijab* — or simple Islamic headscarf — on responses to questions related to religiosity and religion-related cultural norms. To operationalize these concepts, this study analyzes responses to three items that are argued by various scholars to capture piety and adherence to perceived Islamic cultural norms in Egypt.⁶

The first item is straightforward in measuring the degree to which respondents indicate that they incorporate their religion into their personal, everyday lives. During the length of the survey, respondents were asked the following question:

How observant are you of your religion — are you highly observant, somewhat observant, not very observant or not observant at all? (*yā tarā intī ‘alā adā’ sha‘ā’ir dīnik — muḥāfiẓa jiddan, muḥāfiẓa ilā ḥadd mā, ghair muḥāfiẓa, ghair muḥāfiẓa ‘alā al-itlāq?*)

To this question, Muslims indicated how observant they were of Islam and Christians on how observant they were of Christianity.

The second item seeks to measure adherence to a cultural norm that is associated with Islam in Egyptian society, female genital mutilation, also known as female circumcision. Practiced by both Muslim and Christians, circumcision involves the partial or complete removal of the external female genitalia, and is typically performed on girls between the ages of eight and 14, before a girl reaches puberty (Assad 1980).

Although most scholars consider circumcision in Egypt to be a social custom rather than a religious one, the practice is increasingly thought of as part of an Islamic tradition.⁷ Heba El-Kholy (2002), in her anthropologic study of low-income women in Cairo, notes that female circumcision is thought to be legitimized by various religious precedents and that many Muslim women believe it is a good tradition required by their religion. Indeed, religious Muslims have become the most vocal advocates of female circumcision (Moore et al. 1997; Allam et al. 2001; Boyle, Songora, and Foss 2001; Yount 2004), even in the face of government efforts to criminalize the practice.⁸ At the same time, Christians are becoming increasingly less likely to circumcise their daughters (Yount

2004). In a sample of married women in Minya governorate, Christian women are having fewer daughters circumcised, less extensive forms of cutting are used and the practice is seen as less beneficial than among their Muslim neighbors.⁹

Although more common among low-income woman than in the upper classes, circumcision is said to be significant in Egyptian society as it relates to protecting female modesty and chastity, traits highly valued in Islam, which may improve a young woman's reputation and marriage prospects (Assad 1980; Singerman 1995). Indeed, one of the four Sunni schools of religious law — the Shafi'i school — considers the trimming of the clitoral hood mandatory (Antes 1990).¹⁰ Since circumcision is nearly universal among women of reproductive age in Egypt (El-Zanaty and Way 2006), we operationalize adherence to this religiously-related cultural practice by asking each respondent the following question about her daughters:

(Record the name of each daughter) Is she circumcised? (*yā tarā (al-ism) itakhatmat (itaharat?)*)

Finally, we utilize a third item intended to measure what some perceive as an Islamic cultural norm related to a Muslim woman's role in her marriage. Within the Koran, there exist verses (*ayah*) that are interpreted by some Muslim scholars as suggesting that in an Islamic marital contract, a woman has a religious duty to provide sexual satisfaction to her husband. Barlas (2002, 161) writes, "from these *ayah* many Muslims infer that a wife is her husband's sexual property and that he has the right to have sex with her as and when he pleases (without her consent)." Mernissi (1987) further suggests that female disobedience and the refusal to obey a husband's request, particularly for sex, is interpreted by many Muslim clerics as a serious offense. Refusing sex is thought by many to be a religious sin, which often results in wife-beating (El-Kholy 2002). For example, a 2004 poll by the Egyptian National Population Center found that 70% of married women believed that a husband was justified in beating his wife for her refusal to have sex.¹¹ While this study does not assess the extent to which this belief is held among women in the sample, we believe that a reluctance to report episodes of forced sex to an interviewer offers another window into the effect of having a veiled versus unveiled enumerator on a respondent's answers to survey questions. In other words, a woman concerned about being perceived as pious (as a result of being assigned a veiled interviewer) may be less inclined to report forced sex. Considering this

framework, item three measures a woman's desire to appear to adhere to a cultural expectation of providing sexual satisfaction to her husband.

Did your (last) husband physically force you to have sexual intercourse with him when you did not want to — often, only sometimes, or not at all? (hal marra goozik ajbarik bil qūwa 'alā mu'āsharatihu jinsīyan wa intī rāfīda — biy'amilha dā'iman, biy'amilha ahyānan, mabiy'amlhāsh khāliṣ?)

Together these three items aim to capture diverse aspects of perceived piety and adherence to religion-related cultural norms among respondents. We have different expectations regarding how Christians and Muslims will respond to being assigned a veiled survey enumerator. We expect that assignment to the “treatment” category (i.e., assignment of a veiled interviewer) will lead Muslim women to say that they are more religiously adherent, circumcising a larger percentage of their daughters, and subject to fewer incidents of forced marital sex. We also expect that being interviewed by a veiled enumerator will lead Christian women to say that they are less religiously adherent and circumcising a larger percentage of their daughters. For Christian respondents, the impact of veiling on willingness to admit to being forced to have sex within the marriage is more ambiguous since there is no expectation Christians would adhere to a religious practice justified by clerics on Koranic grounds. Yet if we believe that Christian women are more likely to offer survey responses in line with what may be perceived as majority-held (i.e., Muslim) cultural values, we should expect fewer reports of forced sex even among Christian women who are assigned a veiled enumerator.

COMPARABILITY OF TREATMENT AND CONTROL

This study was designed for respondents to be randomly assigned either a veiled or unveiled enumerator to conduct the face-to-face survey. In most cases, enumerators would alternate either between wearing a head scarf between interviews or sets of interviews. Four out of 16 survey enumerators preferred to remain veiled or unveiled for all of their interviews, however. These four enumerators were responsible for interviewing about 30% of the respondents.¹² Since enumerators were randomly assigned to housing blocs, we do not anticipate significant bias as a result of enumerator non-compliance.

This assessment is supported by examination of the success of randomization over interviewer dress. Randomization successfully balances

on the dimensions of age, whether or not the respondent attended school, and socioeconomic status, proxied by whether or not the respondent has satellite television. Notably, whether or not an enumerator was veiled or not appears to have had no effect on her ability to recruit Christian and Muslim respondents as the treatment and control groups were balanced on the distribution of religious denomination. The balance across treatment and control is particularly important over religious identification since it would be problematic if veiled enumerators were unable to solicit Christian respondents (or unveiled enumerators were not able to solicit Muslim respondents). This does not appear to be the case. In addition, there is no indication that veiled and unveiled enumerators were differentially attracting more religious versus less religious respondents. Previous research suggests that education and income are robust predictors of individual-level women's religiosity in Egypt and elsewhere in the Islamic world (Blaydes and Linzer 2008); *t*-statistics for the mean differences confirm that the mean differences of all covariates between the treated and control-group units — including on education and income proxies — are not statistically significant.

RESULTS

To test the effect of being interviewed by a veiled enumerator, we regress treatment (i.e., having a veiled enumerator) on the three indicators of religiosity described above for both Muslim and Christian sub-samples.¹³ Christian women represented about 5% of the overall sample. For the survey questions related to religious adherence and whether or not a woman was subjected to forced sex in marriage, we use an ordered logit model to derive a series of predicted probabilities. For the percentage of a woman's daughters who have been subjected to female circumcision, we use an ordinary least squares model to derive predicted probabilities. The results we present in [Figure 1](#) are robust to the inclusion of the three variables we use in the balance tests — age, whether or not the respondent attended school and whether or not the respondent has satellite television — as covariates in the regression specifications.

Our first dependent variable examines the impact of having a veiled survey enumerator on whether a woman reports being highly observant, somewhat observant, not very observant or not observant at all of her religion. A first observation is that only a small percentage of women in the sample (of either religion) reported being not very observant or not

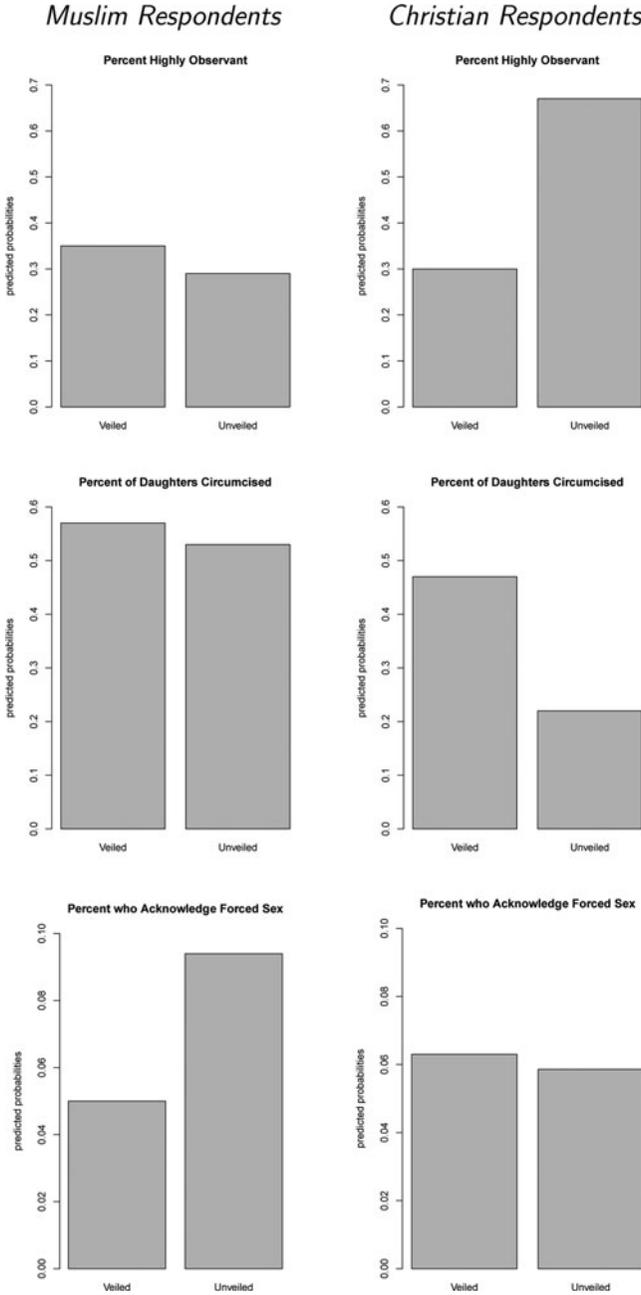


FIGURE 1. Predicted probabilities for Muslim (left) and Christian (right) women for three measures of personal religiosity with veiled and unveiled survey enumerators.

observant at all. For Muslim women, having a veiled enumerator leads to a 6% increase in the probability of reporting being highly religiously observant. When asked about their religious observance, Christians show an even larger interviewer effect than Muslims, presenting themselves as significantly less pious with a veiled enumerator than an unveiled enumerator. While only 30% of Christian women report that they are highly observant with a veiled enumerator, over 67% report being highly observant with an unveiled survey enumerator. The larger impact of a veiled enumerator in Christian, versus Muslim, women may be due to the fact that Christians are under even greater pressure than Muslims to engage in forms of strategic self-presentation as a result of their minority status (Ellemers, Spears, and Doosje 1999). In both the Muslim and Christian samples, the difference observed between the treatment and control groups is statistically significant at conventional levels.

Our second variable considers how women react to a question regarding the percentage of their daughters who have been subjected to female genital mutilation, or female circumcision. For Muslim women, having a veiled enumerator is positively associated with the percentage of daughters one reports as being circumcised but this result is not statistically significant at conventional levels. Among Christians, having a veiled enumerator led women to report more than double the percentage of their daughters as being circumcised (47% vs. 22% with an unveiled survey enumerator). The difference observed between the treatment and control groups is statistically significant at conventional levels for the Christian subsample.

A third question investigates whether women are more or less likely to report that they had been forced to have sex against their wishes with their husbands. For Muslim women, having a veiled enumerator led women to report forced sex less frequently. If this variable is collapsed into two categories — women who acknowledge that they have been forced to have sex in marriage and those who have not — 5.9% of women with veiled enumerators acknowledge forced sex in marriage versus 9.4% of women with unveiled enumerators. For Christian women, having a veiled enumerator is negatively associated with reports of forced sex in marriage but this coefficient is not statistically significant at conventional levels. There are a couple of reasons why this effect does not emerge as statistically significant. One possibility is that cultural norms about the permissibility of forced sex in marriage are not shared by members of the Christian community. The second possible reason is related to statistical power. With a relatively small number of Christian respondents (approx. 50) and

relatively low average rates of forced sex (approximately 7.5% of the sample), it is not surprising that conventional levels of statistical significance were not met.¹⁴

Further analysis suggests that interviewer dress has differential effects across various sub-groups within the broader population (see [Table 1](#)). Given the relatively small size of our Christian sample, we conduct this analysis for the Muslim population only. Younger Muslim women (defined as below the age of 30) as well as those who have never been to school and have no satellite dish saw approximately a doubling of the effect of treatment for the dependent variable of self-reported religious adherence. Indeed, while having a veiled enumerator has a negative effect on the probability of reporting being highly religiously observant for women who own a satellite dish, among women who do not own a dish, a veiled enumerator leads a woman to report being highly observant at a ten percent higher rate.

Some similar patterns emerge in analysis of the response to the question about the number of one's daughters subject to circumcision. While in the previous analysis there was no statistically significant relationship between enumerator dress and the percent of daughters Muslim women reported as circumcised, this coefficient emerges as positive and statistically significant at conventional levels for women under 30, suggesting that younger women may be more likely to change their response based on their beliefs about the person conducting the interview. Similarly, while there is almost no effect of treatment for women who own a satellite dish, among women who do not own a satellite dish, women who received a veiled survey enumerator are much more likely to report that their daughters are circumcised. The results comparing women who had received some schooling versus those who had not are somewhat less clear. The treatment effect was more pronounced for women who had received some schooling than for women who had not.

When questioned about whether or not she had been forced to have sex with her husband against her will, Muslim women under the age of 30 were more likely to be influenced by having a veiled versus unveiled survey enumerator than women over 30. The treatment effect was also larger for women who had never attended school compared to those who had some schooling. Finally, Muslim women who did not have a satellite dish saw a much larger treatment effect compared to those who did have a satellite dish in their homes. This suggests that — to a large extent — the enumerator effects presented in [Figure 1](#) are being driven by younger women, women with lower socioeconomic status and women who had fewer educational opportunities.

Table 1. Effect of a veiled or unveiled survey enumerator on three measures of personal religiosity for different demographic groups within the Muslim sample. “Difference” refers to the difference in the predicted probability for respondents assigned a veiled or unveiled enumerator

For Muslim women who...	Veiled Enumerator	Unveiled Enumerator	Difference
Predicted probability of being “highly observant”			
Are over 30	35.7%	31.5%	4.2%
Are under 30	29.2%	18.9%	10.3%
Have some schooling	35.1%	30.7%	4.4%
Have no schooling	33.8%	25.0%	8.8%
Own a satellite dish	29.7%	34.4%	-4.7%
Do not own dish	35.2%	25.5%	9.7%
Predicted probability of daughters circumcised			
Are over 30	66.0%	66.5%	-0.5%
Are under 30	3.8%	0.1%	3.7%
Have some schooling	47.0%	40.2%	6.8%
Have no schooling	75.0%	79.5%	-4.5%
Own a satellite dish	54.8%	53.6%	1.2%
Do not own dish	63.3%	54.0%	9.3%
Predicted probability of acknowledging forced sex			
Are over 30	5.8%	7.4%	-1.6%
Are under 30	7.1%	16.6%	-9.5%
Have some schooling	6.8%	9.2%	-2.4%
Have no schooling	4.5%	10.2%	-5.7%
Own a satellite dish	5.6%	8.3%	-2.7%
Do not own dish	7.5%	13.9%	-6.4%

These heterogeneous results are consistent with past studies that also show that respondents who are younger, less educated, and from lower socioeconomic classes are more susceptible to interviewer effects (Schuman and Converse 1971; Campbell 1981; Huddy et al. 1997), although the evidence in this literature is not entirely consistent (Campbell 1981; Hatchett and Schuman 1975). In accordance with an impression management explanation, older respondents should be less concerned with impressing interviewers compared to younger respondents who may be seeking the approval of their peers and elders. Similarly, as differential social status and power is believed to impact responses (Davis 1997a; Kane and Macaulay 1993; Reese et al 1986; Webster 1996), more pronounced interviewer effects among respondents with less education and lower socioeconomic standing can be interpreted as an attempt to agree with the presumed views of their better educated or higher status interviewer.

DISCUSSION AND CONCLUSIONS

This study examines the impact of enumerator dress on three measures of personal religiosity and adherence to religiously-related cultural norms in a sample of women in Greater Cairo.¹⁵ Face-to-face survey respondents were assigned either a veiled or unveiled enumerator; we believe that the Islamic headscarf serves as a form of non-verbal communication where respondents interviewed by a veiled enumerator develop certain beliefs about the personal piety of the enumerator. We argue that these beliefs trigger schemas related to the respondents' sentiments toward the religion of the enumerator as well as knowledge about interactions between those who hold the enumerator's religious identity and those who hold the respondent's religious identity. Christian women interviewed by a veiled enumerator presented themselves as less religious and more adherent to Islamic cultural norms than their otherwise comparable counterparts who were interviewed by unveiled enumerators; Muslim women who were interviewed by a veiled enumerator reported themselves to be more adherent to their religion and religion-related cultural norms than their otherwise comparable counterparts interviewed by an unveiled enumerator. Younger, lower status women — consciously or unconsciously — were more likely to provide socially desirable responses as a result of being assigned a veiled interviewer.

These results have important implications for our understanding of the attitudes of both Christians and Muslims in Muslim-majority societies as

well as the way those attitudes may change over time. In the social science literature on race in the United States, researchers have identified the important impact of interviewer characteristics on long-term research efforts to understand attitudes toward ethnicity. Anderson, Silver and Abramson (1988) find that longitudinal trends in black racial attitudes in NES surveys were actually artifacts of the changing composition of the interviewer staff. A declining proportion of blacks were interviewed by blacks and respondent attitudes appear overall to become less close to black attitudes between 1976 and 1984. As trends for Muslim women to wear the Islamic headscarf grows in both Muslim-majority countries and the West, longitudinal studies of Muslim attitude may falsely indicate an increasing degree of Muslim religiosity worldwide. Large survey efforts in the Islamic world, including the World Values Survey and the Pew Global Attitudes Project, should consider how interviewer effects, and changes to enumerator dress over time, may influence responses to questions not only regarding religiosity, but also responses to questions which relate to political outcomes like support for democracy or support for Islamic fundamentalism (Blaydes and Linzer 2008; Jamal and Tessler 2008).

NOTES

1. Consider, for example, a scenario where female interviewers veil in areas perceived as more religious and remain unveiled to conduct interviews in more secular parts of a country in order to “fit in” to the local cultural context. The results of this study would suggest that such a scenario would exaggerate the degree of polarization in a country with regard to the level of religious observance.

2. See Davis 1997a and 1997b for more on this literature.

3. El Zanaty and Way (2006) administers the Egyptian Demographic and Health Survey, a project funded by the United States Agency for International Development . All enumerators are professionally trained with previous experience in face-to-face interviews and field work, and are supervised by the El Zanaty and Associates field staff.

4. The response rate is calculated by dividing the number of successfully completed interviews by the number of eligible respondents. An eligible respondent is defined as an ever-married woman age 18–64 who was present in the household on the night before the interview. The response rate for this survey is similar to the rate achieved by the firm for the Egyptian Demographic and Health Survey.

5. See Jon Alterman, “Learning the Wrong Lessons From Egypt,” *Real Clear World*, February 9 2011 and Joel Campagna, “Pre-empting the Satellite TV Revolution,” *Committee to Protect Journalists*.

6. These three items are in no way a direct judgment by the authors as to what proscribes adherence to Islam.

7. Sunni Islamic scholars vary in their views on the practice of female circumcision (von der Osten-Sacken and Uwer 2007). For example, scholars of Egypt’s Al-Azhar — a seat of Islamic theological learning — endorsed the practice in 1949, 1951 and 1981 but later put forward a religious edict banning the practice (Abu-Sahlieh 1994). The Egyptian Minister of Health announced a ban on female circumcision in 1996. This ban was then challenged in Egyptian courts by a conservative Islamic scholar. Other representatives of Al-Azhar have argued that the practice is permissible and, therefore, cannot be banned (von der Osten-Sacken and Uwer 2007).

8. Parliamentarians associated with the Muslim Brotherhood, for example, strongly objected to the criminalization of the practice during discussions in the Egyptian parliament.

9. In this sample, Christians report 34% of their daughters have been subject to the practice while the percent for Muslims is about 55%.

10. The Shafi'i school is one of three currently subscribed to in Egypt.

11. Al Ahram Weekly, November 1–7 2007. See Yount (2005) for more on physical abuse and tolerance for abuse among Christians and Muslims in Minya governorate.

12. Reanalyzing the statistical effect of veiling on response for just those observations where enumerators alternated form of dress (70% of the observations) leads to a slight attenuation of coefficient size and statistical significance. Substantive conclusions of the analysis are not altered, however, using the smaller sample of enumerators who alternated dress.

13. We report predicted probability values associated with regression analysis throughout to accommodate robustness checks like inclusion of socio-economic covariates and standard errors clustered by interviewer.

14. All of these regressions were also repeated with standard errors clustered for interviewer (there were 16 separate interviewers who conducted between 42 and 160 surveys each). In all but one specification, coefficient size and statistical significance were similar to baseline analysis. In the analysis of the effect of a veiled enumerator on self-stated religiosity for the Muslim population, clustering on enumerator leads to a comparable coefficient value with attenuation of statistical significance.

15. One area of future research would be to replicate this study for a representative sample of all Egyptians as well as to consider the impact in other, Muslim-majority contexts.

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