Multitasking: Perception and Performance

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Previous research has demonstrated the detrimental effects of multitasking on performance. This paper shows that multitasking versus single-tasking is often a matter of perception. That is, the same activity may be framed as multitasking or single-tasking. Across 22 studies, we demonstrate that the mere perception of multitasking improves performance.

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EXTENDED ABSTRACT

In today's tech-heavy environment, multitasking has become an integral part of our lives (Jumio 2013; Ophir, Nass, and Wagner 2009; Wang and Tchernev 2012). Consumers frequently go back and forth between tabs on their smartphones, messages, and websites. Moreover, nowadays, many workplace environments necessitate working on multiple projects under time pressure that may lead workers to shift back and forth between several tasks that they are engaged in (e.g., Leroy, 2009). In the current paper, we first propose and demonstrate that multitasking is often about people's perceptions. Second, we demonstrate that the mere perception of multitasking improves performance compared to the perception of single-tasking, holding the task constant. Finally, we suggest that the perception of multitasking reduces boredom and increases engagement with the task, which drives this improvement in performance and increase in persistence.

The definition of multitasking, which originated in computer-engineering, is the engagement in two or more tasks simultaneously (Witt and Lambert 1965). However, it is generally accepted that humans cannot really perform more than a single task concurrently. That is, for non-automatic activities that require active attention, people shift back and forth between activities and process only a single task at any given time (Conard and Marsh 2014; Leroy 2009; Pashler 1994). Thus, multitasking is more about perception than actual engagement in multiple tasks concurrently (we limit our attention to non-automatic activities). When engaging in a given activity that requires several distinct tasks, one may construe such activity as either multitasking or single-tasking. This brings up important questions: what factors would make individuals perceive a certain activity as multi- versus single-tasking? Further, holding the actual activity constant, would the mere perception of multitasking impact performance? If so, why?

First, we examine what may be the factors that would prompt individuals to construe a certain activity as either multi- or single-tasking. In two studies, we demonstrate the malleability of people's perception of their activity. For example, in one study(N=80) participants were asked to imagine that they were working on two word-puzzles. In one condition the puzzles were described as being part of a single study while in another condition each puzzle was said to relate to a distinct and different study. Indeed, participants in the latter condition construed such an activity as being more consistent with multitasking than those in the former condition(p<.001). In additional studies, we find that participants' perception of multitasking is also influenced by task relatedness, topics, importance, and switching frequency (p's<.05). Thus, even the simple framing of an activity can make people construe a given activity as either multitasking or single-tasking.

Next, we tested whether the mere perception of multitasking increases persistence and performance. In one study (N=237), participants worked on two types of word-puzzles presented side-by-side. The tasks were framed as part of a single study (single-tasking-framing) or as part of two separate, distinct studies (multi-tasking-framing). Manipulation checks ensured that the framing manipulation worked as intended. We find that participants in the multitasking condition worked significantly longer and performed better compared to those in the single-tasking condition(p's<.001).

Across 12 studies, we replicated this effect with different tasks, and regardless of whether participants felt they had a choice of whether to multitask or not. For example, in an additional study, participants(N=162) were asked to transcribe what they heard when watching an educational video. This activity was framed as either a single activity (e.g., transcribing), or as two concurrent activities (listening and typing). Participants in the multitasking-condition transcribed more and performed significantly better on a subsequent quiz relating to the video content(p's<.05). Additionally, we did not find consistent results that would support that the effect was driven by a change in mind-set (i.e., a productivity mindset Keinan 2007) or overall perceptions of engagement in the task. Furthermore, the perception of multitasking did not seem to heighten the perception of self-efficacy, need for closure, confidence, or control, which could also be advocated as a mechanism driving improvement on task performance (Rotter 1966; Sherer et al. 1982).

In additional studies, we explore other mechanisms for the observed effect. In particular, we test whether it is possible that individuals' belief that multitasking is generally more difficult is causing them to gear up toward working on this supposedly more difficult activity. Such heightened preparedness would ultimately leads individuals to persist longer and perform better. In a study(N=200), we manipulated the degree to which participants would feel they needed to prepare for the study by informing them that the stud(ies) are simple and easy, in addition to our task-perception framing manipulation. Thus, the study was a 2(multitask-framing vs. single-task-framing) × 2(easy vs. control). Although we replicated the effect in which the perception of multitasking improves performance, we did not find an interaction that would support that the main driver is participants' tendency to get geared towards a more difficult task.

Several additional studies demonstrate that the multitasking framing improves performance because of increased engagement in the task(s). Specifically, participants who felt like they were multitasking reported being less bored when watching a gallery tour or working on puzzles (p's<.05). We more directly test the mechanism underlying this effect using eye-tracking. By measuring people's pupil dilation as a proxy for arousal (Beatty and Lucero-Wagner 2000), we find that when an activity is framed as multitasking, switching between the tasks increases arousal more so, compared to when the same activity is perceived as a single task.

To summarize, across 22 studies, with 4686 subjects, and employing five different types of tasks, we find that the mere perception of multitasking substantially improves performance. That is, while doing more at the same time might hurt performance, doing the same activity but perceiving it as more, improves it. This research has important implications because consumers have many opportunities to multitask as they navigate between tabs on their web browser, watch television, waiting in line, or shop in stores. In these contexts, consumer's perception of multitasking can increase engagement with a certain marketing activities like watching commercials or a tour.

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