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## A. STATUS OF FRUSTRATOR AS AN INHIBITOR OF HORN-HONKING RESPONSES

### INTRODUCTION

Subjects may consciously attempt to present themselves in a favorable manner, they may cooperate with the experimenter or interviewer, and their reactions may be affected by the measurement process itself. In reviewing a number of such problems, Webb *et al.* (6, pp. 13-27) point out that some of these sources of contamination can be avoided when field data are collected from people who are unaware that they are subjects participating in an experiment. Although field procedures can reduce demand and reactivity effects, experimental manipulations outside of the laboratory may gain realism at the expense of control. The study reported here is an attempt to investigate unobtrusively some effects of frustration in a naturalistic setting without sacrificing experimental control.

Modern automobile traffic frequently creates situations which closely resemble classical formulations of how frustration is instigated. One such instance occurs when one car blocks another at a signal-controlled intersection. Unlike many traffic frustrations, this situation provides a clearly identifiable frustrator and a fairly typical response for the blocked driver: sounding his horn. Horn honking may function instrumentally to remove the offending driver and emotionally to reduce tension. Both kinds of honks may be considered aggressive, especially if they are intended to make the frustrator uncomfortable by bombarding him with unpleasant stimuli.

One factor that is likely to affect aggressive responses is the status of the frustrator (2,3). The higher a person's status, the more likely it is he will have power to exercise sanctions, and although it is improbable that a high status driver would seek vengeance against a honker, fear of retaliation may

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### MEASUREMENT

generalize from other situations where aggression against superiors has been punished.

Aggression is not the only kind of social response that may be affected by status. High status may inhibit the initiation of any social response, even a simple informational signal. Although it is difficult in the present study to distinguish informational from aggressive motivation, it is hypothesized that a high status frustrator will generally inhibit horn honking.

## METHOD

One of two automobiles, a new luxury model or an older car, was driven up to a signal controlled intersection and stopped. The driver was instructed to remain stopped after the signal had changed to green until 15 seconds had elapsed, or until the driver of the car immediately behind honked his horn twice. Subjects were the 82 drivers, 26 women and 56 men, whose progress was blocked by the experimental car. The experiment was run from 10:30 A.M. to 5:30 P.M. on a Sunday, in order to avoid heavy weekday traffic.

## STATUS MANIPULATION

A black 1966 Chrysler Crown Imperial hardtop which had been washed and polished was selected as the high status car.<sup>1</sup> Two low status cars were used: a rusty 1954 Ford station wagon and an unobtrusive gray 1961 Rambler sedan. The Rambler was substituted at noon because it was felt that subjects might reasonably attribute the Ford's failure to move to mechanical breakdown. Responses to these two cars did not turn out to be different, and the data for the two low status cars were combined.

## LOCATION

Six intersections in Palo Alto and Menlo Park, California, were selected according to these criteria: (a) a red light sufficiently long to insure that a high proportion of potential subjects would come to a complete stop behind the experimental car before the signal changed to green, (b) relatively light traffic so that only one car, the subject's, was likely to pull up behind the experimental car, and (c) a narrow street so that it would be difficult for the subject to drive around the car blocking him. Approximately equal numbers of high and low status trials were run at each intersection.

1. We have labeled this operation a "status manipulation" because a large expensive car is frequently associated with wealth, power, and other qualities which are commonly regarded as comprising high status. However, it could be argued that Chrysler is potentially inhibiting not because it is a status symbol, but because of some other less plausible attribute (e.g., physical size).

## PROCEDURE

By timing the signal cycle, the driver of the experimental car usually managed to arrive at the intersection just as the light facing him was turning red. If at least one other car had come to a complete stop behind the experimental car before the signal had turned green, a trial was counted, and when the light changed, an observer started two stopwatches and a tape recorder. Observers were usually stationed in a car parked close to the intersection, but when this was not feasible, they were concealed from view in the back seat of the experimental car. High and low status trials were run simultaneously at different intersections, and the two driver-observer teams switched cars periodically during the day. Drivers wore a plaid sport jacket and white shirt while driving the Chrysler, and an old khaki jacket while driving the older car.

## Dependent Measures

At the end of each trial, the observer noted whether the subject had honked once, twice, or not at all. Latency of each honk and estimated length of each honk were recorded and later double checked against tape recordings.

## Subject Characteristics

Immediately after each trial, the observer took down the year, make, and model of the subject's car. Sex and estimated age of driver, number of passengers, and number of cars behind the experimental car when the signal changed were also recorded.

## Results and Discussion

Eight subjects, all men, were eliminated from the analysis for the following reasons: four cars in the low status condition and one in the high status condition went around the experimental car; on one trial the driver of the experimental car left the intersection early; and two cars in the low status condition, instead of honking, hit the back bumper of the experimental car, and the driver did not wish to wait for a honk. This left 38 subjects in the low status condition and 36 in the high status condition.

Although the drivers of the experimental cars usually waited for 15 seconds, two of the lights used in the experiment were green for only 12 seconds; therefore 12 seconds was used as a cutoff for all data. There were no differences attributable to drivers or intersections.

The clearest way of looking at the results is in terms of the percentage in each condition that honked at least once in 12 seconds. In the low status condition 84 per cent of the subjects honked at least once, whereas in the

high status condition, only 50 percent of the subjects honked ( $\chi^2 = 8.37$ ,  $df = 1$ ,  $p < .01$ ). Another way of looking at this finding is in terms of the latency of the first honk. When no honks are counted as a latency of 12 seconds, it can be seen in Table 1 that the average latency for the new car was longer for both sexes ( $F = 10.71$ ,  $p < .01$ ).

Thus, it is quite clear that status had an inhibitory effect on honking even once. It could be argued that status would have even greater inhibitory effects on more aggressive honking. Although one honk can be considered a polite way of calling attention to the green light, it is possible that subjects felt that a second honk would be interpreted as aggression.<sup>2</sup>

Forty-seven percent of the subjects in the low status condition honked twice at the experimental car, as compared to 19 percent of the subjects in the high status condition ( $\chi^2 = 5.26$ ,  $df = 1$ ,  $p < .05$ ). This difference should be interpreted cautiously because it is confounded with the main result that more people honk generally in the low status condition. Of those who overcame the inhibition to honk at all, 56 percent in the low status condition and 39 percent in the high status condition honked a second time, a difference which was not significant. First-honk latencies for honkers were about equal for the two conditions. The overall findings are presented in Table 2.

**TABLE 1**  
*Field Experiment: Mean Latency of First Honk (In seconds)*

Frustrator	Sex of Driver	
	Male	Female
Low status	6 (100)	
High status		

Note: Numbers in parentheses indicate the number of subjects.

**TABLE 2**  
*Field Experiment: Number of Drivers Honking Zero, One, and Two Times*

Frustrator	Honking in 12 Seconds		
	Never	Once	Twice
Low status	6	14	18
High status	18	11	7

Note: Overall  $\chi^2 = 11.14$ ,  $p < .01$ .

**TABLE 3**  
*Questionnaire Experiment: Mean Latency of Honking (in seconds)*

Frustrator	Sex of Subject	
	Male	Female

Note: Numbers in parentheses indicate the number of subjects.

2. Series of honks separated by intervals of less than one second were counted as a single honk.

Sex of driver was the only other measure that was a good predictor of honking behavior. In both conditions men tended to honk faster than women ( $F = 4.49$ ,  $p < .05$ ). The interaction of status and sex did not approach significance ( $F = 1.17$ ). These data are consistent with laboratory findings (1) that men tend to aggress more than women.

Most experiments designed to study the effects of frustration have been carried out in the laboratory or the classroom, and many of these have employed written materials (2,5).

It is undoubtedly much easier to use questionnaires, and if they produce the same results as field experiments, then in the interest of economy, they would have great advantage over naturalistic experiments. However, over 30 years ago, LaPiere warned that reactions to such instruments "may indicate what the responder would actually do when confronted with the situation symbolized in the question, but there is no assurance that it will" (4, p. 236).

In order to investigate this relationship between actual and predicted behavior, an attempt was made to replicate the present study as a questionnaire experiment. Obviously, the most appropriate sample to use would be one comprised of motorists sampled in the same way that the original drivers were sampled. Because this was not practicable, a questionnaire experiment was administered in a junior college classroom.

Subjects were 57 students in an introductory psychology class. Two forms of the critical item were included as the first of three traffic situations on a one-page questionnaire: "You are stopped at a traffic light behind a black 1966 Chrysler (gray 1961 Rambler). The light turns green and for no apparent reason the driver does not go on. Would you honk at him?" If subjects indicated that they would honk, they were then asked to indicate on a scale from one to 14 seconds how long they would wait before honking. Forms were alternated so that approximately equal numbers of subjects received the Chrysler and Rambler versions. Verbal instructions strongly emphasized that subjects were to answer according to what they actually thought they would do in such a situation. No personal information other than sex, age, and whether or not they were licensed to drive was required.

After the questionnaire had been collected, the class was informed that different kinds of cars had been used for the horn-honking item. The experimenter then asked subjects to raise their hands when they heard the name of the car that appeared in the first item of their questionnaire. All subjects were able to select the correct name from a list of four makes which was read.

One subject (a female in the high status condition) failed to mark the honk latency scale, and another subject in the same condition indicated that she would go around the blocking car. Both of these subjects were eliminated from the analysis, leaving 27 in the high status condition and 28 in the low status condition. The results were analyzed in the same manner as the latency data from the field experiment. Means for each condition broken down by sex are presented in Table 3. Males reported that they thought that

they would honk considerably sooner at the Chrysler than at the Rambler, whereas this was slightly reversed for females (interaction of sex and status  $F = 4.97, p < .05$ ). Eleven subjects, six males in the low status condition and five females in the high status condition, indicated that they would not honk within 12 seconds.

It is clear that the behavior reported on the questionnaire is different from the behavior actually observed in the field. The age difference in the samples may account for this disparity. Median estimated age of subjects in the field was 38, compared to a median age of 22 in the classroom. In order to check the possibility that younger males would indeed honk faster at the high status car, the field data were reanalyzed by age. The results for younger males, estimated ages 16 to 30, fit the general pattern of the field results and differed from the results of the classroom experiment. In the field, young males honked sooner at the Rambler than at the Chrysler ( $t = 2.74, df = 11, p < .02$ ).

Unfortunately, because these two studies differed in both sample and method, it is impossible to conclude that the differences are due to differences in the method of collecting data. However, it is clear that questionnaire data obtained from this often used population of subjects do not always correspond to what goes on in the real world.

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