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Does scarcity make you dumb?

A behavioral understanding of how scarcity diminishes our decision making and control

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Introduction

Sorry to bring up something so painful, but think about your most recent misstep at work. Was it a wayward email? A basic math error that skewed a budget forecast? A shortsighted staffing decision? A key meeting you forgot about? In the course of apologizing, you might well have blamed a lack of time and resources—and there is an excellent chance, that’s precisely the culprit. All too often, a state of scarcity can cause talented professionals to do dumb things.

CONSIDER a rising executive scrambling, on a tight deadline, to complete a proposal for a major acquisition that would position him as next in line to run the company. With the final presentation one day off, adrenaline kept him going well into the night, but it didn’t help him catch one key detail: He was basing his analysis on financials *from the wrong year*. The acquisition’s projected costs made sense had it been 2006—but not, as a board member gently pointed out in the big meeting—in 2016. How could he have overlooked the error?

We all make mistakes, of course, but unusual time pressure can make even the smartest person seem incompetent. Why? As new research suggests, we have a finite capacity for making good decisions, and a state of scarcity may deplete us of the limited capacity we have.¹ Consider the Tenerife air disaster of 1977, in which a veteran pilot commenced take-off without clearance and crashed into another air-

plane on the runway, killing 583 people. Why would an experienced pilot make such a reckless decision?

In reviewing the tragedy, analysts pointed to a variety of time pressures. A few months earlier, a new duty-time regulation restricted the number of hours pilots could fly each month: Anyone who logged too many hours could be subject to harsh penalties. So the pilot was conscious of needing to conserve time—and, adding urgency, a dense fog was developing, and the remote airport lacked the infrastructure to lodge all of the flight’s passengers. The need to get into the air as soon as possible became the pilot’s sole focus, causing him to lose sight of everything else. In addition, he was asked to complete a complex task—turning a 747 a full 180 degrees on a very narrow runway—which further depleted his capacity for good decision making.² One crash report remarked that the pilot “committed a basic error caused by his anxiety to get on his way” and that he “seemed a little absent” from all that was happening in the cockpit.³ His focus on getting in the

air seemed to interfere with other cognitive processing, leading to an omission of important cues and diminishing his performance.

We've all been there: Lack of time—or some other resource—can create a sense of anxiety that can end in poor decision making. Thankfully, few of us are responsible for hundreds of lives on each project.

While the Tenerife disaster illustrates what can happen to even a top performer under conditions of scarcity, it's important to note that this phenomenon goes beyond a few individuals making bad choices. Scarcity is a common and often-overlooked organizational barrier to achieving optimal performance. Leaders should recognize scarcity for what it is and find ways to overcome it so that everyone can do their jobs to the best of their ability.

In our previous work, we have discussed how physical work interruptions, such as a new email arriving or a co-worker stopping by to ask a question, can diminish performance.⁴ Work can end up taking much longer than necessary, quality can suffer, and a person's ability to retain information may falter. Experiencing a state of scarcity can be the equivalent of a major unseen interruption, as powerful as a physical distraction. Recent behavioral science research illustrates how scarcity creates a mind-set in which individuals unconsciously focus on urgent, unmet needs, letting other considerations slide.

Nearly everyone suffers time crunches, but time is only one source of scarcity—attention deficits may come from a lack of money, collaboration, food, companionship, or any other valuable resource. Scarcity can be a hidden distractor that constantly pulls cognition away from other important but less urgent needs.

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What managers should consider understanding is how scarcity compromises a person's decision-making capabilities by depleting her finite capacity for self-control and intelligence. When she makes bad choices, it doesn't necessarily indicate incompetence. Rather, circumstances may have exhausted her overall capability, creating a nearly impossible setting for making rational choices. The scarcity phenomenon can help explain the ways that people living paycheck to paycheck handle their expenses, how an overcommitted executive can't stop texting and taking calls at his child's sporting event, and why dieters may perform worse than nondieters on some cognitive tests.⁵ The bottom line is that each of us suffers a scarcity mind-set at some point, and understanding ways to mitigate its impact can help maintain and improve performance across multiple dimensions.

Some hopeful guides are emerging, bolstered by research, to help leaders combat the effects of scarcity in the workplace. It turns out that an organization can turn slack—traditionally regarded as a mere by-product of low productivity—to its advantage, using it to improve outcomes. Indeed, managers and employees can build slack into their daily activities to mitigate the consequences of scarcity.

Defining the scarcity mind-set: Our state of mind when facing an unmet, urgent need

IT'S reflexive, and all too easy, to attribute someone's poor decision to a lack of competency or motivation. The *fundamental attribution error*—our tendency to overemphasize an internal characteristic, such as personality, intelligence, or motivation, to explain another's behavior⁶—happens all the time. When we observe someone behaving a certain way, our initial reaction is to relate his motivation back to his *personality* rather than the *situational* factors that may have caused that behavior. We may assume the person who misses deadlines, double-books meetings, bounces a check, or splurges on an unnecessary item using a high-interest payday loan is careless, inconsiderate, or both. But in some cases, something else may be going on: They may be functioning under a scarcity mind-set. When facing an unmet and urgent need—whether it's a checking-account balance too low to cover monthly expenses, lacking the time to meet a deadline and keep one's personal commitments, or suffering from low blood sugar after skipping lunch—a person can react in less disciplined ways. Regardless of form, scarcity impacts everyone's brain in a similar pattern. Here are three ways that scarcity can wreak havoc on our minds:

- It constantly interrupts our thinking
- It creates an intense focus on the unmet need
- It exhausts the mind with constant trade-off decisions and creates a myopic view of the world

We will discuss each of these impacts in turn.

Scarcity interrupts our thinking

As a form of internal disruption, scarcity creates constant distractions that pull us away from engaging in higher-level thinking.⁷ Researchers Sendhil Mullainathan and Eldar Shafir summarize: “Scarcity itself also captures attention via a bottom-up process. This is what we mean when we say it is involuntary, happening below conscious control. As a result, scarcity, too—like trains or sudden noises—can pull us away even when we are trying to focus elsewhere.”⁸

Recent advancements in neuroscience explain the process by which this happens. Our brains, it is believed, process information in two distinct ways: top-down and bottom-up. Conscious choice directs our top-down processing, drawing on higher levels of mental functioning, whereas our bottom-up processing is often reacting to external stimuli, happening beyond our conscious control. Consider when someone calls your name from across a crowded room; it's nearly impossible to *not* be distracted, shifting attention away from the task at hand. That's our bottom-up processing interrupting our top-down thinking. Neuroscience researchers find that when our *cognitive load*—the total amount of mental effort being expended⁹—is high, our ability to prevent bottom-up intrusions can be very weak.¹⁰ Scarcity creates a high cognitive load by constantly pulling away our attention to an unmet urgent need, often beyond our control.

The impact of distraction can be profound. In one telling natural experiment, researchers sought to

determine the impact noise-based distraction had on academic performance.¹¹ At a middle school in New Haven, CT, one side of the building was situated next to train tracks; the other was not. Students attending classes on the track-side, exposed to the constant sound of rattling trains, tested a full year behind their classmates on the quieter side. After the school installed noise pads, students on both sides performed at the same level. Here, what's astounding is not that noises can impact performance—that's well-known—but the magnitude by which they can do so.

Now consider that the internally generated distraction caused by scarcity can have as powerful an impact on attention as an externally generated distraction, such as the sounds of a passing train. In both cases, the impact on performance may be profound. Workers everywhere may be physically present but mentally absent, as bottom-up thoughts evoked by scarcity continue to interrupt them throughout the day.

Scarcity draws our attention to the urgent

Not only does scarcity create noisy interruptions to our top-down thinking—the presence of unmet needs can actually become all-consuming and crowd out other concerns. This phenomenon is exemplified by the famous Minnesota Starvation Experiments. During World War II, a group of volunteers agreed to subject themselves to starvation

so medical professionals could better understand how the body reacts to hunger. Surprisingly, it wasn't the physical discomfort that most distressed the participants—it was the constant focus and obsession with food. One participant remarked:

I don't know many other things in my life that I looked forward to being over with any more than this experiment. And it wasn't so much . . . because of the physical discomfort, but because it made food the most important thing in one's life. . . . Food became the one central and the only thing really in one's life. And life is pretty dull if that's the only thing. I mean, if you went to a movie, you weren't particularly interested in love scenes, but you noticed every time they ate and what they ate.¹²

Research findings suggest that our brains are wired for survival and instinctively focus on what we lack. While in the near term this can have its advantages (see sidebar, “The upside of stress”), persistent scarcity creates mental bandwidth limitations. This is because as visceral needs intensify and persist, a conflict emerges between what one is driven to do vs. what one believes is the best choice.¹³ Scarcity compels the brain to focus on the urgent, often neglecting the important. In the Tenerife pilot example, scarcity created a conflict between what he knew was best and important—*wait until it is clear to take off*—and what his instincts drove him to do—*I have to get out of here*.

THE UPSIDE OF STRESS

Of course, there can be benefits to experiencing a temporary state of scarcity. While persistent, chronic scarcity robs us of our cognitive capacity, short-term scarcity can help people focus on urgent, unmet needs—in short, what is most important. Consider the power of a deadline: As it approaches, time becomes scarce and anxiety grows. Yet often, an individual meets that challenge by developing focus that enables her to complete the task on time. Stress can force us to push harder and even grow—even if, when not coupled with rest or the ability to oscillate back to a state of slack, it can cause long-run harm.

Scarcity can also create expertise. Research has found that low-income neighborhood grocery store shoppers are less likely than others to be enticed by marketing gimmicks—instead, they focus on value and are more likely to evaluate food prices by cost per unit.¹⁴ Given their limited financial resources, these shoppers are typically more aware of a dollar's absolute value and exhibit more rational economic thinking than higher-income shoppers, who often rely on environmental cues to choose what to buy.

Studies suggest that people consistently believe the present is an especially busy time and that they will have more time in the future.

Scarcity exhausts the mind

As we grapple with the constant pull of the urgent unmet need, we begin to exhaust the mind's finite resources. Scarcity amplifies this by demanding constant trade-off decisions and distorting our view of the future.

PREOCCUPIED WITH TRADE-OFFS

A scarcity mind-set forces individuals to confront nearly constant, and often painful, trade-off decisions. A pressing work deadline at the same time as your child's sporting event means that you must miss one—and likely feel distress and guilt no matter which choice you make. Similarly, people with no financial cushion can face a trade-off with every purchasing decision: *What will I have to give up in order to buy this?* Constant trade-offs deplete mental reserves, creating a cascade of effects leading to reduced self-control, lack of cognitive vigilance, and ultimately, poorer decision making.

The phenomenon is well documented in the form of *decision fatigue*: Decisions become increasingly difficult to make throughout the day, as your mental resources become depleted.¹⁵ However, unlike physical fatigue, we tend to be much less consciously aware of how low our mental reserves have become. This helps explain why some may experience road rage after a long day at the office, splurge at the department store, or even have trouble deciding what to eat for dinner. We are simply depleted, leaving us susceptible to impulses or unable to make small decisions.¹⁶ In this state, we are much more prone to make irrational trade-off decisions.

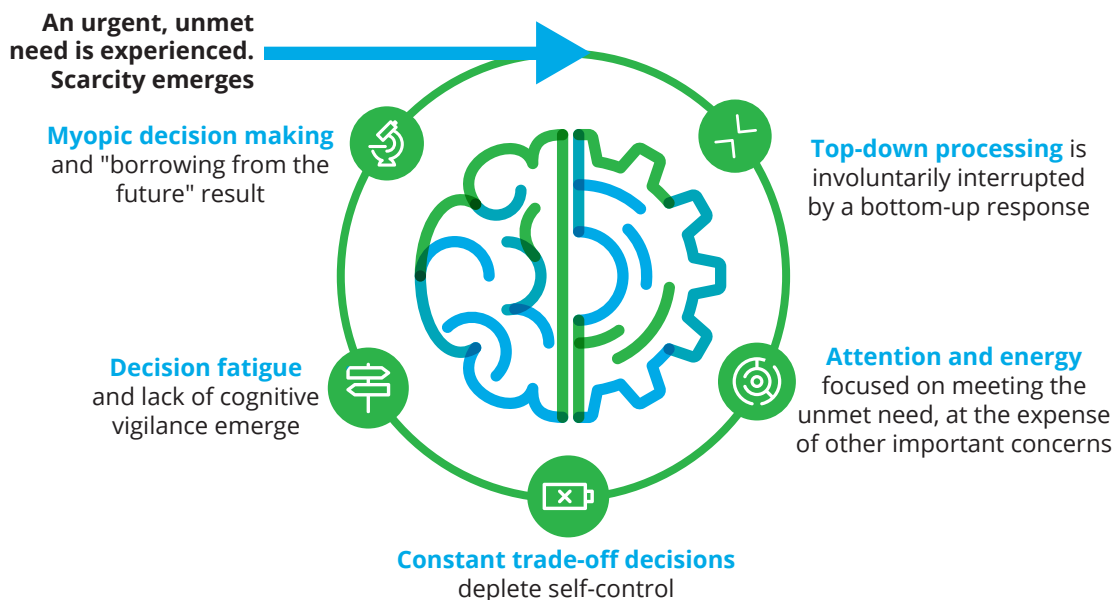
UNDERESTIMATING THE FUTURE AND OVERWEIGHTING THE PRESENT

Research further suggests that scarcity-induced decision fatigue can lead to irrational discounting of future consequences. When we are faced with constant trade-off decisions, rather than rationally sorting through choices at hand, we often begin to exhibit “hyperbolic discounting of future costs.” In essence, we become susceptible to *delay discounting*—a readiness to take a dramatically lower payoff now instead of waiting for a much larger reward in the future.

Simultaneously, we may fall prey to a *planning fallacy*—convincing ourselves that a particular task will take less time in the future than it will now.¹⁷ For example, studies suggest that people consistently believe the present is an especially busy time and that they will have more time in the future.¹⁸ The result is an insensitivity toward borrowing from the future. Consider, for a moment, the number of times you have moved a commitment to a later date, assuming you will have plenty of time then, only to find you are just as busy when the rescheduled time arrives.

The unfortunate challenge of a scarcity mind-set is that our natural reactions to it can create a vicious cycle. Scarcity often begets more scarcity, based on our finite capacity for thoughtful decision making and control. Figure 1 illustrates the psychological mind-set of scarcity—a cycle that the lessons of behavioral science can help leaders escape.

Figure 1. A scarcity mind-set cycle



Source: Deloitte analysis.

Graphic: Deloitte University Press | DUPress.com

Illustrative example:

Tom is a rising leader in a Fortune 100 organization, partly due to his seeming ability to juggle multiple priorities. He also serves on a not-for-profit board and is leading the organization's big fundraiser next month. While Tom typically enjoys serving the community in this capacity, he has trouble finding the necessary time to put it all together. In addition, he overcommitted to deliver on two competing projects at work—and agreed to coach his son's baseball team this summer.

There quite simply isn't enough time in the day to do it all.

When he engages in one activity, all he can think about are those activities he's neglecting. He may be physically present at meetings, but his mind is constantly elsewhere.

Tom finally recognizes that something has to give, forcing him to make trade-off decisions. Step away from the high-exposure work project or step down from his board duties? Skip the baseball game or attend? These types of decisions create decision fatigue and an overall sense of anxiety.

To help manage it all, Tom begins to push back project deadlines, hoping to catch up later. He reschedules the fundraiser event for the following month. He takes conference calls on the way to his son's game. He keeps "borrowing from the future" in hopes of catching up on today.

These trade-offs don't go unnoticed, as business partners are frustrated by late project deliverables. Also, Tom discovers that the late fundraiser created budgeting errors that he is responsible for reconciling. The harder he tries to keep up, the more complicated it all becomes. Tom is caught in the scarcity mind-set cycle.

Using behavioral science to design a way out

A key, easier-said-than-done approach to dealing with scarcity is to create slack in the relevant system. Sendhil Mullainathan and Eldar Shafir use the analogy of a suitcase:²⁰

Imagine packing for an extended trip with only a very small suitcase. Your friend, on the other hand, packs with a much larger one. Your friend has room for all the essentials while also having extra space to address contingencies. You, on the other hand, are forced to make numerous trade-off decisions about what to bring. You have no room for extras. As a result, you are required to make predictions about future needs—which behavioral research suggests you will not be good at—such as should you bring a raincoat or an extra pair of shoes. You friend is able to bring these things “just in case.” In essence, the slack capacity afforded by your friend’s larger suitcase dramatically simplifies their planning (and ultimately enjoyment) relative to yours *for the same trip*.

In many settings, slack is seen as a negative, a waste of organizational resources. (Why would anyone carry around a too-large suitcase?) However, even in industrial settings, slack—in the form of excess

capacity—can support overall performance in key ways. An exploration of buffer capacity in production and health care settings illustrates this concept (see sidebar, “Slack in operations”).

Even more important, today’s knowledge economy requires an evaluation of the role of slack in the system. A behaviorally grounded perspective on slack would see it as a necessary component for the creation of individual and organizational change, agility, and creativity.²¹ In this view, organizations

Organizations that are designed to operate at maximum efficiency may be excellent at day-to-day execution but may achieve this at the cost of *never having time to consider the future*.

that are designed to operate at maximum efficiency may be excellent at day-to-day execution but may achieve this at the cost of *never having time to consider the future*.²² Indeed, in one study, an organization streamlined its daily operations at the cost of leaving employees feeling uncertain about their future growth, which resulted in decreased engagement and performance.²³ This is likely why

researchers have proposed that short-term efficiency gains can actually reduce long-term competitive positioning.²⁴ Slack allows individuals and organizations the time to grow, adapt, and change.²⁵

Table 1 highlights the differences between a traditional, negative view of slack and an alternative, behavioral perspective that views some slack as a necessary enabler of organizational agility and performance.

Table 1. Can slack be a good thing? Divergent perspectives

Traditional view	Emerging behavioral perspective
Slack is seen as something to eliminate	Slack needs to be built into the system
Focus is on optimizing day-to-day operations and mitigating slack to increase productivity	Focus is on creating longer-term change and building more bandwidth to increase agility, learning, and growth
End goal is to create today's most efficient organization	End goal is to create adaptability for tomorrow's organization
Present-oriented: borrows from the future to support today	Future-oriented: borrows from today to support the future

The need to manage slack

While slack is important, it must be managed. The leader's challenge is to cultivate the right amount of slack in a system without letting it turn into an excuse for laziness, wasted resources, and underperformance. To be sure, even scarcity experts advocating for more slack recognize that too much can have a negative effect on organizations—and can even create a new cycle of future scarcity.²⁶

Nonetheless, in the right amounts, slack can be a valuable commodity. Here are some action items leaders can enact to productively use slack to combat scarcity (without going too far). In offering these, we look to the behavioral research literature for suggestions on how leaders can break the scarcity cycle for themselves, for their direct reports, and for their entire organizations.

DECIDE TO DECIDE LESS

An obvious remedy for fatigue: Do less of whatever activity is making you tired. This is as true for decision making as it is for shoveling dirt. So a great way to mitigate decision fatigue is to reduce the number of choices you and/or your team has to make. In particular, find ways to eliminate choices that are unimportant yet still consume mental bandwidth. In a 2012 interview, President Obama explained one way he tries to reduce decision fatigue:

You'll see I wear only gray or blue suits. I'm trying to pare down decisions. I don't want to make decisions about what I'm eating or

wearing. Because I have too many other decisions to make. . . . You need to focus your decision-making energy. You need to routinize yourself. You can't be going through the day distracted by trivia.²⁷

Any decision, even a small one, draws upon a finite mental account that ultimately could wind up depleted at a critical time. Eliminating those less important choices, or deferring them to others, can leave you or your team better prepared to make thoughtful and smart big decisions when they arise.

WASTE NOT, WANT NOT

On a related note, not only might individuals face far too many decisions throughout their day—they may engage in other activities that add little or no value and deplete mental resources. For example, studies of knowledge-worker productivity found that people waste as much as 41 percent of their time on busywork: tasks that offer little personal satisfaction and do not help them get work done.²⁸ Yet these employees, looking to be perceived as team players, continue to engage in the “busyness” of work.²⁹ In one recent experiment, researchers found that, “By simply asking knowledge workers to rethink and shift the balance of their work, we were able to help them free up nearly *one-fifth of their time*—an average of one full day a week—and focus on more worthwhile tasks with the hours they saved.”³⁰

Think back to the suitcase analogy: that someone with a small suitcase must focus on true priorities and leave behind nonessentials.³¹ Often, nonessen-

tial tasks dominate the workplace, with meaningful activities getting inadequate attention.³² Too often, we measure productivity by one's ability to multi-task and juggle competing priorities, leading to little progress in any direction. As discussed before, the human brain is simply not wired to excel under these conditions.

The conclusion is simple: A mindful approach to both the number of decisions made and the number of activities in which one engages can help create slack and reduce overall mental depletion. This begins by prioritizing tasks and setting aside—or delegating—inessential ones.

REST YOUR WEARY MIND

Physical and mental exertion both take their toll. In 1926, Henry Ford instituted a 40-hour workweek (reducing hours per day from 10 to 8, and days per week from 6 to 5) when studies indicated that individual worker productivity started to fall after 40 hours.³³ More recent studies of worker productivity have corroborated this result.³⁴

The same holds true for athletes. A study examined the role that rest and recovery play in high-performing athletes' performance.³⁵ Athletes were divided into two groups: one that trained every day for less time per workout with no rest days, and a second that trained for a longer time period with rest days in between their sessions. The group that rested between workouts increased its performance, while the group that trained every day did not improve. Researchers found a direct correlation between rest and recovery and achieving higher performance—even in the short term.

For knowledge workers, obtaining appropriate mental recovery may be equally important. A simple but powerful way to mitigate decision fatigue may be to block off time for transitioning between meetings. Employees' calendars are often filled with back-to-back meetings that cannot help but induce mental fatigue. Instead, organizational leaders could suggest that knowledge workers schedule meetings running 25 or 50 minutes rather than the classic 30- or 60-minute time blocks. This would build in time for mental recovery before commencing the next intellectual effort.

The bottom line is that “doing less” by incorporating recovery periods may actually increase productivity by leaving individuals with greater mental reserves with which to approach issues and solve problems.

Do less of whatever activity is making you tired. This is as true for decision making as it is for shoveling dirt.

EXPECT THE UNEXPECTED

Demand uncertainty is a fact of life, whether that demand is for products, time, money, or any other valuable resource. Where uncertainty is an issue, as previously discussed, buffer capacity often plays a strategic role. The bottom line is that leaders and individuals alike may need to proactively create slack to prepare for the predictably unexpected event that will eventually occur. However, innate biases with respect to the way we manage uncertainty over time can make building this capacity a challenge. Two tactics—pre-commitment and effort segmentation—can help.

With pre-commitment, individuals build slack over time by immediately committing to something small and easy that will, in the long term, turn into something substantial. A powerful example of this approach to building financial slack comes in the *Save More Tomorrow* campaign, which aims to increase the level of savings for employees.³⁶ Rather than ask individuals to make a substantial initial commitment to saving (reducing current earnings), companies give employees the option to automatically tie future savings rate increases to subsequent wage increases. Over time, as income increases, so does the absolute level of savings, without asking

A behavioral understanding of how scarcity diminishes our decision making and control



the employee to remake the choice to increase that amount on a regular basis.

Effort segmentation is a tactic that helps combat individuals' *optimistic bias*—our belief that future tasks will take less time to complete than they actually will. Those falling prey to this bias tend to gloss over or even ignore conflicting contextual information, such as previous completion times, potential obstacles, and competing demands.³⁷ This results in focusing too heavily on getting the task done and remaining closed-minded to information that does not clearly help meet this goal.³⁸

Research shows that it is easier to remain overly optimistic when a deadline or event is further out in the future than when it is imminent and key obstacles are more visible.³⁹ In order to avoid inducing scarcity due to a misjudgment of required effort, consider breaking important long-term efforts into smaller interim segments that can be sequentially attacked. Doing so can promote a greater tendency toward vigilance of effort and can result in improved outcomes.⁴⁰

Overcoming a scarcity mind-set

So: Does scarcity make us dumb? Not really. But a scarcity mind-set can clearly position individuals

and organizations to make bad choices, with potentially severe consequences. It is in every leader's interest to consider the susceptibility of their co-workers and themselves to such thinking.

A key antidote for the scarcity mind-set is the creation of slack, a buffer for the uncertainties that make scarcity such a consuming mental challenge. (For recommendations for individuals, see sidebar, "Five ways to create slack in your day.") Beyond a basic concern for the point at which slack could potentially become wasteful, leaders need to consider strategies that can preserve mental capacity for the truly important choices that must be made. To that end, managers should consider the following:

- Define and clearly communicate the core mission and the accompanying priorities and goals. Often both managers and employees find themselves in a state of scarcity because they lack clarity about bigger-picture goals and mission and instead focus almost exclusively on putting out each day's fires.
- Once the mission is set, evaluate where decisions are currently made, and consider ways to better distribute decision making so as not to exceed key players' capacity.
- Evaluate timing: Plan to make critical decisions at times when mental capacity is high, not in an

FIVE WAYS TO CREATE SLACK IN YOUR DAY

Small changes can add up to create a big impact. Here are five behaviors that you can implement, as an individual, to incorporate slack into your workday.

- Start your day off right: Take the time to define and prioritize your daily goals, and refer back to those goals throughout the day to ensure alignment.
- Create meeting buffers: Reduce meeting times to 25 or 50 minutes to create time to reset before moving onto the next meeting or task.
- Schedule focused work time: During this time, turn off your email and your phone so that you can give your full attention to the task at hand.
- Take breaks: Schedule time to mentally recover. This means stepping away from your work to get up and move around or practice deep breathing to center yourself.
- Meditate daily: Just a few minutes a day can provide a wide array of mental and physical benefits.

exhausted state, such as immediately after an important conference or client meeting. Make adjustments as necessary to avoid burnout.

- Acknowledge and build in the need for mental rest. Since back-to-back cognitively intense activities are depleting, schedule in buffer and recovery time that allows individuals time to either restore or catch up.
- Evaluate and find other ways to build slack into your daily operations.
- To minimize distraction and interruption, set aside a time and place that allows for intentional focus on a particular task. Consider putting up an away message while working on an impor-

tant task and unplugging from both Internet and phone for a short period of time.

- Pre-commit to the building of slack.
- Fight the tendency to be overly optimistic about future demands by breaking larger projects into smaller, near-term commitments.

In the end, knowledge work requires mental capacity, and that capacity, for any person, is finite. In order to increase long-run success, organizations will need to manage that capacity by helping employees at all levels avoid lapsing into a scarcity mind-set that depletes their ability to make good choices. It would be dumb to do otherwise.

SLACK IN OPERATIONS

Even in lean manufacturing environments, where demand uncertainty is a challenge, managers can build slack into the system through the use of shift buffers.⁴¹ Instead of filling 24 hours a day with production, downtime may be scheduled between shifts, to be held in reserve as capacity buffers. These help the business react to variability and disruptions. Slack time can be used to catch up on production or for maintenance or other value-adding tasks.

Similarly, in health care settings, the deliberate creation of slack can lead to improved performance. At one midwestern health center, managers faced the challenge of simultaneously dealing with overbooked operating rooms *and* the need to account for unplanned emergency procedures. Their solution came in the form of creating slack in the system. Somewhat counterintuitively, hospital managers removed one operating room (of 22) out of the scheduling pool, reserving it for *only* unplanned emergencies.⁴² The availability of the slack resource allowed the health system to buffer against uncertainty, resulting in smoother operations, increased surgical volume, and ultimately greater revenue.

ENDNOTES

1. Sendhil Mullainathan and Eldar Shafir, *Scarcity: The New Science of Having Less and How It Defines Our Lives* (New York: Times Books, 2013).
2. Karl E. Weick, "The vulnerable system: An analysis of the Tenerife air disaster," *Journal of Management* 16(3), 1990, pp. 571–93.
3. Ibid.
4. Mark J. Cotteleer and Elliot Bendoly, *Stop or not: How behavioral factors affect decisions related to work interruptions*, Deloitte University Press, December 5, 2015, <http://dupress.com/articles/managing-digital-distractions-in-workplace/>.
5. Kathleen D. Vohs and Todd F. Heatherton, "Self-regulatory failure: A resource-depletion approach," *Psychological Science* 11(3), 2000, pp. 249–54.
6. Edward E. Jones and Victor A. Harris, "The attribution of attitudes," *Journal of Experimental Social Psychology* 3(1), 1967, pp. 1–24.
7. Mullainathan and Shafir, *Scarcity*.
8. Ibid., p. 60.
9. John Sweller, "Cognitive load during problem solving: Effects on learning," *Cognitive Science* 12(2), 1988, pp. 257–85.
10. Carsten N. Boehler et al., "Task-load-dependent activation of dopaminergic midbrain areas in the absence of reward," *Journal of Neuroscience* 31(13), 2011, pp. 4955–61.
11. Arline L. Bronzaft, "The effect of a noise abatement program on reading ability," *Journal of Environmental Psychology* 1(3), 1981, pp. 215–22.
12. Leah M. Kalm and Richard D. Semba, "They starved so that others be better fed: Remembering Ancel Keys and the Minnesota Experiment," *Journal of Nutrition* 135(6), 2005, p. 1349, <http://jn.nutrition.org/content/135/6/1347.full.pdf>.
13. George Loewenstein, "Emotions in economic theory and economic behavior," *Preferences, Behavior, and Welfare* 90(2), May 2000, pp. 426–32.
14. Isabel Maria Rosa-Diaz, "Price knowledge: Effects of consumers' attitudes towards prices, demographics, and socio-cultural characteristics," *Journal of Product and Brand Management* 13(6), 2004, pp. 406–28, <http://dx.doi.org/10.1108/10610420410560307>.
15. Roy F. Baumeister, "The psychology of irrationality," in Isabelle Brocas and Juan D. Carrillo (eds.), *The Psychology of Economic Decisions: Rationality and Well-Being* (Oxford: Oxford University Press, 2003), pp. 1–15.
16. Roy F. Baumeister and John Tierney, *Willpower: Rediscovering the Greatest Human Strength* (New York: Penguin Books, 2012).
17. Gal Zauberman and John G. Lynch, Jr., "Resource slack and propensity to discount delayed investments of time vs. money," *Journal of Experimental Psychology: General* 134(1), 2005, pp. 23–37.
18. Ibid.
19. Seonaidh McDonald, "Innovation, organizational learning, and models of slack," presented at Lancaster University Organizational Learning and Knowledge Fifth International conference, May 30, 2003.
20. Mullainathan and Shafir, *Scarcity*.
21. McDonald, "Innovation, organizational learning, and models of slack."
22. Tom DeMarco, *Slack: Getting Past Burnout, Busywork and the Myth of Total Efficiency* (New York: Broadway Books, 2002).
23. Ron Friedman, *The Best Place to Work: The Art and Science of Creating an Extraordinary Workplace* (New York: Perigee/Penguin, 2014).
24. Susan Reynolds Fisher and Margaret A. White, "Downsizing in a learning organization: Are there hidden costs?" *Academy of Management Review* 25(1), 2000, pp. 244–51.
25. The authors, one of whom has a long history in supply chain and operations management research, hasten to add that slack, in the form

- of safety stock and surge capacity, remains an important part of the operations toolset in contexts where demand for resources is uncertain. Furthermore, preventative maintenance—planned downtime to prepare equipment for future demands—is a critical responsibility for operations managers.
26. Mullainathan and Shafir argue in one blog post that the availability of too much slack can lead the organization to a lack of vigilance, creating a new scarcity cycle when the unexpected happens. See “Scarcity: Taking care of my own business,” How to Tacomb, November 5, 2014, <http://takingcareofmyownbusiness.com/2014/11/05/scarcity-by-sendhil-mullainathan-and-elder-shafir/>.
 27. Michael Lewis, “Obama’s way,” *Vanity Fair*, September 11, 2012, <http://www.vanityfair.com/news/2012/10/michael-lewis-profile-barack-obama>.
 28. Julian Birkinshaw and Jordan Cohen, “Make time for the work that matters,” *Harvard Business Review*, September 2013, <http://hbr.org/2013/09/make-time-for-the-work-that-matters/ar/1>.
 29. Tom Hodson, Jeff Schwarz, Ardie van Berkel, and Ian Winstrom Otten, *The overwhelmed employee: Simplify the work environment*, Deloitte University Press, March 7, 2014, <http://dupress.com/articles/hc-trends-2014-overwhelmed-employee/>.
 30. Birkinshaw and Cohen, “Make time for the work that matters”; for a more thorough discussion on simplifying the workplace, see Hodson et al., *The overwhelmed employee* and James Guszczka, Josh Bersin, and Jeff Schwartz, “HR for humans: How behavioral economics can reinvent HR,” *Deloitte Review* 18, January 25, 2016, <http://dupress.com/articles/behavioral-economics-evidence-based-hr-management/>.
 31. Greg McKeown, *Essentialism: The Disciplined Pursuit of Less* (New York: Crown Business, 2014).
 32. Ibid.
 33. Evan Robinson, “Why crunch mode doesn’t work: Six lessons,” International Game Developers Association, 2005, <http://www.igda.org/?page=crunchsixlessons>.
 34. Ibid.
 35. J. Parra et al., “The distribution of rest periods affects performance and adaptations of energy metabolism induced by high-intensity training in human muscle,” *Acta Physiologica* 169(2), 2000, pp. 157–65.
 36. Richard H. Thaler and Shlomo Benartzi, “Save more tomorrow: Using behavioral economics to increase employee saving,” *Journal of Political Economy* 112(1), 2004, pp. 164–86, <http://faculty.chicagobooth.edu/richard.thaler/research/pdf/SMarTJPE.pdf>.
 37. Roger Buehler and Dale Griffin, “Planning, personality, and prediction: The role of future focus in optimistic time predictions,” *Organizational Behavior and Human Decision Processes* 92(1–2), 2003, pp. 80–90.
 38. For further discussion of decision making, see Derek M. Pankratz and Michael A. Roberto, “Crossing the mental Rubicon: Don’t let decisiveness backfire,” *Deloitte Review* 18, January 25, 2016, <http://dupress.com/articles/dont-let-decisiveness-in-leadership-backfire/>.
 39. Buehler and Griffin, “Planning, personality, and prediction.”
 40. For a more thorough discussion on breaking tasks into smaller segments, see Cotteleer and Bendoly, *Stop or not*, Deloitte University Press, December 5, 2014, <http://dupress.com/articles/managing-digital-distractions-in-workplace/>.
 41. Wallace J. Hopp and Mark L. Spearman, *Factory Physics*, Third Ed., (Long Grove, IL: Waveland, 2011).
 42. Sheree Crute, “Case study: Flow management at St. John’s Regional Health Center,” *Quality Matters*, Commonwealth Fund, 2005.

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