Using a White Lab Coat to Enhance the Response Rate to Personally Initiated, Self-Administered Surveys

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This paper describes how a white lab coat can be used to enhance the status of a survey taker. Following this discussion, three experiments are described in which survey takers alternated either wearing or not wearing a white lab coat during a personally initiated, self-administered survey. Each experiment was conducted on a different population. The experimental results revealed that while the white lab coat was ineffective at increasing the survey response rate from high school students, it was successful in dramatically boosting the survey response rate from university students and hospital patrons. Explanations are offered as to why the results differed among the various populations.

INTRODUCTION

Self-administered surveys require that respondents fill out a questionnaire by themselves using either a writing instrument or a computer keyboard. Although these types of surveys can be initiated by mail or through the Internet, they are often conducted by a survey taker who attempts to poll passersby. The extent to which these personally initiated surveys are successful undoubtedly depends on a number of factors, e.g., attractiveness and personality of the survey administrator, salience of the survey topic, mood and availability of the potential respondent, and the culture of the survey

environment, i.e., “pro-survey” vs. “anti-survey.”

Using Status Cues to Increase Compliance

Previous research reveals that persons having status or authority are more likely to have their requests fulfilled than those lacking these qualities (Bickman, 1974; Milgram, 1974; Bushman, 1984). Other research has shown that subtle status cues can increase the odds that persons in need of help will receive aid. Goodman and Gareis (1993), for example, found that persons dialing a wrong number were more likely to receive the requested assistance if they stated they had an occupation of high status (e.g., lawyer) than one of low status (e.g., gas station attendant). Similarly, Pandey (1979) found that persons identifying themselves as faculty members (high status) were more likely than those identifying themselves as graduate students (low status) to get donations for flood victims. Finally, Solomon and Herman (1977) varied the type of car (high status vs. low status) driven by a female confederate. When she dropped groceries near the trunk of her car, she was more likely to receive help when the car was of high status.

The previously cited experiments lead one to wonder how varying the status cues of a survey taker might affect survey response. Groves, Cialdini and Couper (1992) suggest that potential respondents should be more responsive to survey requests if the legitimacy of the survey taker can be established. Therefore, one would assume that any cue that enhances the status or authority of a survey taker should increase the odds that the survey will be completed. Previous studies that have varied status cues of the survey taker have, for the most part, found that cues suggesting high status have resulted in higher response rates. Roeher (1963), for example, while conducting a mail survey about services for the handicapped, varied the usage of a high status title under the researcher’s name on the cover letter. He achieved an 81% response rate when “Director of Rehabilitation” appeared under the researcher’s name as compared to a 55% response rate when only the researcher’s name was used. In a similar fashion, Brennan (1990), while conducting a mail survey, found that identifying the researcher as a “Research Officer” yielded higher response rates than when the researcher was revealed to be an “Honours Student.” Although the differences in response rates were not statistically significant, Brennan concluded that status of the researcher may have affected the results. In two other experiments, Guegen and Jacob (2002) varied the status of the person conducting an email survey by altering the title of the person signing off on the email request. Both experiments revealed that a “professor of statistics” (high status) achieved significantly higher response rates than an “undergraduate student in statistics” (mid-status).

Altering the Status of a Person Conducting a Self-Administered Survey

Many of the previously cited studies altered a person’s status by changing a job title. However, for a personally initiated, self-administered survey, it might be awkward for a survey taker to announce his or her title before making a survey request. Moreover, there could be ethical concerns if the job title is bogus. Consequently, another means for altering the survey taker’s status was sought. To alter the status of a survey taker, the most visible and effective strategy might be to change the way the survey taker is dressed. Clothing often serves as an indicator of a person’s status in society (Sissons, 1970; Conner, Peters, and Nagasawa, 1975). Previous research has demonstrated that when well dressed individuals are compared to poorly dressed ones, the well dressed are

perceived in a more positive light and are given more respect. Kwon and Johnson-Hillery (1998), for example, found that formally dressed individuals, as depicted in photographs, were rated by students as being more "powerful" than those who were dressed either semi-formally or informally. In a simulated personnel experiment, Bardack and McAndrew (1985) showed students photographs of people who were either "appropriately" or "inappropriately" dressed for a job interview and they found that students were more likely to recommend hiring the individual who wore "appropriate" attire. In another experiment, Fortenberry, MacLean, Morris, and O'Connell (1978) altered the dress (formal vs. casual) of two conversationalists in a building hallway. They found that when the conversationalists were formally dressed, they were more likely to receive positive deferential behaviors from those walking past them.

While not all experiments have found that the better dressed are more likely to have requests for help fulfilled (e.g., McElroy and Morrow, 1994), most have found a positive relationship between the two variables. Kleinke (1977) altered the dressing style (neat vs. sloppy) of female confederates in an airport experiment. He found the females were more likely to get a dime loaned to them when they were dressed neatly. In a similar experiment, Feinman (1978) found that neatly dressed strangers were more likely than sloppily dressed ones to be admitted to a person's home to make a telephone call. In another experiment, Bickman (1971) found that a "lost dime" in a telephone booth was more likely to be returned if the person requesting the "lost dime" was dressed as a white-collar worker rather than as a blue-collar worker.

Experimenters who have examined how the dressing style of a survey taker affects the response rate to a survey have obtained mixed results. Lambert (1972) found that the interviewer's style of dress (smartly vs. untidily) had no effect on the response rate to a brief survey on advertising. Similarly, Harris et al. (1983) experimented with several formal and casual styles of women's clothing, and found that dress style of the female survey taker had no effect on the response rate to a short, self-administered survey. In contrast, two other studies that varied the dress of the interviewer (well dressed vs. poorly dressed) found that interviewers were more likely to get a completed survey when they were well dressed (Judd, Bull, and Gahagan, 1975; Walker, Harriman, and Costello, 1980).

The previous studies that have varied the clothing style of a survey taker have focused primarily on two clothing variations: formal dress vs. casual dress; and smartly dressed vs. untidily dressed. Given the lack of consistency in response rate effects among these survey experiments, we decided to investigate a clothing style for a survey taker that we felt has more promise for success, namely, the white lab coat.

Most of the previous studies that have reported on people's perceptions of the white lab coat have been conducted in a medical context, i.e., patients judging the appropriateness of a doctor's attire (e.g., Gjerdingen, Simpson, and Titus, 1987). Brase and Richmond (2004) conducted a perception study in which they photographed male and female models posing as doctors in three forms of attire: a white coat, a formal outfit, or casual attire. They asked undergraduate students to rate those depicted in the photos on a variety of dimensions, which they later reduced to three factors: authority, friendliness, and attractiveness. Of the three dress types, the white coat treatment consistently received the highest scores on the authority factor and, for the most part, the highest scores on the attractive factor. The formal dress treatment received the highest scores on the

friendliness factor, while the casual attire treatment received the lowest scores on all three factors. This study leads us to believe that a survey taker wearing a white lab coat should appear more authoritative and attractive to potential respondents than a survey taker wearing casual attire. Moreover, the white coat should be more visible and capable of getting the respondent's attention than casual attire. For these reasons, we expect that a survey taker will achieve a higher response rate to a self-administered survey while wearing a white lab coat than while wearing casual attire.

METHODOLOGY

Three experiments were conducted in which survey takers alternated either wearing or not wearing a white lab coat while conducting a personally initiated, self-administered survey. Table 1 summarizes the survey characteristics of each experiment.

Table 1
SURVEY CHARACTERISTICS

Experiment	Population	Respondent avg. age	Topic	Location
1	High school students	17	Study drugs	School exit area
2	University students	23	Study drugs	Outside food court
3	Hospital patrons	36	Flu shots	Outside hospital entrance

In the first experiment, two female college-aged survey takers attempted to administer a self-administered survey on the use of study drugs (i.e., drugs that can enhance a student's focus while studying) to high school students as they exited a private high school in Santa Monica, California. The survey takers positioned themselves near the high school exit at the time when the last class ended. During the period of the survey, an attempt was made to interview every third student who exited the high school. Both of the interviewers wore black pants and a white shirt. Their first ten interview attempts were conducted while they wore a white lab coat. Their second ten interview attempts were conducted while not wearing the white lab coat. They continued this process of either wearing or not wearing the white lab coat every ten survey attempts until 100 survey attempts had been made.

The experimental procedures used in the first experiment were replicated in a second experiment at the University of California at Los Angeles. As the two female survey takers alternated between either wearing or not wearing a white lab coat, they asked 100 university students who they found outside of a food court area to complete a survey on study drugs. Both the first and second experiments were conducted on the same day.

In the third experiment, two college-aged survey takers - one male and one female - stood outside the entrance of a large hospital in Woodland Hills, California. As patrons

either entered or exited the hospital, the survey takers asked them to complete a self-administered survey on their knowledge and use of flu shots. On a Wednesday, the survey takers made 150 survey attempts while wearing a white lab coat. On the following Thursday, the survey takers made 150 additional survey attempts while wearing only casual attire, e.g., jeans and a sweater.

RESULTS

For each of the experiments, the treatment and control groups were compared on response rate, average number of item omissions, and response bias. The response rate was calculated by dividing the number of usable returns by the number of survey attempts. The average number of item omissions was determined by first identifying those questions on the survey that every respondent should have answered. From this pool of questions, it was then determined for each respondent the number of questions that were left unanswered. The average number of questions left unanswered was then calculated for both the treatment and control groups. Finally, response bias was determined by comparing the treatment and control groups on their answers to one key survey question and to all of the demographic questions. The response rate and item omission analyses for the three experiments are displayed in Tables 2, 3, and 4, respectively.

The first experiment was conducted among high school students. With this group, the white lab coat did not affect either the survey's response rate or the average number of item omissions. Both groups of respondents were compared on their answers to one key survey question and to four demographic questions (sex, race, class level, and income). The response bias analysis revealed that the treatment and control group respondents differed on their sex: 78% of those responding to the survey takers in the white lab coat were male, whereas 86% of those responding to the survey takers without the white lab coat were female ($p < .05$[1]).

Table 2
EXPERIMENT 1: RESULTS WITH HIGH SCHOOL STUDENTS

	Control group (n = 50)	Treatment group (n = 50)	Test statistic
Response rate	14%	18%	$X^2(1) = .07$[1]
Avg. no. of item omissions[2]	.14	.67	$t(14) = 1.44$

[1]Yates' correction for continuity was used when calculating the X^2 value (Parsons, 1974).
[2] Analysis is based on eight questions that all respondents were asked to answer.

The second experiment, conducted among university students, found that survey

[1] Calculated with Fisher's Exact Test.

takers obtained a dramatically higher response rate when wearing a white lab coat than when not wearing it (86% vs. 38%, $p < .001$). No differences were found between the treatment and control groups on the average number of item omissions or response bias.

The third experiment, conducted among hospital patrons, revealed results similar to those of the second experiment. Survey takers almost doubled the response rate to the survey when wearing a white lab coat than when not wearing it (30% vs. 17%, $p < .001$). Moreover, there were no differences between the treatment and control groups on the average number of item omissions or response bias.

Table 3
EXPERIMENT 2: RESULTS WITH UNIVERSITY STUDENTS

	Control group (n = 50)	Treatment group (n = 50)	Test statistic
Response rate	38%	86%	$X^2(1) = 22.5$[1]*
Avg. no. of item omissions[2]	.32	.30	$t(60) = -.07$

[1]Yates' correction for continuity was used when calculating the X^2 value (Parsons, 1974).
[2] Analysis is based on eight questions that all respondents were asked to answer.
*$p < .001$

Table 4
EXPERIMENT 3: RESULTS WITH HOSPITAL PATRONS

	Control group (n = 150)	Treatment group (n = 150)	Test statistic
Response rate	17%	30%	$X^2(1) = 6.0$[1]*
Avg. no. of item omissions[2]	.04	.02	$t(69) = -.39$

[1]Yates' correction for continuity was used when calculating the X^2 value (Parsons, 1974).
[2] Analysis is based on 34 questions that all respondents were asked to answer.
*$p < .02$

DISCUSSION AND CONCLUSIONS

The effect of the white lab coat on survey response was tested on three populations - high school students, university students, and hospital patrons. While the white lab coat increased the response rate to the survey among university students and hospital patrons, it had no effect on the response rate with high school students. One must wonder why the white lab coat failed to affect the response rate from high school students. High school students are, of course, younger than the other two populations. Because of their young

age, they may not have developed as much respect for authority as the other older populations. The high school students may be in a rebellious stage of their life, making them unwilling to acquiesce to a request from an authority figure. If the population being approached by the survey taker has little respect for authority, enhancing the authority or status of the survey taker should not be productive. Another factor that may have diminished the response rate among the high school students is the environment in which the survey was conducted. The high school students were just getting out of class as the survey takers attempted to poll them. As students exited the high school, they no doubt had a desire to get away from the constraints of school and to be free. In this state of mind, they were probably not very receptive to the request of a survey taker. So while the white coat can increase the response rate to some surveys, it can not be expected to induce a survey response from a resistant population in a poor survey environment.

It is curious that when the white lab coat was used to survey high school students that it attracted responses primarily from male students. Why would male students be more attracted to a white lab coat wearing interviewer than females? Was it because the survey takers were females? Did the white lab coats make the female survey takers more attractive to the males? Questions such as these could possibly be answered with follow-up surveys of those who were asked to participate in the survey.

The treatment and control conditions were alternated every ten survey attempts during the first two experiments. This procedure no doubt helped to reduce any selection bias these experiments might have experienced. The third experiment, however, exposed hospital patrons to the white lab coat treatment on the first day of the experiment. On the second day of the survey, the white lab coat was not used. Since the third experiment did not alter the treatment and control conditions systematically throughout the interviewing process, it was vulnerable to experimental biases. For example, one might argue that the potential respondents on the first day of interviewing were more receptive to surveys than those on the second day. One might also argue that the survey takers were more tired and less enthusiastic on the second day, thereby causing them to be less successful in their interview attempts on that day. However, one could counter- argue that the survey takers were more experienced at interviewing on the second day. The “experience effect” could have caused them to perform better on the second day of interviewing when the white lab coat was not used. To avoid alternative explanations of the results such as these, future researchers should be careful to systematically vary the treatment and control conditions throughout the interviewing process.

All three experiments in this paper dealt with questionnaires that covered medical topics i.e., study drugs and flu shots. There may be an interaction effect between the survey taker’s use of a white lab coat and the nature of the survey topic. Future researchers should investigate whether the white lab coat can increase the survey response rate when the survey is on a topic that is not medically related.

It is assumed that the white lab coat was effective in the second two experiments primarily because of its ability to increase the status and authority of the survey taker. It is possible, however, that the greater response to the white lab coat treatment had nothing to do with its status enhancing properties. It could be that a person wearing a white lab coat attracts attention because of the novelty factor. People may not be used to seeing persons dressed in a white lab coat in a public arena, and the pure novelty of the event may spark their curiosity enough to draw them into the interview. Future researchers may

find it useful to conduct depth or focus group interviews with potential respondents to determine their impressions of a survey taker wearing a white lab coat. These types of interviews might reveal the extent to which the white lab coat draws the potential respondent's attention, enhances the status of the survey taker, or appeals to people who have a respect for authority.

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