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**Proximity to Or Progress Toward Receiving a Telephone Service? an Experimental Investigation of Customer Reactions to Features of Telephone Auditory Messages**

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Using an experimental simulation we examined caller reactions to features of telephone auditory messages. Callers waiting on hold received information about their location in the queue (number of people ahead of them). Caller reactions measured were level of satisfaction and abandonment rate. The experimental design held the duration of the wait constant, and created two queue lengths (long and short) and two update frequencies (high and low). Results show that longer queues lead to more satisfaction but also to higher abandonment than shorter queues. The effects of queue length on satisfaction and persistence were explained through sense of progress and sense of proximity, respectively, of the people waiting.

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# Proximity to or Progress toward Receiving a Telephone Service? An Experimental Investigation of Customer Reactions to Features of Telephone Auditory Messages

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## EXTENDED ABSTRACT

Telephone waiting is an undesirable experience for most customers and can negatively impact service evaluations (Katz, Larson, & Larson, 1991), but is often unavoidable because of staffing costs (Hall, 1991) and the inability to predict service demand (Zeithaml, Parasuraman and Berry, 1990). Customer reactions to waiting can have significant business implications, calling for attention to factors that may mitigate negative reactions to queues and waiting. In telephone waiting, auditory messages through the telephone system are the primary means by which firms can facilitate waiting. Auditory messages are a sole source of information during telephone waiting and thus are a key for shaping customer reactions. Yet research on the effects of auditory messages on caller behavior is very limited.

Aiming to fill this gap, we investigated customer reactions to auditory messages, concentrating on messages that provide information about location in the queue. We assume that firms can manage queue perception and thus reactions to waiting through manipulating the information provided to customers about the queue. Specifically, information provided can help to create two types of psychological frames for people waiting in a telephone queues: A progress oriented frame, and a proximity to the service oriented one. Our prediction is that these frames can differently affect customer reactions. We compare and contrast predictions, drawn from these two frames, and argue that a sense of progress approach affords more accurate predictions of caller attitudes, whereas a sense of proximity frame offers a better approximation of caller behavior.

Our analysis introduces goal proximity as a critical variable for understanding people's reactions to queue length. The logic of proximity to a goal suggests —assuming that the duration of waiting is identical— that shorter queues will make people feel greater goal proximity than longer queues. Thus, queue length—or the number of people ahead of a customer in a queue—is predicted to influence the level of proximity a waiting customer senses.

At the same time previous research has demonstrated that actual long distance from the goal—or low goal proximity—creates frustration and dissatisfaction, whereas high goal proximity causes people to invest higher effort in pursuing their goals (Kivetz, Urminsky, & Zheng, 2006). This implies that telephone queues that induce a higher (vs. lower) sense of goal proximity will induce greater satisfaction in and lead to more queue persistence of callers.

An alternative perspective for analyzing effects of telephone queues is people's sense of progress, as introduced by Munichor & Rafaeli, 2007). This perspective can lead to predictions that contradict those of goal proximity since— assuming equal duration of a wait—longer queues must also be faster. Thus, a sense of progress perspective suggests that people in a longer queue (vs. in a shorter queue of the same waiting time) will feel a greater sense of progress. Sense of progress is known from previous research to motivate people, so we can suggest that queues that induce a higher sense of progress will lead to better customer reactions in terms of satisfaction and queue persistence.

Message update frequency—or the number of times a customer hears a message while waiting—is also a salient attribute of a telephone system that has not been previously examined. We

suggest that rapid updates emphasize to people whether a queue progresses quickly or slowly, and therefore moderate the relationship between progress rate in a queue and callers' sense of progress.

We examined our predictions using an experimental simulation of telephone waiting, in which we measure customers' reactions to auditory messages. The simulation provided the callers with information about their position in the queue while holding the duration of the waiting constant. Furthermore, this infrastructure allowed accurate measurement of caller satisfaction and queue persistence (as opposed to abandonment) rate. Our between subject experimental design created two queue lengths (long and short) and two update frequencies (high and low). This design enabled the examination of the two suggested psychological orientations of people in queues: Sense of progress orientation was manipulated through informing callers that the line they have joined is long (i.e. 'your position in the line is 9') and progressing them rapidly (i.e. every 18 seconds, which add up to three minutes of waiting). Sense of proximity orientation was manipulated through informing callers that the line they have joined is short (i.e., 'your position in the line is 2') and progressing them slowly (i.e., every 90 seconds, which add up to 3 minutes of waiting).

The findings support our predictions regarding the previously unexamined idea that customers' reactions to a telephone waiting are influenced by the way they perceive their progress or proximity to the end of the queue. The findings show that the same message may affect callers' satisfaction and behavior in contradictory ways that depend on the way the message is being used: callers are more (less) satisfied but are (more) less persistent in a (proximity) progress oriented queue. Our analysis suggests an explanation for this apparent contradiction. According to our analysis the two dimensions of customer reactions—behavior and satisfaction—are influenced by separate mechanisms—sense of progress influences satisfaction while sense of proximity influences persistence.

Specifically, our findings show that–in queues with equal duration—a progress (proximity) oriented queue leads customers to report high (low) satisfaction through affecting their sense of progress, while simultaneously lead them to be less (more) persistent in the queue, through affecting their sense of goal proximity. Furthermore, the queue orientation, which influences sense of progress and satisfaction in a condition of high frequency updates, does not have this influence in a condition of low frequency updates. This finding suggests on a moderating effect of update frequency on the relationship between queue orientation and caller sense of progress.

Integration of our findings with current literature concerning physical waiting environment allows us to propose the concept of *auditory waiting environment* as a key feature of the waiting situation. This concept broadens the previous literature focus on time fillers (Munichor and Rafaeli, 2007). The concept also suggests that analyses of telephone queues and waiting can embed multiple psychological dimensions that can be manipulated through telephone messages, which expands the role of recorded messages.

In an experiment that followed the one reported above, participants in the simulation experiment were contacted two days after the original experiment and were asked for their retrospective satisfaction. Their reports supported the original findings. This

support helps to affirm our suggestion that the auditory waiting environment design as a key influence on customer satisfaction.

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