

The effects of status on yawning behavior

Teri-Ann Caswell

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Description : 24, [12] leaves ; 29 cm.
by Teri-Ann Caswell.

ABSTRACT

Recent research has shown that yawning is a social and perhaps a contagious phenomenon. It is our feeling that yawning is a contagious phenomenon (contrary to the suggestions of Baenninger, 1987) and that subjects exposed to a high status other who yawns will be especially susceptible to the contagious quality of a yawn. Subjects were assigned to one of four conditions: high status/yawning model, high status/non-yawning model, low status/yawning model, and low status/non-yawning model. It was found that yawning does seem to be contagious, in that subjects yawned more frequently after observing a yawning model. Although there was no significant overall tendency for greater yawning in response to a high status yawner, there was some evidence to suggest that high Self-Monitors yawn more in the high status/yawning condition than in the other three conditions and that high Independence of Judgment yawned less in that condition.

We frequently yawn because of a lack of sleep or because we are bored. A more interesting phenomenon occurs when we see someone else yawn and we yawn in response. Some research (Moore 1947; Provine 1986; Provine, Tate & Geldmacher 1987; Baenninger 1987; Provine 1989) has been done on the phenomenon of social yawning. Much of this research on yawning has been done by Robert Provine. He has offered some interesting insights into the strange yet wondrous world of-yawning.

Before Provine, Joseph Moore (1947) contributed one of the first studies to investigate the social aspects of yawning. In his initial experiment, Moore trained confederates to yawn in certain social places, such as church, a school assembly and a library. He found that, on average, two yawns of the confederate produced a yawn in response from others.

In his second experiment, blind (seeing impaired) and nonblind subjects listened to a phonograph with sounds of yawns. The investigation found that 0% of the nonblind subjects yawned to the phonograph sounds. However, 43% of the blind subjects yawned to the same sound.

In the last experiment, Moore showed to a class a film of a girl yawning. From self-reports, 33% of the class yawned from watching the film. This establishes that seeing a yawn will elicit yawning and hearing a yawn, if subjects really are in tune with it, is enough to elicit a yawn.

Recent research has added to these findings (Provine 1986; Provine, Tate & Geldinacher 1987; Provine, Hamernik & Curchack 1987). In one of the first investigations, Provine (1986) confirmed some of the results that Moore (1947) found. He showed his subjects a videotape of a man smiling or yawning 30 times in each condition. Provine found that 55% of his subjects yawned when shown the yawning man as compared to only 21% of the subjects who yawned when the man smiled. This reaffirms that seeing someone yawn will elicit a yawn.

Robert Provine and Heidi Hamernik (1986) also investigated yawning as a result of being bored. Subjects viewed a videotape with either rock videos or an unchanging color-bar test pattern. Through self-reports, the color-bar pattern produced 5.78 yawns as compared to 3.41 yawns, which was found to be significant. This indicates that something interesting will not produce as many yawns as something that is uninteresting.

In another study, Provine (1986) investigated the effect of reading about yawning. He found that if people read about yawning, they will yawn more than those who read about something else such as hiccupping. Also, they will not only yawn more, but will think about yawning more than those who read about hiccupping.

All of this research seems to suggest that yawning is a social and contagious phenomenon. Another study by Provine, Tate and Geldmacher (1987) confirms this hypothesis. Subjects were asked to think about yawning while exercising at the same time. The results showed that increased exercise had no effect on yawning. Therefore, yawning is not a respiratory event; it may be a muscle stretch that may have a signal function. Provine speculates that both yawning and its resulting physiology are contagious, thereby synchronizing the physiological state of a group. This is consistent with the idea yawning is a signal to other group members. This idea was reinforced by earlier research (Provine, Hamernik, & Curchack 1987) in which subjects were more likely to yawn before bedtime and after waking. Also, 47% of these subjects' stretches were accompanied by yawns, but only 11% of the yawns were accompanied by the stretches. It seems that stretching is more frequent shortly after waking and, when accompanied by yawns, only occurs in the morning. This leaves open the speculation that yawning may be a signal for drowsiness, both in the morning and at night. However, when it combined with stretching, it may mean everyone in a group should relieve themselves of the drowsiness, whereas when it occurs alone, it may signal the need to decrease activity and sleep. Again, this may be to synchronize the physiological state of a group.

However, there is some criticism of this research. Ronald Baenninger (1987) suggested that yawning is not a contagious phenomenon. Subjects were observed on subways, in classes and in leisure activities, such as watching television. Baenninger found that more yawns were

elicited in empty subways, the library and during leisure activities. However, in crowded subways, there was not as much yawning as expected. One very interesting aspect of this study was that Baenninger viewed not only humans, but other animals' yawns as well. His data suggested that the absence of interesting stimuli may elicit yawns in our species, but that the presence of such stimuli prompted yawning in other species.

His second experiment investigated a previous conclusion (Provine & Hamernik 1986) that uninteresting stimuli will provoke more yawns than interesting stimuli. Subjects watched or heard someone read a passage from *Alice in Wonderland* and during the course of the reading, the reader would yawn. The results showed that simply feeling bored was not enough to provoke yawning in the experiment. There seems to be a logical explanation to this conclusion. It may be that in our society, there is some social anxiety and disapproval associated with yawning. If yawning is associated with something boring, it may be that to yawn in another's presence is an insult. This is supported by Baenninger who found that only three out of the forty human subjects yawned in the laboratory, yet twenty (50%) said they felt like yawning. This seems to suggest that if individuals are confronted with a high prestige (and presumably interesting) stimulus person, they will yawn less than if confronted with a low prestige stimulus person.

However, we think this relationship will be reversed because of the attention and contagious factors of yawning. If we tap in on the "signal" on others to yawn, a high prestige person, namely the leader of a group, will probably elicit more yawns than a low prestige person. People will conform more to a high prestige model than a low prestige model, especially if they are looking to social cues to determine their behavior. A pair of ways to measure this tendency is through the Self-Monitoring Scale and the Independence of Judgment Test.

To determine if people look to the social situation to determine how they should act can be measured by the Self-Monitoring Scale developed by Mark Snyder (1974). Snyder took questions from five different categories relating to high self-monitoring, such as concern for social appropriateness, and gave a forty-one true or false statement questionnaire to 192 Stanford undergraduates. He found that twenty-five (later trimmed down to eighteen) of those items had a significance of $<.05$ and $<.01$, respectively, tapping into the social cues a person must look to in order to know how to behave. The validity of the test was shown through a variety of experiments. Snyder (1974) gave this questionnaire to a group of stage actors, who obviously are attuned to the social cues for monitoring their self-presentation, and they scored much higher on the test as compared to the Stanford group. However, when Snyder gave the questionnaire to a group of psychiatric ward patients, who are unable or unwilling to monitor their selfpresentation, they had much lower scores than the Stanford group.

Further evidence (Snyder & Swann 1976; Snyder & Kendzierski 1982; Snyder & Gangestad 1982) shows that people who have low selfmonitoring scores will enter situations more focused on their own attitudes and beliefs. Also, if they had the opportunity to change a situation or the character in a certain situation, low selfmonitors would change it to suit their own beliefs. On the other hand, high self-monitors will not change a situation unless the actions of the character are undefined (Snyder & Xendzierski 1982). Also, if given the

opportunity, high self-monitors will look more often to the majority in order to be socially appropriate (Snyder 1974)

Another measure of if people will conform to social cues is by the Independence of Judgment Test (Barron 1953). The test was designed on the basis of two hundred questions that were related to the personality traits that would determine independence of judgment. It was created as a result of the Solomon Asch studies on conformity. The list was trimmed down to eighty-four questions and given to a random group of subjects. Only those questions with a significance level of $p < .05$ and $p < .01$ were retained, leaving a total of twenty-two questions that were found to determine the difference between a yielder and an independent in the Asch conformity situation.

The present experiment was designed to investigate the contagious and signal power of yawning. If there is an effect, then in terms of the contagious factor of yawning: 1) subjects should yawn more if a yawning model is presented than if a nonyawning model is shown. In terms of the signal power, evidence has shown that if people are in a situation in which a suggestion or action is requested by a high prestige model, more people will conform to that suggestion or action (Lefkowitz, Blake & Mouton 1955 Bickman 1974). This is not only true for adults, but very obvious among young children (Patel & Gordon 1960). Because this is the case, it is predicted that 2) if subjects see a high status model yawn, they should yawn more than if they see a low status model yawn; 3) if the score on the Self-Monitoring Scale is high and the score on the Independence of Judgment Test is low, more yawns should be elicited in the high status/yawning model condition as compared to the low status/yawning model condition because these subjects tend to look to social cues (like status) for behavioral direction; 4) in the non-yawning model conditions, the high status model should provoke fewer yawns than the low status model because the high status model is a more interesting stimulus.

METHOD SECTION

SUBJECTS

Two hundred introductory psychology students of both sexes participated in the study for partial fulfillment of a course requirement at Arizona State University. The first eighteen were pilot subjects and nineteen were dropped from the analysis because of suspicion that they were being secretly observed. The remaining one hundred and sixty-three subjects were used for the analysis of the present experiment.

APPARATUS

A VCR, a hidden television camera, and two television monitors were used so that: 1) on one monitor, subjects could view the model on one of two ten minute videotapes; 2) and, on the other monitor, the subject's yawning activity could be viewed secretly in an adjoining room. One of the three research assistants, who were blind to the conditions, observed and counted the subject's yawning activity on the television monitor in the adjoining room. Before the start

of the experiment, the research assistants watched a practice videotape of a person randomly yawning and stifling yawns and there was 75% perfect agreement between all three in their labeling of yawns and stifled yawns. A stopwatch was used to measure the latency of yawns. The Independence of Judgment Test (Appendix A), the Self-Monitoring Scale (Appendix B), a question naire asking-how the subject feels (Appendix C), a questionnaire asking the subject to rate the confederate on the videotape based on personality characteristics (Appendix D), a status manipulation check questionnaire (Appendix E), a questionnaire assessing the confederate's and subject's yawning and stifling behavior (Appendix F) and a debriefing questionnaire (Appendix G) were used.

Table 1
Combination of the three status manipulation check items *

		STATUS		
		High	Low	
<u>MODEL</u> <u>YAWNS</u>	Yes (n)	14.08 (40)	8.95 (40)	11.51
	No (n)	13.66 (41)	9.29 (42)	11.48
		13.87	9.12	

* Note: Higher scores mean greater perceived status.

PROCEDURE

Subjects were told they were participating in a study of first impressions". During pilot testing, a few changes were made. The original videotape was five minutes long and had the confederate yawning six times at various intervals. Unfortunately, only two of the eighteen subjects yawned during the tape and only one yawn each. Also, subjects sat in desk and would frequently cover their mouths with their hands, making it impossible to see if they were actually yawning or not. The minor changes made were: first, the tape was increased to ten minutes with the confederate yawning ten times at various intervals.: Second, the subjects sat in a chair with no arms. This forced the subject to sit with arms crossed, leaving the face in full view of the observers.

In the actual experiment, each subject was assigned to one of the four conditions: high status/yawning model, high status/nonyawning model, low status/yawning model and low status/non-yawning model. In the yawning condition, the confederate on the videotape yawned ten times at various intervals while supposedly doing a "free association" task. In the non-yawning condition, the confederate did not yawn at all while performing the same task during the ten minutes. At the outset of the experiment, each subject was asked to fill out a couple of questionnaires (Appendix A & B) just to help them get into the "flow" of the experiment. These were the Self-Monitoring Scale and the Independence of Judgment Test. After-completing the questionnaires, depending on the condition, the experimenter either gave the subject a high status profile of the person they would be viewing on the tape, which was the following:

SUBJECT: #105 SEX: Male

OCCUPATION: Regional Manager for C-Pec Corporation, an Arizona based computer and microchip product supplier. Currently in charge of 40 employees in five major departments within the corporation. He does the marketing and business planning for each department, in addition to supervising employee performance. His monthly working budget is about \$40,000 for business purposes.

or a low status profile, which was the following:

SUBJECT: #105 SEX: Male

OCCUPATION: Truck driver for C-Pec Corporation, an Arizona based computer and microchip product supplier. Currently drives to 40 businesses in five major districts in the Valley. He delivers products, obtains signatures for the merchandise received, and calls in to check on any changes in the scheduling. His monthly working budget is about \$400 for truck maintenance.

The subject was told that the person on the videotape they would be watching was taped while performing a previous experiment that required him to free associate to two geometric figures that were placed on two cards in-front of him. The subjects were instructed to pay attention to the proceedings of the experiment and to form a "first impression" of the confederate in their minds and that after the tape was finished, the experimenter would be giving the subjects the confederate's free associations to help them with their first impressions. If there were no questions, the experimenter left the room and in another room, started the videotape. At the beginning of the tape, the experimenter and observer started two stopwatches. The experimenter left the room for the duration of the tape. The observer, watching on a TV monitor, recorded the number of yawns and/or stifles made by the subject and the time that each occurred.

When the tape was finished, the experimenter returned, turned off the tape and returned to the experiment room. The subjects were first asked to fill out a questionnaire on how they were feeling "right now" after having watched the tape (Appendix C). The subject was then asked to fill out a personality assessment of the person on the videotape, with personality characteristics such as likeable/unlikeable (Appendix D). The next questionnaire asked

subjects to rate their perceptions of the job the person on the videotape held (Appendix E). This was manipulation check on the status factor. The next questionnaire was given to assess subjects' memories of the confederate's yawning and stifling behaviors during the tape, as well as their own while watching the videotape (Appendix F). Lastly, a debriefing questionnaire was given to each subject-(Appendix G). The experimenter examined the questionnaire and employed it to check for suspicion. Finally the subject was debriefed and allowed to leave.

RESULTS

A two factor ANOVA was done on the majority of the study's dependent variables. The two factors were: Status of Model (High/Low) and Model Yawns (Yes/No). Two other factors, SelfMonitoring Scale scores and Independence of Judgment scores, were examined as predictors of yawning activity through correlational analyses.

MANIPULATION CHECKS

The first manipulation check dealt with whether subjects were able to detect that the confederate they were watching yawned or not. Those results are shown in Table 5. The main effect on subjects' estimate of the number of times the confederate yawned for the yawning model factor (whether the confederate yawned or not) was significant $F(1,157)=2,037, p<.001$. The main effect for status was non-significant $F(1,157)=0.33, ns$. The interaction of the yawning model factor and the status factor was also nonsignificant $F(1,157)=0.33, ns$.

The second manipulation. check assessed whether subjects accorded the model. differential.tatus in,the high and low status conditions. There were three scales inquiring about the status of the model, ranging in value from 1-7, with the following items: high/low prestige, high/low importance, and high/low status.

Table 2

Table 2

Mean and Percentage Yawning Scores

STATUS

		High	Low
<u>MODEL</u>	Yes (means/%) (n)	1.75/56% (40)	1.30/60% (40)
	<u>YAWNS</u> No (means/%) (n)	0.95/46% (41)	0.86/46% (42)

The third prediction was that if the score on the SelfMonitoring Scale is high and the score on the Independence of judgment is low, more yawns should be elicited in the high status/yawning model condition because these subjects will tend to look to social cues.

table 3 - 4

Table 3

Within cell correlations between
Self-Monitoring scores and number
of observed yawns

		<u>STATUS</u>	
		High	Low
<u>MODEL</u> <u>YAWN</u>	Yes (n)	.3388 (40) p= .02	-.1753 (40) p= .14
	No (n)	.1815 (41) p= .13	.1286 (42) p= .21

Table 4

Within cell correlations between
Independence of Judgement and number
of observed yawns

		<u>STATUS</u>	
		High	Low
<u>MODEL</u> <u>YAWN</u>	Yes (n)	-.1686 (40) p= .15	.0732 (40) p= .33
	No (n)	.1381 (41) p= .20	.1832 (42) p= .12

This analysis is divided into two parts. The first part tests the hypothesis that the correlation between Self-Monitoring and yawning will be more positive in the high status/yawning model

condition than in the low status/yawning model condition. By computing Fisher's Z transformation of correlation coefficients, we obtain a value for this analysis of $z=2.29, <.05$ (See Table 3). The second part of the analysis tests the hypothesis that the correlation between Independence of Judgment and yawning will be more negative in the high status/yawning model condition than in the low status/yawning model condition. Again, computing the Fisher's Z, we obtain a value of $z=-1.06, ns$ (See Table 4).

The fourth prediction was that in the non-yawning model conditions, the high status model should provoke fewer yawns than the low status model because the high status model is a more interesting stimulus. Comparing the high status/non-yawning condition against the low status/non-yawning condition, the computed t score was $t(159)=.30, ns$ (See Table 2).

SECONDARY ANALYSES

With further analysis, some very interesting results, with specific variables, were encountered. In terms of the interaction main effect, no secondary results were found. However, the model yawns main effect produced significant effects with some specific variables.

Table 5

Mean scores on secondary dependent variables

MODEL YAWNS

Specific Variables Analyzed	Yes		No	
	Status		Status	
	High	Low	High	Low
Intelligent/ Unintelligent	4.05	5.13	3.32	4.80
Alert/ Drowsy	6.46	6.58	3.59	3.93
Did you notice person yawn?	1.00	1.00	1.95	1.98
How many times did he yawn?	8.23	8.18	0.05	0.05
Did you stifle a yawn?	1.36	1.38	1.63	1.68
How many times did you stifle?	1.67	1.15	0.78	0.78

A yawning model main effect appeared on two rating of the confederate: intelligent/unintelligent, $F(1,157)=6.10, p<.02$ and alert/drowsy, $F(1,157)=166.07, p<.001$. That effect also appeared for the two questions: 1) Did-the person you watched yawn?, $F(1,157)=2,037, p<.001$ and 2) How many times?, $F(1,157)=345.81, p<.001$. Finally for questions 5 (Did you stifle a yawn?) $F(1,157) =12.56, p<.001$ and 6 (How many times?) $F(1,157)=4.12, p<.04$ significant effects resulted for the yawning model main effect (See Table 5) In terms of the status main effect, only ratings of the confederate on the intelligent/unintelligent dimension showed a significant result with $F(1,157)=36.03, p<.001$ (See Table 5).

When analyzing within cell correlations, there was a substantial positive monitoring correlation with question 4 (How many times did you yawn?) and a substantial negative

correlation with question 6 (How many times did you stifle a yawn) in the high status/yawning model -condition as compared with the other three conditions (See Tables 6 & 7)

Table 6

**Within cell correlations between
Self-Monitoring Scale scores and Self-
reported number of yawns**

		<u>STATUS</u>	
		High	Low
<u>MODEL</u> <u>YAWN</u>	Yes (n)	.2436 (40) p= .07	-.1718 (40) p= .15
	No (n)	-.0809 (41) p= .31	.1616 (42) p= .15

Table 7

**Within cell correlations between Self-
Monitoring Scale scores and self-reported
number of stifles**

		<u>STATUS</u>	
		High	Low
<u>MODEL</u> <u>YAWN</u>	Yes (n)	.3648 (40) p= .01	-.0858 (40) p= .30
	No (n)	-.1493 (41) p= .18	.0190 (42) p= .45

When comparing the Self-Monitoring and the self-reported yawning correlation in the high status/yawning model condition against the average of that correlation in the other three conditions, a Fisher's Z transformation computed a $z=1.19$, ns. When comparing the Self-Monitoring and the self-reported stifling correlation in the high status/yawning model condition against the average of that correlation in the other three conditions, the computed $z=2.51$, $p < .05$.

DISCUSSION

In terms of the predictions, there was evidence to show that if a person is presented with a model who yawns, a yawn in response is more likely. The yawning conditions produced more yawns than the non-yawning model conditions. However, it seemed that status did not make a substantial difference in whether a subject yawned more or not; however, the analysis indicated that the trend is in a direction suggesting that a high status person would make someone yawn more than a low status person.

In terms of the Self-Monitoring Scale, there is a significant tendency for high Self-Monitors to yawn more in the high status/yawning model condition than in the low status/yawning model condition. This tendency does provide evidence that high Self-Monitors are paying more attention to the high status person as would be predicted by Self-Monitoring theory. This attentional focus is further shown by the self-reports of yawning and stifling behavior by subjects. High Self-Monitors reported both greater numbers of yawns and stifled yawns in the high status/yawning model condition, indicating they were paying more attention to the high status model rather than trying to imitate him. In the second part of the analysis, it seems that the higher the score on the Independence of Judgment Test, especially in the high status/yawning model condition, the fewer yawns occurred. Unfortunately, this difference was not significant, but again, in the right direction, suggesting that people with high independence of Judgment will try to avoid yawning, especially in the high status/yawning model condition, to resist forms of influence as benign as a yawn. What was really interesting was that the correlations with yawning for the Self-Monitoring and Independence of Judgment were in the opposite directions. This is further evidence that not only are the two concepts not correlated, but that people who are either high Self-Monitors or high in Independence of Judgment are behaving in a different manner. It was also found that in terms of the non-yawning model conditions, the status cells did not differ in terms of the number of yawns that were provoked, suggesting that our high status model may not have been seen as a more interesting stimulus than the low status model.

In the secondary analyses, it seemed that if the confederate on the tape yawned, he was found to be more unintelligent and more drowsy than if he did not yawn. It was also shown that subjects were able to tell if the person was yawning and be able to recall closely (8.2) the number of yawns the confederate actually performed (10). The subjects also reported a great deal more stifling in the yawning model conditions than in the non-yawning model conditions.

In the overall analysis, the study indicates that there is evidence suggesting that people

looking to social cues are influenced by a high status other to engage in something as mundane as yawning. However, just the opposite effect is suggested with people who rely on their own judgment to determine their behavior.

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APPENDIX A

Answer the following questions by circling T (True) or P (False).

Please answer all questions.

1. T or F What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.
2. T or F Some of my friends think that my ideas are impractical, if not a bit wild.
3. T or F Kindness and generosity are the most important qualities for a wife to have.
4. T or F I have seen some things so sad that I almost felt like crying.
5. T or F I don't understand how men in some European countries can be so derogative to one another.
6. T or F I must admit that I would find it hard to have for a close friend a person whose manners or appearance made him somewhat repulsive, no matter how brilliant or kind he might be.
7. T or F A person should not probe too deeply into his own and other peoples' feelings, but take things as they are.
8. T or F I could cut my moorings--quit my home, family, and friends--without suffering great regrets.
9. T or F I prefer team games to games in which one individual competes against another.
10. T or F What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
11. T or F I acquired a strong interest in intellectual and aesthetic matters from my mother.
12. T or F Human nature being what it is, there will always be war and conflict.
13. T or F I believe you should ignore other peoples faults and make an effort to get along

with almost everyone.

14. T or F The best theory is the one that has the best practical applications.

15. T or F I like to fool around with new ideas, even if they turn out later to be a total waste of time.

16. T or F The unfinished and the imperfect often have greater appeal for me than the completed and polished.

17. T or F I would rather have a few intense friendships than a great many friendly but casual relationships.

18. T or F Perfect balance is the essence of all good composition.

19. T or F Science should have as much to say about moral values as religion does.

20. T or F The happy person tends always to be poised, courteous outgoing, and emotionally controlled.

21. T or F Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.

22. T or F it is easy for me to take orders and do what I am told.

APPENDIX B

Answer the following questions by circling T (True) or F (False).
Please answer all questions.

1. T or F I find it hard to imitate the behavior of other people.

2. T or F At parties and social gatherings, I do not attempt to do or say things that others will like.

3. T or F I can only argue for ideas which I already believe.

4. T or F I can make impromptu speeches even on topics about which I have almost no information.

5. T or F I guess I put on a show to impress or entertain others.

6. T or F I would probably make a good actor.

7. T or F In a group of people I am rarely the center of attention.
8. T or F In different situations and with different people, I often act like very different persons.
9. T or F I am not particularly good at making other people like me.
10. T or F I'm not always the person I appear to be.
11. T or F I would not change my opinions (or the way I do things) in order to please someone or win their favor.
12. T or F I have considered being an entertainer.
13. T or F I have never been good at games like charades or improvisational acting.
14. T or F I have trouble changing my behavior to suit different people and different situations.
15. T or F At a party I let others keep the jokes and stories going.
16. T or F I feel a bit awkward in public and do not show up quite well as I should.
17. T or F I can look anyone in the eye and tell a lie with a straight face (if for a right end).
18. T or F I may deceive people by being friendly when I really dislike them.

Because physiological and emotional states may affect one's judgement, we would like you to rate the way you feel at this time along the following series of scales. Please mark (with an X or check) the category on each scale which most closely describes how you feel at the moment.

PENDIX C

Because physiological and emotional states may affect one's judgment, we would like you to rate the way you feel at this time along the following series of scales. Please mark (with an X or check) the category on each scale which most closely describes how you feel at the moment.

happy	[1 / 2 / 3 / 4 / 5 / 6 / 7]	sad
strong	[1 / 2 / 3 / 4 / 5 / 6 / 7]	weak
clear	[1 / 2 / 3 / 4 / 5 / 6 / 7]	hazy
alert	[1 / 2 / 3 / 4 / 5 / 6 / 7]	drowsy
light	[1 / 2 / 3 / 4 / 5 / 6 / 7]	dark
refreshed	[1 / 2 / 3 / 4 / 5 / 6 / 7]	weary
healthy	[1 / 2 / 3 / 4 / 5 / 6 / 7]	ill

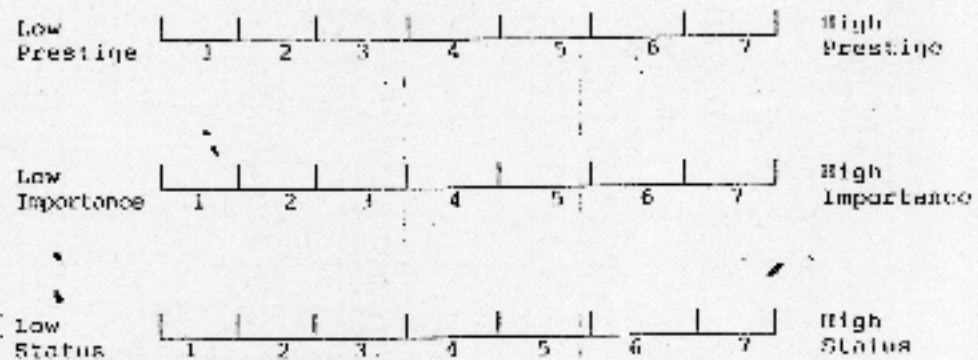
APPENDIX D

Please rate the personality characteristics of the person you just watched along each of the following scales:

likeable	[/ / / / / / / /]	unlikeable
intelligent	[/ / / / / / / /]	unintelligent
friendly	[/ / / / / / / /]	unfriendly
mild	[/ / / / / / / /]	aggressive
pleasant	[/ / / / / / / /]	unpleasant
rational	[/ / / / / / / /]	emotional
intimate	[/ / / / / / / /]	remote
informal	[/ / / / / / / /]	formal
calm	[/ / / / / / / /]	intense
deliberate	[/ / / / / / / /]	careless
steady	[/ / / / / / / /]	unsteady
deep	[/ / / / / / / /]	shallow
alert	[/ / / / / / / /]	drowsy
happy	[/ / / / / / / /]	sad
complex	[/ / / / / / / /]	simple
agreeable	[/ / / / / / / /]	contrary
heterogeneous	[/ / / / / / / /]	homogeneous
sociable	[/ / / / / / / /]	unsociable
mature	[/ / / / / / / /]	immature
kind	[/ / / / / / / /]	unkind
cautious	[/ / / / / / / /]	rash

APPENDIX E

Please rate on the scales below your perception of the job held by the person you have just seen on the videotape.



APPENDIX F

1. Did you notice that the person you watched yawned during the time you were observing him?
2. If you saw him yawn, about how many times would you say he yawned?
3. Did you yawn at all during the period of observation?
4. If you did yawn, how many times did you do so?
5. Do you remember feeling the need to yawn during the period of observation but stifling it?
6. If yes, how many times did you stifle a yawn?

APPENDIX G

- 1 Describe in your own word; what you think was the hypothesis of this study.
2. Often psychology students read in their classes about experiments in which things are not as they seem, and this occasionally disturbs their natural responses when they are subjects. As you think back honestly, did you feel any doubts about any aspects of this experiment while you were participating? If so, what are they? Describe in what ways, if any, they affected your behavior.