Anthony N. Doob and Alan E. Gross

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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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.[1] 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.[2]

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)

	Sex of Driver	
Frustrator	*Male*	*Female*
Low status	6.8 (23)	7.6 (15)
High status	8.5 (25)	10.9 (11)

Note: Numbers in parentheses indicate the number of subjects.

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

	Honking in 12 Seconds		
Frustrator	*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)

	Sex of Subject	
Frustrator	*Male*	*Female*
Low status	9.1 (18)	8.2 (10)
High status	5.5 (13)	9.2 (14)

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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B. STATUS OF FRUSTRATOR AS AN INHIBITOR OF HORN-HONKING RESPONSES: HOW WE DID IT

Alan E. Gross and Anthony N. Doob

Most social science research looks as if it were planned in a straightforward, logical fashion. Reports are written as if the people involved had just finished reading the relevant literature and saw a need for a particular question to be answered. It generally looks as if these scientists thought a great deal about the best way to answer the question and then designed their research accordingly. The research described in the accompanying article does not conform to this pattern. Instead, it resulted from an explicit, self-conscious attempt to design a study utilizing a specific method which, at the time, was relatively underused in psychology. In fact, in this case, the content that was eventually studied was selected only because it was amenable to the method of interest.

Perhaps this focus on method can be better understood if we begin by describing how this study came into being. In the winter quarter of 1966 we were both graduate students at Stanford and enrolled in a seminar in social psychology taught by J. Merrill Carlsmith and Jonathan Freedman. The focus of this seminar was on methodology, or, more specifically, on using nonlaboratory methods to do social-psychological research. The core reading was a book (at that time still in mimeographed form) by E. J. Webb, D. T. Campbell, R. D. Schwartz, and Lee Sechrest entitled *Unobtrusive Methods: Nonreactive Research in the Social Sciences* (1966). One of its main points was that in most social-psychological investigations, especially door-to-door surveys or those set in laboratories or classrooms, the subjects are aware of the fact that they are being observed and measured. And further, when subjects become aware that they are being studied, they behave differently than they do under more normal circumstances. Webb and his colleagues call this the "guinea pig" effect (p. 13), and they point out that human guinea pigs may react to experimental scrutiny by attempting to present a good impression. In addition they warn that a measuring instrument such as a questionnaire may suggest ideas that the subject did not previously have in mind—that is, the research process itself can distort or create results. After reviewing a number of such "reactive measurement" problems inherent in

Source: Prepared especially for this volume.

traditional paper-and-pencil studies, Webb et al. suggest a wide range of ingenious means for unobtrusively observing behavior in natural settings.

We were lucky enough to have an advance copy of the book, which Merrill Carlsmith and Jon Freedman had managed to secure from Gene Webb, a visitor to Stanford that year. The major assignment in the course was to design and complete a nonlaboratory project modeled after the ideas and methods in the book. Since both of us had desks in research houses on the same block (the Stanford psychology department was at that time spread out across the campus in houses that the university had converted to offices and research rooms), and we met quite frequently, we decided to collaborate on the yet to be designed research project.

Most of the students, including ourselves, had had considerable experience in the laboratory. The research bias at the Stanford psychology department was decidedly experimental in that most studies involved the manipulation and control of one or more independent variables, as contrasted with correlational studies in which relationships between variables, none of which were manipulated by the experimenter, are measured. So even though we knew something about how to create experimental treatments in the lab, we had very little field experience. Furthermore if we were to follow the model of the Webb manuscript, we had to measure the effects of our treatments *unobtrusively.* We could not, as we were accustomed to do, hand questionnaires to our subjects or connect them to physiological measuring devices. We had to create experimental treatments (i.e., manipulate an independent variable) and measure the effects of these treatments, without letting the subjects know that they were being studied.

During the first few weeks of the course, we discussed various plans for the unobtrusive research. We discarded methods that required expensive instrumentation such as "electric eyes" and those that involved ethical problems such as invasion of privacy. One afternoon we were examining possibilities for unobtrusively testing some aspects of the classic frustration-aggression hypothesis. We thought about a number of different ways to frustrate people, eventually thinking about one of the day-to-day frustrations that most urban people experience, that of traffic jams. From there, it did not take long until one of us (each of us attributes this to the other, so it must be collaborative research in its most real sense) realized that it is easy to frustrate someone in traffic simply by not moving when a traffic light turns green. In a few minutes, then, we had developed our ideas for our dependent variable. We would drive up to a traffic light (being sure to be first in line). We would wait for the light to turn green, and then we would simply time how long it would take for the driver behind us in line to honk his or her horn.

We immediately began pretesting. Luckily, Doob had a 1949 Plymouth parked outside the door, so we headed for downtown Palo Alto. That afternoon, and for a few days thereafter, we collected beeps and honks at

numerous local intersections. We did various things when the light was green and we weren't moving—we talked to each other, we studied maps, we looked around, but most of all we felt pretty stupid sitting at a green light and not moving. It was, in fact, a rather nerve-wracking experience.

So we had our dependent variable. All we had to do was to figure out a good independent variable and we were on our way to passing the course. We thought of lots of things that would affect how people would react in such a situation. Some of these were the subjects' cars (but since we couldn't bring this under "experimental control" we abandoned it as our major interest); sex and age of the driver (which we couldn't use because we only had two possible drivers—us—and none of our friends were willing to risk participating in our experiment); various bumper stickers; or the number of people in the car. Finally, Gross hit upon the idea of varying the status of the car that did the frustrating. In North America, it is fairly easy to translate operational definitions for high and low status into makes of automobiles. New luxury cars such as Rolls-Royces, Cadillacs, and expensive Chryslers are often sold via advertising in which the manufacturer attempts to associate the product with power, success, and status. Our prediction was that frustrated drivers would be less likely to honk their horns when they were stuck behind such a high-status vehicle than when they were stopped behind a cheap car.

We talked about, among other things, the ethics of such experimentation. Obviously, we were interfering with the subjects to some extent, possibly delaying them as much as 45 seconds or a minute. But we felt that since it was such a common kind of minor frustration, and since our design gave the subject an easy way of "opting out" of the experiment by honking the horn, it was not a serious invasion of the subjects' lives.

Now that we had our experiment designed, all we had to do was to get the equipment together to run it. We found it fairly easy to find clipboards (they are cheap), stopwatches (the department had some that we were able to borrow), and recording forms (as graduate students, we had access to the departmental ditto machine). Access to low-status cars was similarly no problem. Although Doob's old Plymouth could not be used (it had Connecticut license plates and the study was being run in California), Gross owned two low-status cars, registered in California, that were in running condition. However, procurement of a high-status automobile was more difficult. Most of the people we knew either had old cars, or if they had new ones, they were likely to be foreign sedans or sports cars. One of our fellow graduate students, John Masters, now a professor at the University of Minnesota, had a relatively new black Cadillac Fleetwood. It would have been perfect for our study, but he wasn't tempted by the offer of a trade for a day with a 1949 Plymouth, and more to the point, he was going to be out of town that weekend. We finally resorted to commercial car rental firms.

There were other expenses that we anticipated. Neither of us were any good at identifying the years or makes of other cars. Since some of the people

we talked to in the course thought that there was a possibility of an interaction between the status of the frustrating car and the status of the car behind (the subject's car), such that people in old cars would honk faster at new cars and people in new cars would honk faster at old cars, we thought it important to get a relatively good estimate of the types of cars that were behind us. This then meant that we needed to hire two high school students who could identify cars. In addition, we had to rent portable tape recorders to record the honks to check our on-the-spot timing. We estimated that the total cost would come to about $50 for these three items.

Being graduate students, we didn't relish the idea of paying for this ourselves. Luckily Sydney Burkhart, the departmental administrative assistant at Stanford, believed that we were not just planning a Sunday joy ride in a luxury car and assured us that she would arrange to have us reimbursed for our expenses.

On Sunday, February 20, 1966, we were ready to go. Six intersections with relatively light traffic had been preselected such that the red light was long enough so our car and the subject's car could pull up before the signal changed, and the street was narrow so that the subject's car could not easily drive around the frustrating car. Three of the intersections were located near the main shopping district of Palo Alto; the remainder were in residential areas. Gross arranged with Avis to rent a luxury car, and the evening before had gone to the Avis office to pick it up. Unfortunately, it was covered with road dust, the Avis maintenance crew was off for the weekend, the local car wash was closed, and neither of us was really thrilled with the prospect of polishing an Avis rent-a-car. Gross solved the problem: There was no need for the whole car to look great—only the back end. So he spent a few minutes polishing the back end of the car, and then we were, indeed, ready to begin experimenting. On Sunday morning we met with our two observers and proceeded to the first two intersections. The procedure as described in our report went smoothly, with only a few exceptions. Two subjects chose to hit the back of our low-status car rather than honk their horns (if their horns were in working order), and in the afternoon, one of our observers began feeling sick from riding around in the back seat of the cars, lying down so as not to be seen and popping up as soon as we started moving so as to be able to describe the subject and his or her car. As we mentioned in our report, during lunch we thought that it was possible that some people weren't honking at the Ford because they might have thought it was broken down. We then substituted the Rambler, but as it turned out, the data for the two cars were almost identical.

Otherwise, things went quite well. The driver of the car would pull up to an intersection in such a way that he would be the first in line, and generally would manage to have only one car behind him. He would then wait until the light turned green, and when it did, he would say "green" so that the time could be checked on the tape recorder, and then he would wait until the

person behind us honked his or her horn. The observer, who often rode in the back seat of the car, lying down so as not to be seen, started two stopwatches when the light turned green and stopped one of them when the driver honked the horn in order to get the latency of the first honk. The second stopwatch was used to time second-honk latency. If the subject honked twice, the experimenter left. Often, by this time, the light had turned red, in which case we would turn right (right turns on red lights are legal in California), go around the block, and wait for another subject. The only real problem came in attempting to arrive back at the red light with a subject behind us. After a while, however, this became fairly easy as we learned the timing of the lights.

The two of us switched back and forth from intersection to intersection and from car to car a number of times during the day, and by six in the evening it seemed that we had enough data. Gross returned the car to Avis and the man there did not seem concerned about the fact that in the whole day we had only gone about 25 miles and had used somewhat over a half a tank of gas.

When we had finished collecting the data, neither of us thought that the experiment had worked out. As far as we were concerned, it seemed as if people sometimes honked at us and sometimes did not. It was not apparent that the data were as clear as they turned out to be. In any case, Gross had to leave soon after we started tabulating the data because he was, at that time, earning extra money by delivering the San Francisco *Chronicle* from 4 A.M. to 6 A.M. Doob then was left to tabulate the data. The first way he tried looking at them is essentially reported as Table 2 in the research report. Obviously, this was a welcome finding after a disturbing day's work. Doob telephoned Gross, who by this time was asleep; though groggy, he seemed pleased that things had worked out.

The next few days were devoted to more thorough analyses of the data. We recalculated all of the analyses and listened to the tape recordings we had made of each trial, with the driver saying "green" each time a trial began, and the sound of horns honking in the background. We looked at the data for both drivers separately and found, to our relief, that there were no differences; we looked for differences across the six intersections, but didn't find them; we looked for effects of different kinds of subjects and found only an effect of the driver's sex (as reported in Table 1 of the research paper). We also spent a good bit of time looking at the type of car driven by our subjects. We tried categorizing these cars by "status" but were not able to find any reliable effects. The major reason for this was that no matter how we divided up our subjects, their cars seemed remarkably alike. There were very few subject cars that even approached our Avis car on a perceived status dimension. Given the lack of range on this variable, then, it is not surprising that there was no effect.

We presented our results to the class, which didn't seem to be as interested in them as we had been. Everyone we spoke to at Stanford advised

us that nobody would be interested in publishing the report, let alone reading it, and we ourselves began to question the value of it, other than as an example of how research could be done outside the laboratory. In particular, it had relatively little value if it could be shown that psychology students sitting at a desk in a classroom would produce data exactly like ours. It occurred to us, then, that we should try to find out whether the subjects we generally use think they would react similarly to our drivers in the field. This approach seemed more practical than other related questions such as whether subjects drawn from the same population as our subjects (i.e., drivers on a Sunday in Palo Alto, California) would predict that they would behave the way we had shown they would. We had thought about stopping cars and asking them to fill out a questionnaire, or taking their automobile license numbers and later interviewing them in person or on the telephone, but none of these schemes seemed practical. So we ended up doing the "questionnaire experiment" as described in the research report.

Gross had taught part-time at Foothill College and knew Lorraine Soderstrum, who gave us permission to administer our traffic questionnaire to her introductory psychology course during the summer of 1966. Among other things, being able to test a classroom full of people all at one time was important to us—Gross was in the midst of finishing his Ph.D. dissertation, and Doob was trying to prepare for a week's worth of doctoral exams which were to be held in September.

After running and analyzing the questionnaire study we felt that we had something worthwhile to report. We wrote up the study and in late August sent it off to the *Journal of Personality and Social Psychology* to be considered for publication. We hadn't shown the paper to anyone at Stanford, because no one there had been encouraging about publishing it in any form. As it was, it looked as if our advisors were correct. Nine days after submitting the paper we received a brief note from then *JPSP* editor, Daniel Katz. Katz not only informed us that he considered our paper unacceptable, but he had reached that judgment without the customary comments from an independent reviewer. The only substantive paragraph in Katz's letter read:

> . . . We are under great space pressures and so can do very little with exploratory studies. The problem you are dealing with is not as novel as you imply. There have been studies over the years relating what people do to what they say they do. I don't understand why you have neglected this literature. For example, we have had a study in our Journal by Robbins comparing reports of child-rearing practices with the actual practices. What you have done has been to utilize a field experiment to give a measure of behavior in a natural setting. This should have given added precision but then this precision was lost when you had to use another sample for your questionnaire, and this sample is not really equated with the experimental sample.

This rapid rejection dampened our spirits, to put it mildly. Doob destroyed his copy of the letter, but not before reading the Robbins study

cited by Katz. It was hard to see the relevance of Robbins's work, which demonstrates that parents' errors in their recall of child-rearing practices tended to go toward Dr. Spock's recommendations (from what they had earlier reported they did). Doob angrily suggested to Gross that the phrase "dictated but not read" appearing at the end of the *JPSP* letter indicated that the editor had dictated the letter but had not read the manuscript. As he prepared for the September exams, Doob wrote a brief note to Gross, who had taken a job at the University of California, Irvine, noting that "the whole thing makes me a little sick." Eventually, with exams successfully past and the new school year underway, our spirits revived and we decided to submit the paper to the *Journal of Personality,* which rejected it as inappropriate for the journal (which it probably was).

By this time, Doob was busy running subjects for his Ph.D. thesis and Gross was busy with courses at Irvine. As a result, neither of us had time to consider what to do about the paper. However, people who had received mimeo copies seemed interested and supportive, and we began to feel a bit better about the value of our study. Thus, in early July 1967, we submitted the paper to the *Journal of Social Psychology.* Within a month it had been accepted on the recommendation of one of their editors, John E. Horrocks. Horrocks had described the paper as using "an ingenious idea for research," a reaction which differed rather markedly from that we had received from Katz.

Since that time, the paper has had an interesting history. It has been reprinted at least eight times in various books of readings, has found its way into textbooks, has been reported in numerous newspapers from Cape Cod to San Francisco, and has been described in a national weekend feature magazine and in a photo feature in the April 1975 issue of *Playboy.* We have received innumerable requests for reprints.

In the past few years since publication a number of researchers have adopted variations of the horn-honk method. Kay Deaux, a social psychologist at Purdue University, found that both males and females honked more at female drivers in her study (1971). However, Steven Bochner (1971) found the opposite effect in Sydney, Australia; his subjects honked more quickly when a male drove the experimental car. Bochner also failed to find a status effect (in attempting to create a low-status frustrating car, he used a "P" license plate, which indicates an inexperienced driver), suggesting that there may be American-Australian cross-cultural differences, or that an inexperienced driver is not treated the same as a driver of a low-status car.

In the most extensive horn-honk study yet, Unger, Raymond, and Levine (1974) tested 408 subject-drivers and found that low-status individuals, operationally defined as women and hippies (whose cars were "festooned with stickers, peace signs, and pasted on flowers"), were honked at more rapidly. Unger et al. considered their results as an extension of our findings using low-status cars. Jeffrey Jerred, a student at the University of

Wisconsin, attempted to assess status and sex effects separately. His results, reported in an unpublished 1970 paper, indicated that drivers of both sexes waited twice as long before honking at a female when she was driving a brand new car as when she was driving an older model.

Other researchers have used variations of our technique to study the effects of race and modeling. Sally Hebert of Lake Charles, Louisiana, used both black and white drivers, and Mary Harris (1973), at the University of New Mexico, recorded aggressive responses of drivers after they had observed the behavior (horn-honking in one condition) of a model driver toward a bicyclist who was blocking both cars. Very recently a group of researchers at the University of Utah (Turner, Layton, & Simons, 1975) have developed ingenious means of studying the effects of aggressive stimuli and deindividuation on honking aggression. They used a pickup truck which in some conditions carried a rifle in a rear-window gunrack accompanied by aggressive ("Vengeance") or peaceful ("Friend") bumper stickers. In addition, a rear curtain obscured the pickup driver from view in some treatments. And Robert A. Baron (in press) at Purdue University found that drivers were less likely to honk in conditions designed to arouse feelings incompatible with anger. Three conditions were designed to reduce aggressive responses: a female confederate crossed the street, passing directly in front of the subject's car either using crutches (empathy), wearing a clown mask (humor), or wearing a revealing costume (sexual arousal).

Thus in early 1967, after two rejections, we had been seriously tempted to bury our data deep in a file drawer. Now, a few years later, as we exchange reprints and correspondence, we're glad we persevered in our attempts to make our technique and findings public.

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