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Prompts and Feedback as a Means of Increasing a Customer Service Behavior in a Family Restaurant

David B. Lennox
Western Michigan University

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PROMPTS AND FEEDBACK AS A MEANS OF INCREASING
A CUSTOMER SERVICE BEHAVIOR IN
A FAMILY RESTAURANT

by

David B. Lennox

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Master of Arts
Department of Psychology

Western Michigan University
Kalamazoo, Michigan
December, 1981
PROMPTS AND FEEDBACK AS A MEANS OF INCREASING
A CUSTOMER SERVICE BEHAVIOR IN
A FAMILY RESTAURANT

David B. Lennox, M.A.
Western Michigan University, 1981

Although waiters and waitresses traditionally receive a gratuity based upon quality of service from customers, it may be difficult for them to interpret the amount of the gratuity as an indicator of good service or bad service. This ambiguity could be a result of different amounts of customer checks or faulty comparisons of total dollar amounts (total for the working shift) without taking into consideration the total dollar amount of the customer checks or the number of customers served. This study was conducted to provide accurate information for waitresses regarding gratuity percentage received from customers while monitoring its effects on performance of a customer service behavior - vocal recognition (VR; calling the customer by name). Gratuity and VR percentage for each shift worked were graphically displayed to waitresses in a multiple baseline design. Data were self-reported with interobserver agreement checks conducted one of every seven working shifts.

During baseline, VR percentages for all waitresses were below 10 percent. Increases to 75 percent and higher of VR occurred for all waitresses while only three performed above 50 percent for the remainder of the study. No consistent changes occurred in gratuities received by waitresses throughout the study. There were also no changes in responses to two customer survey questions relevant to VR across
three administrations. Implications to and suggestions for future research in this area are discussed.
ACKNOWLEDGEMENTS

I wish to thank Dr. Howard E. Farris and Dr. William Redmon for all their support and guidance they provided during the course of this project. Appreciation also goes out to my remaining committee members Dr. R. Wayne Fuqua and Dr. Arthur G. Snapper, as well as to my fellow students Steve Rigotzy, Steve Hadden, Leslie Skinner, and Peg Byrd, who were so eager to help in the project's completion. Finally, I would like to thank my wife Mary Lou for her patience while conducting this project.

David B. Lennox
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INTRODUCTION

Previous Studies

Since the first implications that operant techniques may be effective in improving performance of individuals in industrial or business settings (Baer, Wolf & Risley, 1968), management personnel have been examining behavioral principles for contributions they may have to employee performance (Nord, 1969; Luthans & White, 1971; Jablonsky & DeVries, 1972; Schneier, 1973). Nord (1969) was one of the first to review operant principles and thoroughly consider their applications to industrial or business settings. Through comparisons to other theories that have been applied to these settings, he offered support of operant principles and suggested a wide range of areas in which they may be employed. Similarly, Luthan and White (1971) and Jablonsky and DeVries (1972) provided a review of operant principles and supplied specific examples of common problem areas in which operant principles and techniques would be most useful. Schneier (1973) also reviewed the general principles but narrowed his discussion to the applicability to training and performance of "hard-core" unemployed.

Research applications of operant techniques on such problems as low sales (Gupton & Lebow, 1971), tardiness (Hermann, de Montes, Dominguez, Montes & Hopkins, 1973), task completion (Pierce & Risley, 1974) and cash shortages (Marholin & Gray, 1976) have also resulted

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in favorable conclusions. Gupton and Lebow (1971) rearranged contingencies operating for the salesmen of a large telephone company. By making the opportunity to sell a high probability sale item contingent upon selling a low probability sale item, sale of the latter increased by over 10% for one subject and 20% for the other. A return to baseline conditions subsequently resulted in return to near baseline levels. Hermann, et al. (1973) provided monetary bonuses to 12 male employees of a manufacturing firm who had a history of chronic tardiness. Contingent upon arriving at work at the scheduled time, each employee received a slip of paper stating such, which could be exchanged for money at the end of the week. The introduction of treatment demonstrated a sharp decrease in percent of instances of tardiness from 15% to 2.5%. Two subsequent re-introductions of treatment conditions resulted in 1.8 and 2% decreased for 8 and 6.5%, respectively.

Through a procedure which changed an employee pay contingency from "hours worked" to "hours worked," Pierce and Risley (1974) produced a significant change in percentage of tasks completed. Daily task completion temporarily rose from 50 to 75% to 90% when a verbal threat regarding termination was implemented. Following a gradual decrease to baseline percentage levels, the amount paid was made contingent on proportion of tasks completed. This condition increased and maintained task completion at 100% during first and second implementation following a reversal.

Another operant application to a business setting used a group response cost procedure to reduce cash shortages in a small family
restaurant (Marholin & Gray, 1976). By subtracting the total shortage by the number of cashiers, daily shortages dropped from a mean of 4.0 to .43%. After a return to baseline conditions and a subsequent increase in daily shortages (mean 3.73%), the response cost condition was reinstated, dropping the daily shortage to a mean of .04%.

These studies clearly demonstrate the effectiveness of operant procedures on a variety of problems in a variety of industrial and business settings. With the exception of Marholin and Gray (1976) who used response cost, all the applied studies mentioned above employed conditioned reinforcers (sales opportunity, exchangeable notes, posted data).

**Feedback**

One of the most commonly used forms of conditioned reinforcers employed in behavioral research is feedback. Feedback is usually used to provide the subject with information regarding the appropriateness of a response and a desirable change in the data presented commonly results in the presentation of a reinforcing stimulus (although not necessarily; Drabman & Lahey, 1974). It is usually presented as public posting (Hall, Panyon, Rohon, & Broden, 1968; Quilitch, 1975), but has also been in the form of an information note (Hermann, et al., 1973), a verbal statement (Drabman & Lahey, 1974) or a data table (Panyan, Boozer, & Boozer, 1970; Sulzer-Azaroff & de Santa Maria, 1980).

Feedback has been shown to be an effective conditioned reinforcer in increasing many different desirable behaviors and in a variety of
settings. Hall, et al. (1968) provided feedback to increase the frequency of positive verbal consequences given by teachers for student study behaviors. Drabman and Lahey (1974), also in a classroom setting, decreased a student's disruptive behaviors by providing verbal feedback from the teacher at the end of each class period. Panyan, et al. (1970) and Quilitch (1975) employed various forms of feedback in order to improve the performance exhibited by institutional staff. In order to increase the percentage of requested training sessions to be conducted with residents, Panyan, et al. (1970) provided systematic feedback in the form of data sheets to staff members. Quilitch (1975) evaluated the effectiveness of three staff management procedures in increasing the activity level of the residents through staff arrangement of recreational activities. Posting of activity schedules and feedback identifying the activity leader and average of active residents for a given day was demonstrated to be very useful, while the effects of memos and workshops were minimal. Finally, in an industrial setting, Sulzer-Azaroff and de Santa Maria (1980) implemented a "feedback package" which consisted of bi-weekly reports of the location and frequency of hazardous situations, improvement suggestions, and positive evaluative comments, if appropriate. As demonstrated via a multiple baseline design across six departments, intervention was followed by a sharp decrease in hazardous situations and maintained through follow-up.
Customer Service Behaviors

As the use of operant techniques in business and industry increases, behaviors which produce more potential for change and increased profits will generally be those on which to focus. A class of behaviors which falls into this category and may be receiving much attention is customer service behaviors. One of the frequently cited applications of operant techniques to customer service behavior is Emery Air Freight’s use of supervisor praise and feedback to improve the latency with which customer calls were returned by company operators. Although relatively little information is available regarding specific procedures implemented (Business Week, 1971; Feeney, 1972), results indicate a sharp increase in returning calls from a baseline of 30% in the number of customer calls returned in a 90-minute period to 90%.

Komacki, Waddell, and Pierce (1977) employed a treatment package consisting of time-off with pay, feedback in graphic form, and self-recording to increase the frequency of three customer-service behaviors exhibited by grocery store clerks. The mean performance level for location within the store, customer-assistance latency, and shelf restocking increased from 53, 35, and 57% to 86, 87, and 86%, respectively, during four 15-minute daily observation periods. As a result of the treatment consisting of three techniques, it was impossible to identify which element(s) was responsible for the change in behavior.

Komacki and his colleagues (Komacki, Blood, & Holder, 1980) also implemented a program to increase friendliness in a fast food franchise.
After defining friendliness as smiling and talking with customers, three consequences were arranged for appropriate smiling: (1) reminders to observe the immediate consequence of customer's return smiles, (2) feedback via self-recording by employees, and (3) manager praise. This resulted in an increase from 41 to 67% of a daily 15-minute observation session. For talking with customers, three different elements were employed depending on the location, within the restaurant. Role playing was carried out with employees to help identify cues for appropriate responses (when picking up trays, etc.), the second treatment condition consisted of assigned tables and a 5-minute break contingency on talking with at least five customers in one hour. In the third treatment condition, employees were provided with a discussion topic ("table-tent"), to act as a prompt for discussions with customers. The break contingency (condition II) resulted in an increase of 19 to 35%, while role playing and discussion topics (conditions I and II, respectively) were ineffective in increasing the desire response.

As seen by the majority of the research cited above, monetary conditioned reinforcers have been employed alone or in conjunction with other elements in a "treatment package," and have been demonstrated to be effective. The problem with this is that managers of people are resistant to supply monetary incentives in addition to regular wages, and employees are resistant to a rearrangement of the present contingencies upon which wages are based (hourly rate, independent of performance; Gilbert, 1978).

One profession which is presumed to have avoided the common hourly wage contingency, independent of performance, is that of food service.
Gratuities are assumed to be paid to the waiter/waitress contingent on good service. The better the service, it is presumed, the larger the gratuity, and vice-versa. This type of gratuity contingency is more performance dependent than is the hourly wage contingency, but still poses some problems.

One of these problems is the lack of constancy of the size of the check and thus possible differences in the dollar amount of the top. In other words, it is difficult for the employee to determine whether a large (15 percent or more, for example) or small (10 percent or lower) percentage tip has been received unless immediate calculations are executed.

The present study is an attempt to provide such information and determine its effects on performance of a customer service behavior.
METHOD

Subjects

Six waitresses employed at a local restaurant served as subjects (two were subsequently terminated by the employer for reasons independent of the present study). They were randomly selected from a total of 12 waiters/waitresses over two shifts (A.M. and P.M.) that worked a consistently high frequency of mean hours per week (mean = 24.33; range = 20.32 per week). Their ages ranged from 21 to 49 with a mean of 28.33 years. The waitresses had worked for the present employer for a mean of 5.5 years (range = 1.75 to 9), and all had been previously employed as waitresses elsewhere. Their hourly pay during the study remained at $2.33.

Setting

The setting is a family restaurant with a capacity of 215 persons and served an average of 3211 customers weekly through the course of the study. The restaurant employed 55 employees, 23 of which were waiters/waitresses. The price of an entree ranged from $5.25 to $9.95, with a mean of $7.65. The restaurant was 1 of 36 owned by a Michigan corporation.

During open hours, the restaurant is divided into sections containing five to seven tables each. A waitress is assigned to each section and, thus, is responsible for each table in her particular
section. Upon greeting a customer at the door, the host(ess) guides the customer(s) to sections on a rotating basis (i.e. starting at the rear of the restaurant, the host(ess) guides a customer(s) to each section, gradually working through each section until each has a customer, at which time, the sequence begins again). Figure 1 provides an illustration of the restaurant's floor plan with each section identified.

Response Selection

Every three months the restaurant employs an independent research firm to investigate five classes of behavior exhibited by the employees—one of which is customer service behaviors. The class of customer service behavior category is further subdivided into individual behaviors. Customer responses are acquired via randomly distributed surveys and processed to obtain the percentage of customers which responded in a particular way. A percentage is obtained for each class as well as each individual behavior.

Results of a survey administration given just prior to the present study indicated that one of the customer service behaviors—calling the customer by name—occurred with only 10% of the customers surveyed. This percentage resulted in the lowest obtained across all the company's restaurants. For this reason, the management personnel and author agreed on calling the customer by name as the target response.
Response Measures

Two responses were measured during baseline and intervention: Vocal recognition (VR) percentage and tips percentage.

VR Percentage

The percentage of total customers (total number of checks administered) per shift called by name at least once during their stay (prior to check delivery) by an individual waitress was assessed. This was a self-reported measure by each waitress at the time of occurrence. At the top-right corner of the front of each check, there was stamped a box, 1 cm by 1 cm (Figure 2). Each waitress was instructed that if, at any time during the customer's stay she called the customer by name, to place an "X" in the box, and if a correct response had not occurred, to leave the box empty.

Percentage of VRs were calculated the day after each shift worked, in the following way: Total number of boxes marked (VR) divided by the total number of checks administered the same night by each subject. This was then multiplied by 100 to arrive at the VR percentage per shift.

Tip Percentage

A second response measure was the percentage of tips for the total of all checks per waitress, per shift (tip percentage per check). This was also a self-report measure by each waitress. Upon receiving their book of checks at the beginning of the shift, each waitress was
Figure 1. Floor-table diagram with waitress subdivisions.
Figure 1
Figure 2. A customer check showing the prompt line and self-reporting check box.

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**Figure 2**

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supplied with a "Tip Slip" on which they were to record the shift worked, data, and amount of tips received that shift. The tip percentage was calculated the following day by dividing each waitress's total tips by her total customer charges (amount on check) and multiplied by 100.

Customer Survey

As previously noted, an independent research firm is employed every three months to investigate customer satisfaction with regard to customer service behaviors (among others). The survey is randomly distributed by the manager on duty at the completion of the customer's stay. Results are provided in the form of bar graphs indicating percentages of those customers who agreed - yes, or disagreed - no with a particular statement.

Observer Agreement

An independent observer was scheduled an average of every seven shifts worked for each waitress in order to assess the accuracy of self-reporting of VR's. Neither the schedule nor the observers were known to the waitresses, although they had been informed at the outset that such observation would occasionally take place. Observers were randomly scheduled to observe during times in which the restaurant was characteristically the busiest (6:00 - 9:00 p.m.). There were no consequences administered for non-agreement.

Each observer was scheduled for a minimum of one and one-half hours or until four complete interactions (customer arrival to departure)
had taken place. The observer would arrive as a customer and be directed (pre-arranged with the host/hostess) to the particular waitress's section which had been assigned. During the observer's stay the following data were recorded on a 3 by 5 data card (Figure 3), customer's name (if applicable), the time of arrival and departure of each customer, and the waitress's name. (Each observer also participated as a customer.)

**Procedure**

A multiple baseline design across four waitresses was employed. Thus, two conditions were in effect: Baseline condition and a "feedback" condition.

**Baseline**

During baseline, two response measures were being recorded: The VR percentage and tip percentage per check. Data were only recorded on P.M. shifts, Monday through Thursday. Weekend and day shifts were omitted from baseline measurements as well as from intervention procedures as suggested by the manager, due to the large number of customers and rate at which they must be served.

During baseline no changes were made in the waitresses' activities except that of checking the name box (Figure 2) and to report tips at the end of the shift.
Figure 3. Data card on which was recorded vocal recognition occurrences by waitresses of customers.
Figure 3

<table>
<thead>
<tr>
<th>TABLE</th>
<th>CUST. NAME</th>
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START: STOP

DATE: OBSERVER:
**Treatment Condition**

The treatment condition was presented sequentially across four waitresses (the third and fourth waitresses were exposed to the treatment condition at the same time). The treatment condition consisted of three elements: Name prompt, VR feedback, and tip feedback.

**Name prompt.** The prompt element consisted of the presentation of a blank line at the top of each check which served as a prompt to secure the customer's name, a prompt for later use of the name, and for observer agreement-matching purposes. The customer's name was obtained by one of three methods. One, the waitress may have had prior knowledge of the customer's name. Two, the waitress occasionally was required to inquire upon first greeting the customer ("Hi, I'm ______, and your name is _______?"). (This method of acquiring the name of the customer as well as the use of the name were informally rehearsed prior to intervention.)

The third method (and most frequently employed) was arranged by the host/hostess in the following way: After attaining the customer's name upon greeting (not exceptionally unusual since waiting lists are frequent) and guiding him/her to a table, the host/hostess then proceeded to one of the floor-table diagrams (Figure 1). The diagrams were situated in three locations which were frequently attended by the waitress. The name was then transcribed onto the correct table and chair location with an erasable marker. (Note: If the waitress was readily available, the name was communicated vocally.)
VR feedback. The second element of the treatment condition consisted of public posted graphic feedback of the VR percentage. The VR percentage presented graphically was calculated by dividing the number of checks which had been marked divided by the total number of names actually attained (as transcribed on the prompt line), as opposed to dividing by the total number of checks (as in the baseline condition).

A graph with the VR percentage on the ordinate, and the shift worked on the abscissa was designed. Prior to implementation, the graph and its use were thoroughly explained to each waitress individually. The graph was updated each day following a shift worked and the waitress was required to observe it prior to the next P.M. shift worked. The graphs were displayed immediately outside the waitresses' locker room where they were easily seen.

Tip feedback. The last element of the treatment condition consisted of public posted graphic feedback of each waitress's tip percentage per check received for a given shift. A separate percentage for the customers called by name and those not called by name (as indicated by the prompt line) was calculated by dividing the waitresses' total tips received by customers called by name reported by each waitress), by the total charges to that customer, and multiplied by 100. The tip percentage received from customers not called by name was calculated and presented by dividing the remaining tips by the remaining customers' charges and multiplied by 100.

A graph with the tip percentage (called by name and not called by name) on the ordinate and shift worked on the abscissa was designed.
Prior to implementation, the graph and its use were thoroughly explained to each waitress individually. The graph was updated each day following a shift worked and the waitress was required to observe it prior to the next P.M. shift worked. The graphs were displayed immediately outside the waitresses' locker room where they were easily seen.
RESULTS

Interobserver Agreement

As stated in the method section, an independent observer was scheduled to assess the accuracy of waitresses' self-reports on an average of every seven sessions. A total of 14 observation sessions were conducted: Five with Alice and three with each of Patrice, Kay, and Karen. Forty-three interactions between waitress and customer were observed and scored. Observer agreement was computed for each individual waitress and for all waitresses as a group by using two methods: Occurrence agreement and non-occurrence methods. Occurrence agreement was calculated by dividing the intervals which were scored as a VR by both the waitress and observer (agreement), by the total of agreements plus those intervals in which a VR was scored by either the waitress or observer and not by the other (disagreements). This value was then multiplied by 100.

\[
\frac{\text{Agreements}}{\text{Agreements} + \text{Disagreements}} \times 100 = \text{Occurrence agreement percentage}
\]

Interobserver agreement mean for Alice was 80% (8/10; range 50-100%), for Patrice was 0% (0/1), for Kay 100% (1/1), and for Karen was 100% (2/2). As a group, interobserver agreement for occurrence resulted in 78.57% (11/14; range 0-100%).

The non-occurrence agreement method was calculated by dividing the agreements of a non-occurrence by the total of agreements and
disagreements. This value was then multiplied by 100.

\[
\frac{\text{Agreements}}{\text{Agreements} + \text{Disagreements}} \times 100 = \text{non-occurrence agreement method}
\]

Interobserver agreement calculated with this method resulted in an agreement percentage for Alice of 40% (2/5; range 0-100), for Patrice 90.90% (10/11; range 66.66-100.00%), for Kay 100.00% (10/10), and for Karen 100.00% (7/7). The group interobserver agreement for non-occurrence resulted in 87.87% (29/33; range 40-100.00%)

**Individual Data**

Figure 4 presents the vocal recognition percentage for a given session across baseline and treatment conditions, for each waitress. Figure 5 presents the percentage of tips obtained for a given session across baseline and treatment conditions for each waitress.

**Alice**

As presented in Figure 4, the baseline conditions for Alice were in effect across 9 sessions, while intervention conditions were in effect for 28 sessions. During baseline, Alice served a total of 167 customers, with a mean of 18.55 per session and a range of 10-28. While the treatment conditions were in effect a total of 490 customers were served with a mean of 17.5 per session and a range of 12-27.

As seen in Figure 4, Alice's VR percentage (percent of customers called by name per session) was very low while baseline conditions were in effect. Only one customer was called by name. (It should be
Figure 4. Vocal recognition percentage (by session) for four waitresses across baseline and treatment conditions.
Figure 4

![Graph showing baseline and treatment responses for Alice, Patrice, Kay, and Karen across consecutive sessions.](image-url)
Figure 5. Tip percentage (by session) for four waitresses across baseline and treatment conditions.
Figure 5

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noted that during baseline conditions, for all waitresses, no provisions were arranged to obtain the name of the customer. Thus, the waitresses were required to utilize their own methods - i.e. asking, previous knowledge - to obtain the customer's name.) The mean VR percentage during baseline was .6% with a range of 0-4.17%. At session 10, treatment conditions were introduced to Alice (name prompt, VR percentage feedback and tip percentage feedback), and her VR percentage increased sharply. In addition to the treatment conditions, Alice was vocally prompted by the author to use the names. This extra vocal prompt was implemented on the first three sessions of the treatment conditions for all waitresses, so as to allow each to come into contact with the anticipated consequences (positive feedback). Had this element not been added, it could have been the case that a waitress would not have increased her VR percentage enough, or at all, to result in a tip percentage increase or, obviously, a VR percentage increase (both for feedback purposes).

After terminating the vocal prompt element, Alice maintained her high VR percentage for most of the experiment. Only three sessions dropped below 100% (23, 26, and 27). The resulting VR frequency total was 268, with a mean of 9.57 per session and a range of 2-17. Alice's VR percentage mean was 98.53% per session and a range of 71.4-100.00%. The total number of names actually attained was 272, with a mean of 9.71 per session and a range of 2-17. The mean percentage of names actually attained was 55.5% with a range of 7.4-100.00%.

Figure 5 presents the tip percentage attained by Alice across baseline and treatment conditions. As indicated, there was no
observable change in tip percentage from baseline to treatment conditions. Baseline tips percentage had a mean of 12.6% with a range of 10.9-13.9%, while treatment conditions had a mean of 12.9% with a range of 9.27-15.6%.

Due to the lack of an observable change in tip percentage from baseline to treatment conditions, an additional change was made in the tip percentage feedback provided to waitresses. In order to increase the sensitivity of the tip percentage feedback to any changes in customer tipping behavior as a result of a change in waitress VR percentage, the tip percentage was subdivided into two types of feedback: Tip percentage from those customers with whom a VR did occur, and the tip percentage from those customers with whom a VR did not occur. Again, there was no observable difference. The tip percentage mean for VR customers was 12.33% with a range of 10.25-13.5%, while the tip percentage mean for no VR customers was 12.65% with a range of 8.85-1.62%.

Patrice

As presented in Figure 4, the baseline conditions for Patrice were in effect for 13 sessions and the treatment conditions for 7 sessions. Patrice served 232 customers during baseline with a mean of 17.85 per session and a range of 7-26, and 104 customers during treatment with a mean of 14.86 and a range of 8-18.

Patrice exhibited a slightly higher VR frequency (four) during baseline than Alice, but still with a low VR percentage mean of 1.72% and a range of 0-14.28%. Treatment conditions were introduced to
Patrice on session 14, which led to a gradual increase to 100.00% by session 16. After terminating the vocal prompt element, Patrice's VR percentage dropped sharply to zero and remained therefor the rest of the experiment. The VR frequency total was 8 with a mean of 1.14 per session and a range of 0–4. The mean VR percentage during treatment was 22.2% with a range of 0–100.00%. The total number of names actually attained by Patrice was 36 with a mean of 5.14 and a range of 17.65–50.00%.

Figure 5 presents Patrice's tip percentage across baseline and treatment conditions. The mean tip percentage for baseline was 11.95% and 12.16% for treatment with ranges of 9.85–15.4% and 9.75–15.1%, respectively. As with Alice, there seems to be no observable difference in the tip percentage between baseline and treatment conditions. Also, since the separation of VR and no VR customer tip percentage feedback had not been implemented for Patrice until session 17, after which no VR's were exhibited, no such data were made available.

Kay

As presented in Figure 4, Kay was under baseline conditions for 15 sessions, during which she served 314 customers with a mean of 20.93 per session and a range of 7.26. Treatment conditions for Kay were in effect for 5 sessions during which 83 customers were waited on, with a mean of 16.6 per session and a range of 14.19.

During baseline, Kay exhibited a total frequency of 4 VR's which resulted in a VR percentage mean of 1.27% and a range of 0–5.00%. Upon the introduction of treatment conditions (session 16), Kay's VR
percentage dropped to 62.5% and stayed within the boundaries of 50.00 and 67.00% the remainder of the study. The resulting VR frequency is 24 with a mean of 4.8 per session and a range of 4-7. The mean VR percentage for treatment condition is 68.75% with a range of 50.00-100.00%. The total number of names actually attained by Kay was 35 with a mean of 7 per session and a range of 4-9. The mean percentage of names actually attained was 42.17% with a range of 28.57-52.9%.

Figure 5 provides the tip percentage obtained by Kay across baseline and treatment conditions. Kay's mean tip percentage for baseline was 11.79% with a range of 8.51-14.99%, while the mean tip percentage for treatment was 13.58% with a range of 11.66-15.18%. Unlike Alice and Patrice, there seems to be significant difference between baseline and treatment conditions. Further analysis, though, seems to indicate that the increase in tip percentage was probably due to other variables. The mean tip percentage for VR customers is 13.66% with respective ranges of 11.55-15.5% and 12.1-14.71%. The resulting difference between VR and no VR customers tip percentages is only .56%.

Karen

Karen was under baseline conditions for 13 sessions and under treatment conditions for 5 sessions, as seen in Figure 4. During baseline conditions, Karen served a total of 253 customers for a mean of 19.46 per session and a range of 12.28. While treatment conditions were in effect, 86 customers were served resulting in a mean of 17.2 customers per session and a range of 13.21.
Unlike the other waitresses, Karen failed to exhibit a VR during baseline. Upon introduction of treatment conditions (session 14), Karen's VR percentage increased sharply to 100.00% for sessions 14 and 15. Similar to Kay's data, Karen's VR percentage dropped to 75.00% before the vocal prompt element was terminated. Her VR percentage stayed within the boundaries of 75 and 88% the remainder of the study. The VR total frequency for treatment conditions was 25 with a mean of 5 per session and a range of 3-7. The resulting mean VR percentage was 89.28% with a range of 75.00-100.00%. The total number of names actually attained by Karen was 28 with a mean of 5.6 per session and a range of 4-8. The resulting mean percentage of names actually attained was 32.55% with a range of 28.57-46.15%.

Figure 5 provides the tip percentage attained by Karen throughout baseline and treatment conditions. Her mean tip percentage for baseline was 12.34% and for treatment 12.89% with a range of 10.08-15.19% and 11.01-15.56%, respectively. Again, there seems to be no significant differences between baseline and treatment conditions. There also seems to be no significant differences between VR and no VR customers. The mean tip percentage for VR customers is 12.7% with a range of 11.36-14.5%, while the mean tip percentage for no VR customers was 13.32% with a range of 10.46-16.9%.

**Customer Survey**

The survey administrations were given just prior to and during the course of the present study: March, June (2nd week), and September (12th week). Two survey questions were selected as being most relevant.
to the present study. The questions customer responses are presented in Figure 6.

In response to the first statement - "Someone here at ________ knows my name, something about me, or can at least recognize my face" - 14% (252 customers surveyed) of the customers agreed in the March administration, 17% (225 surveyed) in June, and 12% (209 surveyed) in September. As illustrated in Figure 6, no significant changes in responding occurred during the course of the study. In response to the second statement - "Someone at ________ called me by name today" - 10% (252 surveyed) of the customers agreed in March, 12% (226 surveyed) in June, and 10% (210 surveyed) in September. Again, no significant changes in responding resulted.
Figure 6. The frequency of surveyed customers of each administration and the percentage of customers agreeing with survey statements.
35%

...recognize my face.

Percent Agreeing Customers

30%

...called me by name.

Survey Administration

Figure 6

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DISCUSSION

As observed in Figure 4, significant increases in vocal recognition were made by all waitresses upon introduction of treatment conditions. These increases clearly demonstrate functional control of treatment conditions over VR percentage as a result of changes only occurring upon intervention. Further, these increases were maintained at levels of 50% above baseline responding throughout the remainder of the study, for three of the four waitresses. However, although significant increases in the target response made by each waitress (for at least the first three treatment sessions), further analysis is required to identify the individual components of the treatment condition which were responsible for these changes. Examination of the individual components will help reveal the individual controlling components.

As stated in the introduction, the present study was an attempt to utilize existing monetary incentives (tips) obtained by waitresses to increase vocal recognition of customers. Feedback of tip percentage was provided to waitresses in graphic form after each session. In this way, waitresses could compare tips obtained in baseline conditions to those obtained in treatment conditions. Thus, consistent changes in tips following the emission of higher percentage of VR's would presumably function as a reinforcer and maintain the VR's at a high percentage.

Analysis of the tip percentage feedback indicated that this is probably not the case. As illustrated in Figure 5, no consistent trends
can be observed in the tip percentage as a result of changes in VR. This finding holds true for all waitresses. Indeed, for one waitress (Kay), in four out of five instances (sessions 16-19), customer tip percentage for those with whom a VR occurred were lower than those with whom a VR did not occur.

It seems to be the case, then, that tips were not sensitive to changes in vocal recognition, as defined in the present application. Thus, although the objective of the study was met (an increase in VR percentage), the tip percentage feedback was probably not a controlling component of the treatment condition.

The role of experimenter prompt as a controlling variable poses two important questions as to its effect on VR responding. First, did the prompt function as a "consequence contact tool"? In other words, did it allow the waitresses to come into contact with anticipated consequences (tip feedback, VR feedback) as a result of increasing VR's? Generally speaking, all waitresses increased and/or maintained their VR percentages above baseline levels for the first three sessions of treatment. Thus, it was effective as a contact tool by making available contrived consequences and naturally occurring reinforcing consequences (VR percentage and tip percentage feedback).

A second question is the effect, if any, it had on subsequent responding by the waitresses. From a theoretical standpoint, if the prompt was followed by a correct response and immediate reinforcement, and this contingency occurred repeatedly, the prompt should acquire control over the response. However, should the prompt be terminated abruptly, before other prompts have a chance to acquire control (name
acquisition), early in the response acquisition process, or if conse­quences fail to function as conditioned reinforcers, the response may fail to occur in the future (Craighead, Kazdin, & Mahoney, 1976). This phenomenon seems indicative of Patrice's failure to emit any target responses after the termination of the experimenter prompt, although no definitive conclusions can be drawn. A more detailed analysis of the number of VR's that occurred as compared to the number of customers served by Patrice shows that only 16.67% (8/48) of customers were called by name. This low percentage indicates that the experimenter prompt and subsequent "consequence contact" was infrequently employed and seems to further support the conclusion that transfer of stimulus control was minimal.

Conversely, the percentages of customers with whom the experiment prompt was utilized and, subsequently, reinforced for the other three waitresses can account for the maintenance of their VR responding.

Upon ruling out the possibility of functional control that tip percentage feedback provided, it can be concluded that customer name acquisition (by the waitress or host/hostess) in conjunction with VR percentage feedback was chiefly responsible for target response mainte­nance. Of course, it is difficult to isolate which of these was more effective in controlling the response. The acquisition of the customer's name can be assumed to have acquired control over the target response through its consistent pairing with the experimenter prompt and subsequent positive consequences. It also provided a solution to the reported aversiveness to the waitresses of asking the customer his/her name.
The VR percentage feedback provided positive consequences (increase in graphically presented data) to the waitresses for emitting a high percentage of VRs. Similar findings were also obtained by Komacki and her colleagues (Komacki et al., 1980; Komacki et al., 1977), who provided positive consequences in the form of graphic feedback for similar customer services behaviors.

In addition to the positive consequences provided by VR percentage feedback, Komacki et al. (1980) also suggest the possibility of natural, more immediate positive social consequences that may affect a customer service behavior such as vocal recognition. Among these are (1) a reciprocal response such as calling the waitress by name in return, (2) an increase in responses often labeled "friendliness" (i.e., smiling, tonal changes, etc.), and/or (3) subsequent inquiries by the customer regarding name acquisition and its purpose. Upon occasional questioning of waitresses concerning the possible occurrence of such customer responses, all waitresses reported that all three customer responses had occurred frequently.

This issue proposes another which should be addressed: Customer satisfaction. As indicated in Figure 6, no significant changes occurred in customer satisfaction as measured by the customer survey (designed and analyzed by the restaurant's consulting firm). As revealed by customer replies to the questions relevant to the present study, no significant changes occurred in either the percentage of customers recognized (March, 15%; second week, 17%; twelfth week, 13%) or in the percentage of customer actually called by name (March, 10%; second week, 12%; twelfth week, 11%). However, it is important to note that
these questions do not directly address the "satisfaction" of the customers stay, but have been determined by the designers (method unknown), and are interpreted as such. Due to these inconsistencies, the results and interpretations of these data are somewhat equivocal.

There are several issues which have not yet been examined with respect to the present study. The first deals with the nature and evaluation of self-report data. Nelson (1977) has reported that when using self-report measures it is necessary to consider any reactive effects that may exist. In other words, it is very likely that the act of self-reporting itself may affect desirable changes in the target response. In fact, the establishment of a stable baseline still may not be a "true" baseline if the self-reporting is the only viable method of collecting baseline data. However, it will provide a comparison point to assess the effects of another intervention condition.

The applicability of the reactivity issue to the present study is probably minimal. This conclusion can be drawn due to the near non-existent levels of responding during baseline. Reactivity in this case, had it been influential, would have presumably increased the target response during baseline. Since this did not occur during recording, and responding began and remained at near zero levels, it can be concluded that the self-report method had no effect on the target response.

Related to the issue of self-reporting is that of the obtained interobserver agreement values. Two calculations yielded very low agreement percentages (0% for Patrice, occurrence method; 40% for Alice, non-occurrence method). It can also be seen that there were very few observed responses in these instances (0/1 and 2/5, respectively).
This fact increases the possibility of deflated agreement values and, thus, accounts for the low agreement values obtained.

Another issue which should be resolved is that of customer satisfaction, and the social value of the results obtained. As discussed earlier, the customer survey employed by the restaurant's consulting firm can do nothing more than provide ambiguous conclusions. Customer satisfaction with a VR occurrence also cannot be evaluated through analysis of tip percentage data, since no changes occurred. Several additions to the present study may prove to be useful.

One technique that could be employed in the future administrations of the present survey, would be to separate those surveys completed by those customers with whom a VR did occur, from those surveys completed by customers with whom a VR did not occur. In this way, the question of visual recognition and vocal recognition could be more easily assessed.

A second technique which may prove helpful is the administration of a supplementary survey (only to VR customers) which directly assesses customer agreeableness with a VR. For instance, questions similar to "do you enjoy being called by name by your waitress?" would provide far more information concerning customer "satisfaction" than does "did someone call you by name today?". Although, this would have been useful information in the present study, and will be valuable for future applications, management constraints were imposed regarding a supplementary survey.

A third issue considers the frequency of VR's occurring with an individual customer and the optimal frequency. Van Houten (1979)
suggests that there are optimal ranges within which most behaviors should occur. For instance, there may exist low or high frequencies at which the behavior may occur, but these frequencies may not be valuable in terms of optimal functional value. With reference to the present study, it may be that three or four VR's with each customer may be effective in increasing customer satisfaction and, consequently, tip percentage. While, conversely, one or two occurrences or more than four may have no effect or, in fact, be deleterious. Unfortunately, no such data were taken in the present study, but should be considered for future applications of similar concerns.

A fourth issue which may be of concern with the present study is that of the contingencies placed on employees for participation and desirable behavior changes. All behaviors engaged in by the subjects employed were entirely voluntary, with no explicit or implicit contingencies placed on them by the management. Any reasons for termination of employees in any way associated with the study, were immediately and clearly stated to the other participants, so as to reassert the absence of management contingencies.

The last point to be considered is that of practicality of the method employed. Great care was taken not to disrupt the ongoing operation of the business setting in which the study occurred. All behaviors which were required of employees (name acquisition by host/hostess, self-reporting) were made as simple as possible to carry-out for the employees. In addition, the minimal cost and preparation of materials necessary were arranged by the experimenter. Data preparation and posting also was of minimal cost and disruption. Thus, practicality
of the present study proved not to be a problem.

The present study was successful in producing a change in vocal recognition of customers by waitresses, through the implementation of a three-component treatment condition. A clear functional relationship was demonstrated through the use of a multiple baseline across four waitresses. Changes in responding occurred immediately after implementation and were maintained for three out of four waitresses for the remainder of the study.
BIBLIOGRAPHY


