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PREINTERVENTION ANALYSIS AND IMPROVEMENT OF CUSTOMER GREETING IN A RESTAURANT

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We examined customer greeting by employees at one location of a sandwich restaurant chain. First, a preintervention analysis was conducted to determine the conditions under which greeting a customer within 3 s of his or her entry into the restaurant did and did not occur. Results suggested that an appropriate customer greeting was most likely to occur when a door chime was used to indicate that a customer had entered the store and when the store manager was present behind the service counter. Next, a performance improvement intervention, which consisted of the combination of the use of a door chime and manager presence, was evaluated. Results showed that during baseline, a mean of 6% of customers were greeted; during intervention a mean of 63% of customers were greeted. The addition of manager-delivered verbal and graphic group feedback resulted in 100% of customers being greeted across two consecutive sessions.

DESCRIPTORS: customer greeting, graphic feedback, organizational behavior management, preintervention analysis, verbal feedback

Interactions with customers in retail and restaurant settings have the potential to influence customer satisfaction and therefore future business. One type of interaction, greeting customers as they enter the store, may be particularly important because it has the potential to influence the quality of interactions for the remainder of the customer's time at the establishment. Previous research (Brown & Sulzer-Azaroff, 1994) in organizational behavior management (OBM) has demonstrated that appropriate greeting of customers can be increased by providing performance feedback to employees. However, no research has examined the antecedent conditions under which greeting by employees is more or less likely to occur.

Functional assessment methodology has been employed in multiple settings, with many target behaviors, and with a variety of populations since the early 1980s. However, one area of behavior analysis in which functional assessment methods have just begun to be used is OBM. To date, informant and descriptive methods of functional assessment have been used to identify variables that contribute to performance deficits among employees. For example, Austin, Weatherly, and Gravina (2005) used the Performance Diagnostic Checklist (Austin, 2000) to evaluate the variables that contributed to incomplete cleaning tasks among employees at a restaurant. In another study, Green, Reid, Perkins, and Gardner (1991) used a descriptive analysis to examine the most appropriate time to implement a performance improvement intervention to increase the provision of habilitative services by staff at a facility for adults with mental retardation. However, very little OBM research exists on the use of functional assessment methods in which variables are actually manipulated. The purpose of this study was to examine the utility of a preintervention analysis in which antecedents were manipulated to investigate the conditions under which customer greetings were likely to occur and to identify an intervention to increase customer greeting in a restaurant.

This report is based on a thesis submitted by the first author in partial fulfillment of the requirements for the MS degree in applied behavior analysis at the Florida Institute of Technology. We thank the manager of the restaurant for his cooperation.

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METHOD

Participants and Setting

The study took place at one location of a sandwich restaurant chain in medium-sized city in the southern United States. In addition to the manager of the restaurant (who participated as a confederate), all 9 employees participated in the study. Participants ranged in age from 18 to 55 and included 2 men and 7 women. The duration of their employment at the restaurant varied between 2 months and 3 years.

Data Collection and Reliability

It was restaurant policy that customers were to be greeted within 3 s of entering the store. At the time of their hiring, each employee received brief instructions regarding when and how to greet customers. Although employees had been instructed to greet customers and were often prompted to do so, the manager reported that customer greeting was very inconsistent. An opening greeting was defined as any verbal acknowledgment given by an employee to a customer within 3 s of a customer's entry. Some examples of opening greetings include, ''Hello,'' ''What can I get you?,'' and ''I will be right with you.'' The specific dependent measure was the percentage of customers who received an opening greeting from an employee within 3 s of entering the restaurant. Three to 4 employees were behind the service counter at all times and were responsible for greeting customers.

Sessions were conducted in which data on opening greetings were collected on 30 customers entering the restaurant or for 60 min, whichever came first. The mean number of customers for which calculations were made across both the assessment and intervention evaluation was 20 (range, 9 to 30; $SD = 6$). When a customer had both feet inside the door, the observers started a stopwatch to determine latency to customer greeting (i.e., whether or not a greeting was emitted within 3 s). The name of the employee who greeted each customer was also recorded. Groups of customers entering the restaurant together were counted as a single customer for data-collection purposes. Sessions were conducted 7 days per week at various times of the day. Data collectors sat at restaurant tables, appearing to read while concealing their data sheets and stopwatches. The employees were not aware of the observers at any point during the study.

To assess interobserver agreement, a second observer independently collected data during 25% of antecedent analysis sessions and 40% of intervention evaluation sessions. Occurrence agreement (i.e., whether a greeting was delivered within 3 s of customer entry) was examined by comparing observers' records. Agreement was assessed by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100%. Mean agreement values were 95% (range, 90% to 100%) for the antecedent assessment and 90% (range, 87% to 96%) for the intervention evaluation.

Procedure

Preintervention analysis. A preintervention analysis in which antecedents were manipulated (e.g., see Carr & Durand, 1985) was employed to determine the conditions that occasioned timely customer greetings. Five antecedent conditions were examined: uncontrolled, manager presence, radio, door chime, and control. These conditions were chosen based on a discussion with the manager regarding variables likely to influence greeting by employees. During the uncontrolled condition, no programmed manipulations were conducted. The antecedent conditions were free to vary. Manager presence consisted of the manager being present behind the service counter of the restaurant; the radio and door chime were not operating during this condition. During the radio-on condition, the radio (which was located behind the service counter) was on at normal volume, and the manager and the door

chime were absent. The door-chime condition consisted of the presence of a door chime that sounded when the door opened; the manager and the radio were absent during this condition. Finally, for the control condition, the manager, radio, and door chime were absent. Each condition was conducted three times, and the order in which the conditions were conducted was determined randomly. A multielement design was used to evaluate the results of the analysis. All employees participated in at least one session of each analysis condition. For the conditions in which the manager was present (i.e., some uncontrolled conditions, all manager-present conditions), the manager did not prompt employees to greet customers and greeted customers himself only once or twice per session. This was done so that employees would not suspect that something had changed when the study began; prior to the study, the manager greeted customers frequently. In addition, greetings by the manager were not included in the calculation of the data (i.e., the percentage-of-greetings measure reflects greetings by employees only).

Intervention evaluation. Based on the results of the preintervention analysis, an intervention evaluation consisting of both the presence of the manager and the door chime was conducted in an ABABC reversal design. During baseline, antecedent conditions were free to vary. This condition was identical to the uncontrolled condition of the preintervention analysis. During the manager plus chime condition, the manager was present behind the service counter and the door chime was working. Because this condition did not produce acceptable levels of greeting by employees, manager-delivered verbal and graphic group feedback was added in the final phase. In this phase, immediately after each session, the manager graphed the percentage of customers who were greeted within 3 s (a data collector provided this information). Within 5 min of the end of each session, the manager individually showed all employees a graph that depicted the data point for that session. If the value was equal to or greater than the previous session, the manager praised the group (e.g., "The data look great; you guys did well!"); if the value was less than the previous session, no formal verbal feedback was delivered.

To prevent bias from differential sampling (i.e., measuring only "poor" greeters during baseline and only "good" greeters during intervention), data from employees who were present only during baseline or only during the intervention phases were not included in the calculations. Data from 2 employees were excluded from the analysis on this basis. The remaining employees served in both baseline and intervention phases an equal percentage of times. As in the preintervention analysis, during the intervention evaluation the manager did not prompt employees to greet customers and only greeted customers once or twice per session. Greetings by the manager were not included in the calculation of the data.

RESULTS AND DISCUSSION

The top panel of Figure 1 depicts the results of the preintervention analysis. During the door-chime condition, a mean of 44% of customers were greeted within 3 s (range, 40% to 48%; $SD = 4\%$) of entering the store. During the manager-present condition, a mean of 21% of customers were greeted within 3 s (range, 8% to 32%; $SD = 12\%$). During the control condition, a mean of 6% of customers were greeted within 3 s (range, 0% to 18%; $SD = 10\%$). In the uncontrolled condition, a mean of 5% of customers were greeted within 3 s (range, 0% to 10%; $SD = 5\%$). Finally, during the radio condition, 0% of customers were greeted within 3 s.

The lower panel of Figure 1 presents the results of the intervention evaluation. During the first baseline phase, a mean of 2% (range, 0% to 11%; $SD = 4\%$) of customers were greeted within 3 s of entering the restaurant.

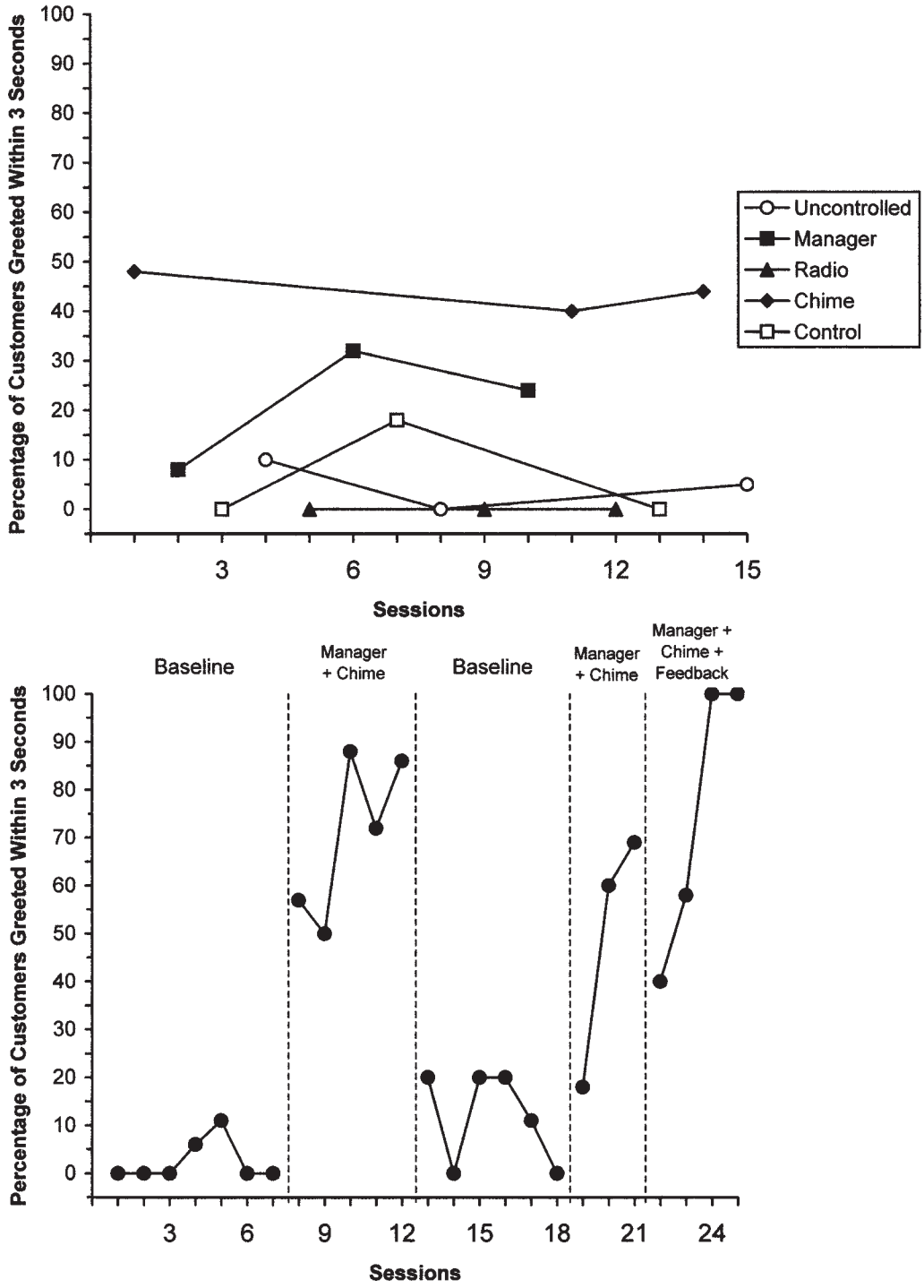

Figure 1. Percentage of customer greeting by employees within 3 s across the various conditions of the preintervention analysis (top) and percentage of customer greeting by employees within 3 s across the intervention evaluation (bottom).

During the first manager plus chime phase, a mean of 71% (range, 50% to 88%; *SD* = 17%) of customers were greeted within 3 s. During the return to baseline phase, a mean of 10% (range, 0% to 20%; *SD* = 11%) of customers were greeted within 3 s. During the second manager plus chime phase, a mean of 49% (range, 18% to 69%; *SD* = 27%) of customers were greeted within 3 s. Finally, during the manager plus chime plus verbal and graphic feedback phase, a mean of 75% (range, 40% to 100%; *SD* = 30%) of customers were greeted within 3 s.

In addition to data on the percentage of customers greeted, data on individual employee greetings were also collected. These data suggest that greeting by employees was greater in conditions in which the manager was present and the door chime was being used. That is, individual employee greeting generally matched the data on overall percentage of customers greeted. However, there were exceptions. For example, employees who worked less often were less likely than other employees to greet during the manager-present condition of the preintervention analysis and the manager plus door chime phase of the intervention evaluation.

Results of the preintervention analysis suggest that greetings were most likely when a door chime was used to indicate that a customer had entered the restaurant and when a manager was present behind the service counter. Based on this analysis, an intervention consisting of the combination of the use of a door chime and the presence of the manager behind the service counter produced substantial increases in customer greeting by employees. However, customer greeting was still less than ideal, so manager-delivered verbal and graphic feedback was added to the intervention. This addition resulted in sustained customer greeting at high levels.

The addition of feedback to the intervention package enabled a partial component analysis of the initial antecedent-based intervention. Although the antecedent-only package increased customer greeting substantially, a consequence-based intervention (i.e., feedback) was necessary to achieve peak sustained levels of greeting. Additional research on the relative contributions of antecedent- and consequence-based intervention components in OBM is needed.

These results provide a model of noninformant-based functional assessment in an organizational setting. Future research should examine the use of additional functional assessment methods, such as experimental analysis, when conducting behavioral assessment in organizations.

The manager reported that his increased time behind the service counter was the only substantial cost associated with the intervention. The door chime had already been installed, but installation would be an additional nominal cost. The manager of the restaurant reported that he continued to be present behind the counter as much as possible, use the door chime, and deliver feedback to employees after the study concluded. Future research should also include follow-up data on maintenance of intervention gains in organizational settings.

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