

Virtual boundaries: How environmental cues affect motivation and task-oriented behavior

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Much of our daily lives are spent completing tasks that involve a degree of waiting, such as remaining on hold while scheduling a doctor's appointment or standing in line at an ATM. Faced with a wait, some people postpone, avoid, or abandon their task. Others endure the wait but feel dissatisfied and frustrated by the experience.

Are there ways to improve our outlook and mindset while waiting? A new study shows that seemingly irrelevant environmental cues—such as queue guides, or barriers commonly used in banks and airports—can serve as virtual boundaries that divide those waiting into two categories: those who are inside the system and those who are outside the system. In several experiments, Leonard Lee, associate professor of marketing at Columbia Business School, working with Min Zhao and Dilip Soman of the University of Toronto's Rotman School of Management, showed that in-system individuals demonstrate increased action initiation, [persistence](#) in completing tasks, and overall optimism.

Prior studies have shown that situational cues can have a significant impact on behavior. For example, playing French music in a wine shop has been shown to increase purchases of French wine. This new research shows that even cues that are not directly related to an individual's goal can have a substantial effect in a task environment, influencing cognition and the subsequent manner in which the task is completed.

Consciously and unconsciously, people tend to locate physical markers in their environments to create and define boundaries. The researchers

explored whether objects and patterns in a waiting environment—ranging from queue guides and area carpets to the location of another person—can create virtual boundaries that divide those waiting between in-system and out-system categories. After crossing the virtual boundary, the researchers hypothesized, an individual would adopt an implemental mindset, which is characterized by a more optimistic view of goal-relevant information and greater action-orientation.

To test their hypothesis, the researchers conducted studies that examined how environmental cues activate the implemental mindset, both behaviorally and cognitively. In one experiment, the researchers placed queue guides at various distances from a busy ATM, so that some of those waiting were in-system and others were out-system. The in-system customers were more likely to remain in line to complete their transaction, the researchers found. A separate study using queue guides showed that the point at which customers initiated task-related action—in this case, taking their ATM cards from their wallets or purses—corresponded to the point at which they crossed the virtual boundary and entered the in-system category.

These findings add to the growing literature on the unconscious effects of environmental cues on motivations and behavior. In addition to its application to everyday tasks, using cues to activate the implemental [mindset](#) may have broader implications in cases in which the decision to wait can have serious consequences. For example, motivating patients waiting for a kidney transplant to maintain an optimistic outlook can have a beneficial effect on their well-being. A short call from a nurse could serve as a virtual boundary that grants in-system status and raises patients' spirits, the researchers suggest.

Provided by Columbia Business School

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