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# Activity versus outcome maximization in time management

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Feeling time-pressed has become ubiquitous. Time management strategies have emerged to help individuals fit in more of their desired and necessary activities. We provide a review of these strategies. In doing so, we distinguish between two, often competing, motives people have in managing their time: *activity maximization* and *outcome maximization*. The emerging literature points to an important dilemma: a given strategy that maximizes the number of activities might be detrimental to outcome maximization. We discuss such factors that might hinder performance in work tasks and enjoyment in leisure tasks. Finally, we provide theoretically grounded recommendations that can help balance these two important goals in time management.

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Time is one of the most cherished and challenging resources at one' disposal. On the one hand, most of life's most important outcomes, arguably, are those suffused with time. On the other hand, deciding whether, when, and how to spend one's time are increasingly important concerns. Indeed, a recent Gallup Poll found that nearly half (44%) of Americans experience 'time famine' — having too much to do and not enough time to do it [1]. This feeling of time scarcity is linked to many undesirable outcomes, from insomnia to worsening physical health to stingy wallets [2,3]. Thus, an understanding of how to effectively manage time is essential.

The list of things to do during non-work waking hours is overwhelming: chores, socializing, engaging in hobbies, and exercising just to name a few [4]. The focus on productivity is so widespread that people even strive to make leisure productive [5,6], and brag about being busy [7]. Unsurprisingly, a variety of strategies are proposed to fit more activities in one's life [8,9]. Although diverse factors — like planning fallacy [10,11], procrastination [12,13] and overestimated future slack [14] — might undermine these strategies, they are nonetheless broadly successful in helping people maximize the number of activities performed.

Most of this work implicitly assumes that when managing time, the ultimate goal is *activity maximization* — doing the *greatest number of activities*. However, a second, and possibly more important, goal is *outcome maximization* — *making each activity count* and achieving the desired outcomes. Recent research suggests that the same strategies that help activity maximization, might undermine outcome maximization for leisure [15••,16] and work [17].

In the sections to follow, we first review the literature on time management and discuss the proposed strategies for activity maximization. Next, we turn our attention to how one can maximize the desired outcomes and review the growing literature on the unintended consequences of time management strategies and ways to avoid them.

## Activity maximization

People desire to take part in a large number of activities, but often fall short. Time management strategies help with activity maximization. In this section, we outline and discuss such strategies.

### Implementation intentions

Making general plans is often unhelpful. Instead, using 'if-then' statements that specify when, where, and how the plan will unfold proves to be more effective [18–20]. For instance, students who make specific plans for when (e.g., immediately after breakfast) and where (e.g., in a quiet spot in the house) to perform an assignment are more likely to complete it on time [21]. Similar effects are observed for voting [22], exercising [23], and health screenings [24]. Once set though, it is hard to deviate from the specific if-then plans. Thus, opportunities to improve on an existing plan might go undetected [25].

### Planning prompts

A variant of implementation intentions is planning prompts. Simply put, planning prompts are reminders about when a task will be completed [9,26]. Prompts that are more detailed (i.e., time, date, and location) do better at increasing follow through [9]. This has been found to be the case for both simple (e.g., flu shot [9]) and quite aversive activities (e.g., colonoscopy [27••]).

### Scheduling

Scheduling is yet another variant of implementation intentions, where specific times are set aside for an activity (e.g., 'at 6pm'), often on a calendar. Scheduling increases the probability of completion for both work [28] and leisure activities [15••]. Importantly, a less specific scheduling strategy (e.g., 'after work') is not as effective [15••].

When multiple activities need scheduling, there are two broad strategies: (1) scheduling intermittently, allowing for unscheduled time between activities or (2) scheduling back-to-back, leaving large chunks of unscheduled time. Although these two strategies matter very little for the scheduled activity itself, they have important consequences for unscheduled time. An upcoming scheduled activity tends to loom nearer and makes time feel insufficient [29••]. As a result, the unscheduled time is used for smaller and less substantial activities. Intermittent scheduling exacerbates this effect because each short interval of unscheduled time possesses a looming future scheduled activity. Conversely, back-to-back scheduling makes the remaining time feel more expansive and allows for initiation of more substantial activities [29••].

### Deadlines

Some activities, like extended projects (whether work or leisure), require interim steps to complete. For instance, personal projects like knitting a new blanket require multiple steps over a long period of time. Under such circumstances, setting deadlines are helpful [30••,31]. In essence, deadlines are hard stops set for completion. The urgency imposed by a deadline increases completion — an effect that increases as the deadline nears [30••].

Note that not all hard stops are the same. Deadlines are a special case of hard stops that signal both a stopping point *and* a necessary completion time. When the second component is missing, hard stops no longer reinforce completion. For instance, a scheduled task at the end of an hour (i.e., a hard stop for any preceding activity) decreases the likelihood of performing activities within available time [29••].

### A 'Fresh Start'

Extended activities are not only difficult to complete, but also difficult to initiate. A fresh start (e.g., new year) highlights the end of one period and the beginning of another, leading to increased initiation of challenging and extended activities [32,33, for a review, see 34 — this issue]. Thus, creating temporal landmarks is an important time management tool that is particularly useful in initiating activities that are otherwise elusive.

### Multitasking

When there is absolutely no time to fit in the activities, the last resort is to do multiple activities simultaneously (i.e., multi-task). People believe that multitasking is an important and desirable ability [35•] to help them get things done. Not surprisingly, many people multitask at work or during leisure [35•,36] and indeed complete a larger number of activities.

## Outcome maximization

In addition to maximizing the number of activities, people also desire to maximize the intended outcomes for these activities — for both work and leisure tasks. For work activities — extrinsically motivated, instrumental tasks that are performed out of obligation — the expected outcome is maximizing performance. For leisure activities — intrinsically motivated tasks marked by the pursuit of pleasure [37,38] — the expected outcome is maximizing enjoyment. Ironically, the strategies that aid in activity maximization can prove to be harmful for outcome maximization. In this section, we highlight these instances and provide recommendations for maximizing the intended outcome. Since the outcomes diverge, we discuss outcome maximization separately for work and leisure activities.

### Performance maximization for work activities

Broadly speaking, time management aids performance in the long run [39•,40,41]. For instance, students who engage in time management obtain higher grades [39•,40]. This line of research examined a combination of behaviors (e.g., scheduling, setting deadlines, and forming plans), and thus cannot tease apart the individual impact of each strategy. In this section, we unpack these multiple strategies.

*Schedule less:* Tools like scheduling allow for fitting in more activities in a limited time. As such, the temptation is to pack in as many activities as possible in order to complete more activities with increased efficiency. However, this often leads to decreases in performance [42]. A better approach is to prioritize. Choosing to complete some tasks and abandon less important ones leads not only to better performance, but also to more time savings [42]. Despite this, people tend to under-prioritize and find the process of giving up lower priority tasks aversive [42].

*Perform one task at a time:* As discussed above, an effective tool in activity maximization is multitasking. Although multitasking may help individuals to perform a greater number of activities, this may come at the expense of performance maximization. Often, people perform smaller tasks simultaneously by multitasking and end up with lower performance for the larger, focal activity [17,35•,36]. Thus, if the goal is to obtain the best performance, focusing attention on a single activity at a time is a better strategy. Importantly, however, although actual multitasking decreases performance, the *perception* of multitasking increases performance [35•].

*Space deadlines evenly:* Although deadlines often help with completion of extended activities, nuances in how deadlines are set are consequential for ultimate performance [30••]. Externally imposed deadlines tend to result in better performance than self-imposed ones. This is, at least partially, caused by differences in spacing for externally versus internally set deadlines [30••]. Deadlines that are evenly spaced increase performance relative to less staggered ones. For example, students with three evenly spaced deadlines throughout the semester obtained higher grades than those with all three deadlines at the end of the semester.

### Enjoyment maximization for leisure activities

The use of time management in the leisure domain is a relatively new concept [43••]. Nonetheless, people commonly use strategies like scheduling to fit in leisure [15••,35•,43••,44]. However, participation in leisure does not guarantee its enjoyment. Scheduling, in particular, can undermine enjoyment in several ways. In this section, we highlight these instances and discuss possible remedies to maximize enjoyment.

*Schedule more roughly:* People schedule leisure activities to ensure their participation, implicitly assuming that participation in an activity automatically leads to its enjoyment. Unfortunately, however, the act of scheduling leisure decreases enjoyment [15••]. This is because the strict beginning and end times imposed by scheduling disrupts the free-flowing nature of leisure activities. Consequently, scheduling more roughly by setting less defined beginning and end times remedies the problem. Thus to maximize enjoyment, it is better to not schedule leisure or to do so only roughly. Indeed, roughly scheduling by referencing a window of time (e.g., 'after work') leads to as much enjoyment as those experiencing the activity spontaneously and significantly more than scheduling more specifically (e.g., 'at 6pm') [15••].

*Avoid hard stops:* In addition to the impact of scheduling on enjoyment for individual scheduled tasks, scheduling may also undermine enjoyment for activities performed *prior* to the scheduled tasks. When faced with a hard stop to any activity performed in the preceding time, people predict activities will be less enjoyable [45]. For instance, participants predicted that desirable activities (e.g., a massage) would be less enjoyable and negative activities (e.g., doctor's appointment) would be more aversive if they occurred before a scheduled activity. The hard stop posed by the scheduled activity creates time pressure [29••] that may undermine enjoyment during the preceding time.

*Focus on the now:* Even when there is no time pressure, the mere knowledge of future upcoming activities may also undermine enjoyment. Scheduling specifies the sequence of events in one's day. Research on sequences has shown that people predict that increasing sequences will be more enjoyable [46]. Challenging this, recent studies found that knowing about a desirable upcoming activity robs the current (and otherwise desirable) activity of enjoyment [47]. For instance, participants enjoyed a comedic video less when they knew that they would next watch another enjoyable video compared to those who were unaware of the future activity. Such a result is in line with prior work showing that being more in-the-moment, or mindful, improves enjoyment [48], as well as work showing that packing a variety of activities into short periods of time can undermine happiness [49].

## Conclusion

A better understanding of how time management can help battle time famine is of great interest. People constantly cope with a desire to do many things with an overly limited resource. This has led to an increased valuation of productivity [5,6,50] and busyness [6, for a review, see 51 — this issue]. To cope with increasing demands on one's time, a variety of strategies are employed.

In this article, we distinguish between two, often competing, motives people have in managing their time: *activity maximization* and *outcome maximization*. The review of the relevant literature revealed instances of conflict, where a given strategy that maximizes the number of activities decreases the possibility of outcome maximization. Although certain time management strategies, such as setting deadlines, can aid in both activity and outcome maximization [30••], other strategies, such as scheduling and multitasking, pose tensions between these two goals [15••,17]. We compile the recent findings to provide suggestions to relieve this tension.

## Conflict of interest statement

Nothing declared.

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