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Goal-Directed Allostasis: The Unique Challenge of Keeping Things as They Are and Strategies to Overcome It

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Abstract
We introduce the concept of *goal-directed allostasis* (GDA), the mental process that underlies individuals' deliberate and proactive attempts to maintain the current state of affairs. GDA is distinct from *goal-directed progress* (GDP), the mental process that underlies the pursuit of change in the current state of affairs. We argue that GDA plays a crucial role in human life but that it has been largely overlooked in psychological research. We discuss the unique cognitive and motivational challenges that arise during GDA and suggest strategies to overcome these challenges. Finally, we outline how acknowledging the distinction between GDA and GDP might contribute to the study and treatment of mental illness and highlight several directions for future research.

Keywords
maintenance, motivation, goal pursuit, self-regulation

> That which love desires is not that which love is or has; for no man desires that which he is or has.
> —Plato, *Symposium*

Throughout life, we constantly pursue the things that we do not have. We may seek love, possessions, or success, and (luckily) we occasionally attain what we desire. However, what happens once our wishes are fulfilled? Oftentimes, if we do not invest in the routine (and sometimes Sisyphean) endeavor to maintain the things we have gained, we are bound to lose them.

In this article, we introduce the concept of *goal-directed allostasis* (GDA), referring to the goal-directed mental process that underlies individuals' proactive attempts to maintain the current state of affairs. The term *allostasis* is derived from physiology, where it refers to the process of "remaining stable by being variable" (McEwen & Wingfield, 2003; Sterling & Eyer, 1988).

For many years, research in physiology has assumed that biological systems maintain stability in a *homeostatic* manner, namely, that for every action imposed on the organism, it strives to respond with an equal and opposite reaction, via some negative feedback process (Cannon, 1932). For example, when the external temperature rises, the body heats up and responds by secreting sweat in order to return to its physiologically optimal temperature. The *allostatic* model, first conceptualized by Sterling and Eyer (1988), emphasizes that organisms do not have to wait until perturbation occurs in order to react; instead, they can rely on learning mechanisms in order to predict disturbances and then proactively act to thwart them.

Allostatic processes can preemptively change the target levels of physiological parameters to maintain the organism's stability in the face of changing environments. For example, to maintain a physiologically optimal temperature, an armadillo introduced to a cold environment will raise its core temperature to 3 °C higher than the optimal level (Johansen, 1961). The homeostatic model, in which responses are caused by deviations from a baseline target value, cannot explain how heat-producing responses would be sustained after the core temperature rises beyond the physiological optimum. The allostatic model, on the other hand, assumes that regulation is anticipatory and, thus, that the organism can respond by deviating from its baseline state in order to counteract expected future

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disturbances (i.e., the gradual loss of body heat because of the cold temperature).

When an amoeba behaves in an allostatic manner, it does so without deliberation. When human beings engage in allostasis, they can rely on their unique capacity for future thought; namely, they can generate mental representations of hypothetical future events and plan their behavior in accordance with these representations. Thus, when discussing GDA, we focus on humans' ability to rely on reasoning and deliberation in order to maintain their current state.

GDA is prevalent in daily life. It occurs when individuals engage in proactive behavior to maintain their health (Ory, Smith, Mier, & Wernicke, 2010), the strength and vitality of their relationships (Baxter & Simon, 1993; Knee, 1998), or a certain level of self-esteem (Tesser, 2000). GDA is also critical in the domain of behavior change. Whether the issue is addiction (Prochaska, DiClemente, Velicer, Ginpil, & Norcross, 1985; Walitzer & Dearing, 2006; Zhou et al., 2009), physical activity (Fuchs, Seelig, Göhner, Burton, & Brown, 2012; Hallam & Petosa, 2004; Lippke, Ziegelmann, & Schwarzer, 2004; Vansteenkiste, Simons, Soenes, & Lens, 2004), weight loss (Anderson, Konz, Frederich, & Wood, 2001; Williams, Grow, Freedman, Ryan, & Deci, 1996), or any other desired change in behavioral patterns, a central element in an effective intervention is to ensure that, once attained, the desired change is maintained by anticipating future impediments and proactively acting to prevent them.

Goal-Directed Allostasis Versus Goal-Directed Progress

Whereas GDA focuses on the preservation of the current state, mental processes aimed at goal attainment (henceforth, *goal-directed progress*, or GDP) entail making a change for the sake of advancing in a specific direction—either toward a desired state (e.g., getting rich) or away from an undesired state (e.g., recovering from an illness). Put in a different way, the central difference between GDA and GDP is the absence of a gap between the current state of the pursuer and his or her object of desire (henceforth, the *goal object*). As we discuss later, this distinction between GDP and GDA is highly consequential.

In some cases, one can unambiguously discern whether a person is engaging in GDA or GDP. For example, it is self-evident that a person taking the flu vaccine is engaging in GDA (i.e., he or she is behaving in a proactive manner to maintain the current state of health), and a person drinking cough syrup is clearly engaging in GDP (i.e., making a change in the direction of moving away from an undesired state). In other cases, there is no direct mapping between an overt behavior and GDA/GDP. If we see a person taking vitamin C pills, we cannot readily discern whether he or she is trying to recover from a flu (a GDP process) or maintain his or her current health (a GDA process). Nonetheless, as we argue throughout the article, the person taking vitamin C pills to maintain health and the person taking the pills to regain health likely arrived at the same behavior via two different psychological routes. To empirically discern which psychological route led the individual to his or her behavior, we must gauge the individual's goal state (health) and compare it with his or her current state (healthy/sick). In this article, we detail how these two psychological routes (GDA and GDP) differ in terms of the cognitive architecture they entail, their motivational underpinnings, and their phenomenology.

The distinction between GDA and GDP does not mean that they do not overlap; in fact, GDA and GDP processes constantly interact. As noted, even when there is no gap between the desired and current states (e.g., feeling healthy), one can have a goal of maintaining this state of affairs (e.g., a goal of staying healthy); this *maintenance goal* will be pursued via the process we defined as GDA, giving rise to maintenance behaviors (e.g., getting vaccinated). Oftentimes, despite one's best efforts to maintain stasis, a discrepancy between the current and desired states will arise. In such cases, one may react by forming a specific *progress goal* (e.g., recovering from the flu), which will prompt a GDP process and progress-related behaviors (e.g., taking cough medicine). Once the discrepancy is eliminated (e.g., the person is no longer sick), the progress goal will terminate but the maintenance goal will endure, prompting the individual to continue engaging in GDA. This continuous ebb and flow of GDA and GDP processes lies at the heart of humans' goal-directed behavior.

Given the prevalence of goal-directed behavior aimed at stasis, one could expect that the (potentially important) distinction between GDP and GDA would receive much theoretical and empirical attention. However, it is surprising that this topic has been largely overlooked in the rich literature on motivation and self-regulation, which has often focused on situations wherein there is a discrepancy between the desired and current state of affairs. In fact, common definitions describe the process of goal pursuit as the attempt to reduce the gap between one's current and desired states (Austin & Vancouver, 1996; Elliot & Fryer, 2008; Förster, Liberman, & Friedman, 2007; Kruglanski, 1996), precluding an analysis of GDA. In light of this, we attempt in the present article to put the process of GDA under the microscope and provide an in-depth analysis of the psychology of maintenance.

We begin by clarifying the distinction between GDA and other relevant conceptualizations. We then review

existing models of goal pursuit and their ability (or lack thereof) to accommodate the process of GDA. Thereafter, we discuss the unique motivational challenges associated with GDA. We continue with a discussion of the critical importance of research into GDA in the domain of mental health. Finally, we conclude by proposing future research directions supported by the new conceptualization that we offer.

What Makes GDA Psychologically Distinct?

Over the years, scientists have accumulated a large body of knowledge concerning the determinants of motivation and successful goal pursuit, but these research endeavors have not explicitly addressed the problem of allostasis. One might argue, however, that the process of GDA has been discussed under different headings in previous literature. Thus, before delving into a discussion of GDA, we must explicate the differences between this process and other widely discussed processes in the self-regulation literature.

GDA is not Sisyphean GDP

It could be argued that the same psychology that subserves long-term GDP processes (e.g., pursuing the goal to lose weight) is called on when individuals engage in maintaining a current state (e.g., the attempt to maintain one's weight). As such, GDA may be seen simply as the pursuit of an unattainable long-term goal. In that case, there may not be a need for a lengthy discussion of GDA. Just as Sisyphus was destined to carry the same rock to the top of a hill only to see it roll back down once he finished, people must brush their teeth every day only to see them become dirty again.

However, although construing GDA as the pursuit of an unattainable long-term goal object might suffice for some goals, it does not suffice for others. For goal objects such as keeping one's job or keeping one's marriage, for instance, there might never be a gap between the agent and the goal object (e.g., one might never lose one's job or get divorced). Imagine that Sisyphus's rock stands at the top of the hill—now he is destined to sit beside the rock and make sure it remains in place. In this case, the goal object is fully attained and remains that way, but the process of goal pursuit is eternal just the same—it is the eternal endeavor to maintain things as they are.

GDA is not habitual behavior

One possible reason for the scarcity of research on GDA is that maintenance behavior may seem as if it is a form of *habitual behavior* (e.g., Wood & Neal, 2007) rather than a form of goal-directed behavior. If John brushes his teeth every morning, it is not necessarily because he has a goal to do so—he might do it automatically, relying on a force of habit. Indeed, the task of achieving stasis is sometimes pursued through nondeliberative, automatic, and/or habitual processes.

However, imagine that one morning, John drops his toothbrush in the toilet. Now he must go to the store and buy a new toothbrush in order to brush his teeth. Such behavior is not automatic; it is governed by John's goal to maintain basic hygiene. Had this goal not existed, John's habit of brushing his teeth in the morning would have ceased with the loss of his toothbrush. Because his toothbrush is a means in the service of a goal, John would replace it with different means and continue to brush his teeth every morning (Förster et al., 2007; Martin & Tesser, 2009).

GDA is not drive reduction

When John goes to the dental hygienist, it does not necessarily mean that he is engaged in GDA aimed at maintaining oral hygiene. It could also mean that John woke up in the morning, looked in the mirror and saw that his teeth are not as white as they used to be, and set a goal to mend the situation. In other words, there are many situations wherein individuals behave in a homeostatic manner—engaging in mending behavior, after a deviation from the desired state is felt. In such cases, they engage in a GDP process that allows them to remove the discrepancy between the desired and current states and revert to a state of stasis.

Two of the most influential theories of human motivation—Freud's (1923) foundational theory of human drives and Clark Hull's (1934) drive-reduction theory—view human life as a process of striving for homeostasis. These theories make predictions and draw conclusions about people's behavior when in a *drive state*, that is, when homeostasis is disturbed. They do not, however, discuss goal-directed behavior while the individual is still in the state of equilibrium, namely, when there is no discrepancy between one's current state and one's desired state.

Yet, as noted, people clearly do engage in proactive maintenance behavior (Duff, Harland, & Thangarajah, 2006), even when they are not in a drive state. For example, John does not need to be served with divorce papers to prepare a romantic dinner for his wife. He can engage in goal-directed behavior that anticipates the consequences of not investing in the maintenance of his relationship and can expend the resources needed to keep the flame alive.

GDA is not counteractive self-control

Engaging in GDA is often very important in situations wherein temptations that can disturb the stasis abound. For example, if John is trying to maintain his weight, he may reason that he should avoid passing by a bakery, knowing that his plan to eat healthier food could be foiled once he smells the baked goods. Such proactive strategies for dealing with temptation have been studied in the literature on "counteractive self-control" (Trope & Fishbach, 2000). This research has shown that individuals can effectively avoid temptations by using such means as precommitting to a specific behavior (and accepting sanctions if they break their commitment; e.g., Ariely & Wertenbroch, 2002; Trope & Fishbach, 2000); likewise, individuals can anticipate tempting obstacles (e.g., the baked goods) and devalue these temptations via a process termed "counteractive bolstering" (Fishbach, Zhang, & Trope, 2010).

It is important to note that the literature on proactive handling of temptations does not specifically pertain to GDA and discusses means that can help individuals succeed in both GDA and GDP. If John wants to maintain his weight, he can indeed rely on a precommitment strategy and pay for an expensive gym membership. However, John may use this precommitment strategy also when his goal is to lose weight, to become more muscular, to meet potential partners, and so forth.

GDA is not prevention orientation

Regulatory-focus theory (Higgins, 1998) divides human motivation into two basic orientations: promotion and prevention. Promotion orientation involves a focus on (achieving) positive outcomes, whereas prevention orientation involves a focus on (avoiding) negative outcomes. Research within regulatory focus theory has shown that some people tend to focus on potential positive outcomes and experience a sense of eagerness during goal-directed behavior; other people focus on the potential losses and experience a sense of vigilance during goal-directed behavior (Higgins, Shah, & Friedman, 1997).

It may seem as if GDA is simply prevention-oriented goal pursuit. Indeed, GDA is a process whereby an individual prevents a change to the status quo, and GDP is a process whereby an individual promotes some desired change. However, GDA can just as well be described as a process whereby an individual promotes preservation of the status quo, and GDP as a process whereby an individual prevents the perpetuation of an undesired state. Regulatory focus theory does not aim to provide an account of the (potentially distinct) mechanisms involved in maintaining a state or progressing. Rather, it is a theory of the motivational states that subserve goal-directed behavior, be it the pursuit of progress or of stasis. Most important, both GDA and GPA can be effectively pursued with either a promotion or a prevention focus.

For example, the attempt to maintain one's current weight (a GDA process) can manifest as prevention motivation, focusing on negative outcomes (e.g., "I have to keep eating healthy so that I don't become fat"). However, the same process of GDA can also be accomplished by focusing on positive outcomes (e.g., "By maintaining a healthy diet, I manage to keep looking great"). Likewise, the attempt to lose weight (a GDP process) can manifest as prevention motivation, focusing on negative outcomes (e.g., "I have to start eating healthy so that I stop being fat"). And yet, the same process of GDP can also be accomplished by focusing on positive outcomes (e.g., "If I will follow a healthy diet, I could look great"). Thus, the progress-maintenance axis is orthogonal to the regulatory focus axis.

This does not mean, however, that there is no correlation or affinity between GDA and prevention focus. For example, Brodscholl, Kober, and Higgins (2007) found that participants with a chronic prevention focus evaluated a prize more highly after pursuing it in a task in which tokens were to be maintained rather than attained. The opposite was true for participants with a chronic promotion focus. As such, it may be the case that the effective pursuit of maintenance goals is often associated with a prevention-focused motivational state. In light of this, as we discuss later, adopting a prevention mindset may have benefits for GDA.

The Cognitive Architecture of GDA

Can existing models of goal-directed behavior accommodate GDA?

As noted, research on the cognitive and motivational underpinnings of goal-directed behavior has generated rich theory and data. However, to date, the focus of the self-regulation literature has been almost exclusively on GDP. In fact, as noted earlier, the very notion of goal-directed behavior is often defined in a manner that excludes GDA, as common definitions describe the process of goal pursuit as the attempt to reduce the gap between one's current and desired states (Austin & Vancouver, 1996; Elliot & Fryer, 2008; Förster et al., 2007; Kruglanski, 1996).

Relying on such conceptualizations of goal-directed behavior, Carver and Scheier (1982) introduced a model that predicts people's efforts in pursuing a goal object by their rate of progress toward achieving it. The model assumes a system that detects deviations from the

anticipated rate of progress. Exceeding the anticipated rate creates positive affect, which in turn leads individuals to reduce their efforts toward that specific goal and move their efforts to the pursuit of another goal. In contrast, if the rate is slower than anticipated, negative affect is elicited and, as a result, people increase their effort in pursuing the goal. In GDA, however, there is no rate of progress and no anticipated progress, as the goal object is already attained. Therefore, Carver and Scheier's model, as well as other theories that rely on that model (Fishbach & Dhar, 2005; Louro, Pieters, & Zeelenberg, 2007), does not predict allocation of resources to maintenance.

One influential model that, at first glance, seems to address maintenance goals is Powers's (1973) cybernetic model. This model proposes that goal-directed behavior is regulated via a feedback-control system that compares an external input with a certain standard and operates to match the input to the standard; after each operation, the system compares the external input and the standard again, until the discrepancy between them is eliminated. Note that testing of the discrepancy between the standard and external input does not end when the discrepancy is eliminated; the system continues to monitor disturbances and ensure that the standard is met indefinitely. In virtue of this quality, Powers's model seems adequate to explain the task of incessant monitoring inherent in maintenance goal pursuit. However, although the system in Powers's model monitors situations in which there is no discrepancy, it does not operate on them. The individual begins to pursue a goal only when a discrepancy is found.

To allow a system to pursue stasis before any discrepancy is detected, the system must be able to anticipate the disturbance. Whereas the classic and most influential models of goal-directed behavior (e.g., Carver & Scheier, 1982; Powers, 1973) cannot account for allostasis, a recent computational model of goal-directed behavior, the multiple-goal-pursuit model (Vancouver, Weinhardt, & Vigo, 2014), does allow for allostatic processes. Similar to its antecedent models, the multiple-goal-pursuit model implements a feedback loop, wherein one's current state is continually compared with a desired state. However, this novel model includes an additional feedback loop that calculates a measure of expected disturbance and sends it to the main feedback loop. Thus, the goal object is considered as being attained (and efforts are relaxed) only when the current state exceeds the goal standard by the amount of expected disturbance.

How can an individual predict disturbances to the stasis before they occur? Within the multiple-goal-pursuit model, future disturbances are predicted on the basis of the feedback received concerning past disturbances. For instance, if John has had three failed marriages, he must have learned from them to predict when things are about to go sour. Indeed, in situations wherein disturbances to the stasis are repeatedly encountered, the challenge of allocating the effort needed to remain in place becomes quite tractable. However, in many cases, the task of GDA requires predicting previously unencountered scenarios. Even if John never divorced, he can still reason that he should invest in his relationship if he is to avoid drifting apart from his spouse. Despite the fact that humans are capable of such forward-thinking behavior, this capacity is unaccounted for by feedback-control models, including the multiple-goal pursuit model.

GDA heavily relies on prospective processes

For individuals to be able to predict previously unencountered scenarios, they must rely on their capacity for *prospection*—the ability to transcend the here and now and to imagine novel future states (e.g., Bar, 2009; Suddendorf, 2013). This capacity for prospection is believed to rely on an intricate cognitive architecture: To prospect, individuals need to retrieve relevant episodic and semantic memories and use these inputs during some process of mental simulation or logical inference, producing a model of a possible future reality that can be assessed for its plausibility and consequentiality (Suddendorf & Corballis, 2007).

Clearly, foresight is critical for any type of effective goal pursuit. If John wishes to ask Jane out on a first date, his ability to predict that inviting her to a romantic dinner at McDonald's would result in poor outcomes is crucial for his success. However, prospection plays a more inherent and necessary role in GDA. If John wishes to maintain the health of his marriage with Jane (and wishes to act before being served with divorce papers), his task entails an added layer of complexity: First, he must have the foresight to understand that if he does not spend the time going on date nights with his wife, she may grow distant; only then, he must predict what will constitute a romantic evening.

Another important challenge associated with the prospective nature of GDA concerns the cognitive complexity of quantifying the seriousness of potential disturbances. In the case of GDP, there is a clear and immediate discrepancy between one's current and desired states; thus, the process of making an informed decision on whether to act is rooted in concrete facts (e.g., the fact of my being hungry). However, in the case of GDA, a decision to act is strictly based on speculation, and the set of counterfactual worlds that

one needs to assess is potentially infinite. Consider the task of maintaining health; there are virtually innumerable threats that can disturb this goal: John should consider the possibility that he has poor cardiovascular health (and maybe start jogging), that he is exposed to pesticides (and maybe buy organic foods) and to air pollution (and maybe leave the city), and so forth. The cognitive complexity of assessing the seriousness of such a wide set of potential threats is likely what leads people to give up on GDA and decide to cross that bridge when they come to it.

Finally, aside from relying on the capacity for prospection, GDA also heavily relies on the capacity for *prospective memory* (e.g., Einstein & McDaniel, 1990)—the ability to remember to perform an intended future action. As can be attested to by numerous flowers and ferns that have perished because of their owners' unreliable watering regimen, the task of remembering that one needs to perform a maintenance behavior is highly fallible. Surely, prospective memory also plays an important role in the case of progress goals (e.g., remembering to go to the gym in order to lose weight). However, in GDP, the discrepancy between one's current state and desired state has the capacity to serve as an occasional wake-up call that spurs action (e.g., looking in the mirror and being reminded that you have put on a few pounds). In the case of GDA, wherein there is no discrepancy to remind you to act, prospective memory is of critical importance.

Thus, as we have shown, the importance of prospective processes in GDA stems from the absence of disturbances in the immediate reality. However, one can think of borderline scenarios in which there is no gap between an individual and his or her goal object but in which the disturbing forces have a strong and immediate presence. Imagine, for instance, a swimmer who exerts great effort in swimming against the current, for the purpose of remaining in the same place. In this case, one is engaging in GDA but need not rely on prospective processes. Such liminal cases highlight the fact that although GDA and GDP represent two distinct types, their manifestation may best be seen in graded rather than absolute terms.

To conclude, in light of the complexities of the cognitive operations typically required for effective GDA, it may not be surprising that people find maintenance behavior to be challenging (Stamatogiannakis, Chattopadhyay, & Chakravarti, 2010, 2011). Furthermore, as we detail in the next section, the process of GDA is also characterized by several unique motivational challenges that arise whenever individuals have to work hard just to maintain their current circumstances.

The Unique Motivational Challenges in GDA

Consider the state of public infrastructure in the United States. Despite the well-recognized and widely agreed-on importance of functioning dams, bridges, roads, and pipelines, they are currently in a state of disrepair because of a lack of public interest in routine maintenance operations and a severe lack of funding.[1] In the words of the satirist John Oliver, discussing the issue of infrastructure maintenance on *Last Week Tonight*,

> Infrastructure is like Legos: Building is fun, destroying is fun, but a Lego maintenance set would be the most boring fucking toy in the world. Oh, it comes built, and then you maintain it, and if you do it right, nothing happens, and eventually you die. (Oliver et al., 2015)

As noted, a central aspect of maintenance behavior is that people often experience it as more difficult and effortful than progress-related behavior (Stamatogiannakis et al., 2010, 2011). Next, we attempt to understand the difficulty of maintenance by examining the challenges of finding the motivation to engage in maintenance behavior at the biological, functional, and phenomenological levels of analysis.

The biological level

It is widely held that organisms have biological systems that regulate behavior in response to threats and opportunities that played an important role throughout the organism's evolutionary history (e.g., Kenrick & Shiota, 2008). More specifically, the motivational system comprises systems that promote approach toward appetitive stimuli (e.g., food, sex) and systems that promote the avoidance of aversive stimuli (e.g., noxious substances, predators). Indeed, research into neural bases of motivation has provided evidence for the existence of distinct systems that govern approach and avoidance behaviors (Elliot & Covington, 2001). For example, the mesolimbic dopamine system plays an important role in approach behavior (Alcaro & Panksepp, 2011), whereas other limbic systems play an important role in avoidance of aversive stimuli (Eddington, Dolcos, Cabeza, Krishnan, & Strauman, 2007; Rutherford & Lindell, 2011).

It is noteworthy that both the approach and avoidance systems seem to be activated in reaction to a discrepancy between the current state and the desired state (Elliot & Covington, 2001). When an organism is hungry, the approach system will recruit cognitive and energetic resources to seek food. Similarly, when the

organism senses a predator, the avoidance system will recruit the resources needed to escape it. In the case of allostasis, there is no need to avoid or to approach the goal object, as it is already exactly where it needs to be. Consequently, our biological systems for avoidance and approach may remain dormant and fail to motivate behavior.

The functional level

In life, there are always many more goals than one can pursue. This means that every act of goal pursuit has its "opportunity costs" (Kurzban, Duckworth, Kable, & Myers, 2013). To behave in an adaptive manner, individuals must be accountants of effort and gain, carefully choosing which action is worthwhile to pursue at a given time. Such calculations are often done in complex and messy environments, characterized by much uncertainty; in light of this, they are often supported by various simplifying assumptions and mental heuristics. Unfortunately, the heuristics that individuals use in the economics of goal-directed behavior often put the expenditure of resources on GDA at an inherent disadvantage.

Magnitude-of-discrepancy prioritization. Imagine a student studying for her final exams in physics and chemistry. She has already covered 20% of the material in physics and 80% of the material in chemistry. Given that she needs to pass both exams, it is probably better for her to focus her efforts on studying physics, rather than striving for a perfect grade in chemistry. More generally, many real-life situations are characterized by the law of diminishing returns (Smith, 1776/1838), wherein "the first bite of the apple is more rewarding than the last one" (and wherein the difference between a grade of A+ and A is much less meaningful than the difference between a D– and an F). Indeed, research on effort allocation in multiple goal environments shows that people abide by this normative prescription and often apply a discrepancy-reduction heuristic, wherein different goals are prioritized according to the extent to which the current state differs from the desired state (Schmidt & DeShon, 2007). Unfortunately, the application of such a heuristic will always push maintenance goals to the bottom of the to-do list. A testable hypothesis that stems from this dynamic is that individuals will find it harder to recruit the motivation to engage in maintenance behavior as compared with progress, especially when other, high-discrepancy goals are made salient. In other words, we predict that maintenance goals would be at an inherent disadvantage compared with progress goals when it comes to resource allocation.

Certainty-of-discrepancy prioritization. The greatest tragedy for a frugal agent is the expenditure of effort for absolutely no reason (Kurzban et al., 2013). In light of this, a central parameter in deciding whether or not to act on a specific goal is the certainty that the allocation of effort is required. In the situation of GDP, the existence of a discrepancy is a brute fact (e.g., my spouse is filing for divorce). In contrast, in the case of GDA, there is always the possibility that the discrepancy between the desired state and the actual state will never occur. In light of this, individuals often apply the "we'll cross that bridge when we come to it" heuristic (i.e., "Sure, maybe climate change is real, but maybe not. I will believe it when I see it. For now, we need to worry about coal mining jobs").

A testable hypothesis that stems from this dynamic is that individuals will find it easier to recruit the motivation to engage in maintenance behavior when the imminence of future discrepancies is made salient. Indeed, perhaps it is not surprising that research into the allocation of maintenance efforts in the domain of climate change suggests that communicating that the threat of environmental catastrophe is certain (rather than likely) produces strong effects on individuals' willingness to engage in this maintenance behavior (Jones, Hine, & Marks, 2017).

Rate-of-discrepancy-reduction prioritization. Although it is sometimes a good idea to invest efforts in the goal that is characterized by the highest level of discrepancy, another good heuristic is to focus on the goal wherein one is making the quickest gains. A scientist trying to decide whether to invest time in a research project that seems to rapidly advance toward publication, or a project that shows steady but slow progress, may choose to "run for the finish" and only afterward switch to investing in the slowly moving project. Individuals must consider their relative position with regard to a start or end point in order to calculate their rate of progress.

Indeed, much work in the goal-pursuit literature suggests that goal pursuit is heavily influenced by feedback on the progress rate away or toward some reference point (Bonezzi, Brendl, & De Angelis, 2011; Carver & Scheier, 1982; Fishbach & Dhar, 2005; C. Hull, 1934; Kivetz, Urminsky, & Zheng, 2006; Koo & Fishbach, 2012). Classic research shows that rats running toward a reward move progressively faster as they see that they are approaching their goal object (C. Hull, 1934). Humans, likewise, display heightened motivation with growing proximity to their goal objects (e.g., Kivetz et al., 2006). Similarly, research on the stuck-in-the-middle hypothesis (Bonezzi et al., 2011) suggests that increased proximity to the end point as well as proximity to the starting point have a motivating influence on goal pursuit. Whether one is approaching safe shores or just beginning one's trip, the proximity to a reference

point makes the (relative) progress rate highly salient and observable.

Feedback regarding rate of progress has little meaning when one wishes to maintain stasis. If Sisyphus lies at the top of the mountain next to his rock, he will not receive any feedback about his progress rate toward or away from the goal object. In fact, the progress rate cannot be defined in such situations. Consequently, the progress-dependent feedback that serves to prioritize and boost the allocation of mental and physical resources toward goal pursuit is unavailable in the case of GDA.

The phenomenological level

As highlighted by John Oliver in the case of the Lego maintenance set, a main problem with allostasis is that it is boring. The nature of maintenance pursuit is inherently repetitive: Whereas GDP involves an experience of longing or fear and entails constant changes in the intensity of that experience, GDA is characterized by an affective plateau, a sense of being comfortably numb. Such unchanging, routine behavior and experience over extended periods of time may cause boredom and decreased motivation (Foxx, 2013; Kurzban et al., 2013).

The aversiveness of boredom might have surprisingly negative effects on human behavior. Wilson et al. (2014) found that participants preferred to administer electric shocks to themselves rather than spend time alone in a room with nothing to do. The absence of diversity and stimulation and the experience of boredom also allow time for discouraging thoughts to creep into one's mind. Evidence to such an effect was provided by Stamatogiannakis et al. (2011), who found that participants generated more thoughts about possible obstacles and interferences when engaging in maintenance compared with progress tasks.

Finally, as noted earlier, to engage in GDA is to anticipate trouble. One does not go to routine checkups at the doctor unless one considers a future world that includes illness and even death. Whereas unpleasant thoughts are clearly present in the case of homeostatic GDP, wherein one is attempting to move away from an undesired state (e.g., investing efforts to cure an illness), the case of GDA is unique in that such depressing thoughts are potentially avoidable. In other words, to engage in GDA often means engaging in an effortful and goal-directed consideration of doom, in a situation wherein one can (potentially) afford to think much happier thoughts.

Strategies to Overcome the Motivational Challenges of GDA

As noted, recruiting the motivation to engage in GDA has its difficulties. Despite this, there is a marked scarcity of research that explicitly aims to help individuals during GDA. Below, we present a few possible strategies that could help overcome the difficulties associated with GDA, the efficacy of which warrants further investigation.

Alter the level of goal abstraction

One possible strategy to pursue a maintenance goal is to turn it into a progress goal. This can be accomplished by relying on the fact that the same goal object can be construed at different levels of abstraction (Liberman & Trope, 2008; Vallacher & Wegner, 1989). For instance, if John's goal is to maintain his current job, he can reframe it as a progress goal by focusing on more specific details, such as "finish this urgent report by Monday." By choosing a more concrete subgoal and focusing on it, John gains a progress goal that can better energize goal pursuit (Gollwitzer, 1999; Locke & Latham, 1990). Similar outcomes may be achieved by increasing the level of abstraction: John can look at the bigger picture and realize that the higher order goal in maintaining his job is to buy a house and raise a family, and because this goal object has yet to be attained, he can now progress toward it. Thus, future research can compare the effectiveness of adopting a more concrete/abstract goal-object construal during GDA (vs. GDP).

Keep aspiring for more

John could aspire to get a better position at work instead of maintaining his current position. In this way, instead of changing GDA to GDP by a shift in abstraction level, GDA becomes GDP by changing the goal object itself. In other words, if John just wants to remain at Point A, he could strive to get to Point A+1 and thus ensure that he remains (at least) in the same place.

Novemsky and Dhar (2005) presented participants with a choice between a reward that was consistently moderate and a reward that was more variable (i.e., sometimes higher and sometimes lower in value compared with the consistent reward). In this study, people were more likely to choose the variable reward that offered a chance for a higher level of fulfillment, but only when they were progressing well on their goal. In other words, when the participants' goal object was already achieved or close to achievement, they began to pursue the chance for higher rewards, indicating an upward shift in the desired level of goal achievement. This allowed the participants to preserve a discrepancy between actual and desired states.

The disadvantage of the upward shift is the constant need to change the actual goal object. This change is often accompanied by a necessity to invest more effort in the goal and by a reduced sense of satisfaction and

accomplishment. Constantly increasing the level of desired achievement might be a common way for some individuals to engage in GDA, leading to the impression that they are never satisfied with what they have. Whereas some people might actually desire to achieve ever-higher goals, others might be content with what they have but nonetheless compelled to pursue higher goals for lack of a better strategy to ensure successful maintenance.

The aspire-for-more method is suited only for cases in which the shift upward in the desired goal is beneficial and resources are ample. If John gets a promotion at work and consequently shifts his goal object toward an even higher position, he will probably have to work harder but might also gain greater rewards. However, even in such cases, this strategy is clearly wasteful. Constantly increasing the threshold for goal attainment instead of maintaining the already attained goal object is a waste of resources that can result in neglecting other important goals. Perhaps a classic example is that of the workaholic who invests an excessive amount of time at work at the expense of his or her family. Additionally, for some maintenance goals, this strategy is highly counterproductive; trying to constantly improve personal hygiene, for instance, would result in excessive behavior and poor rewards. In fact, it may manifest as compulsive behavior.

Adopt a prevention focus or simulate losses

As noted earlier, according to regulatory-focus theory (Higgins, 1998), individuals can pursue the same goal with a promotion orientation, which involves a focus on attaining/maintaining positive outcomes, or a prevention orientation, which involves a focus on (avoiding) negative outcomes. As explained earlier, this distinction is orthogonal to the GDA/GDP distinction: I can pursue a maintenance (or progress) goal by focusing on a negative outcome (e.g., "I have to keep eating healthy so that I don't become fat") or a positive one (e.g., "By maintaining a healthy diet, I manage to keep looking great").

Whereas both prevention and promotion framing can serve to motivate GDA, research has shown that the pursuit of a maintenance goal is facilitated by adopting a prevention orientation (Brodscholl et al., 2007). Prevention-focused participants valued a prize more when they worked to maintain it (i.e., when they believed that if they did not work hard, it would be taken away); in contrast, promotion-focused participants valued the prize more when they worked to attain it (i.e., when they believed that if they worked hard, they would receive the prize). This was the case whether the promotion/prevention focus was measured at the level of individuals or experimentally manipulated using a situational manipulation of a promotion/prevention mindset.

Thus, despite the many motivational disadvantages of GDA described earlier, it is possible to motivate GDA by tapping into the power of humans' strong aversion to losses (Kahneman, Knetsch, & Thaler, 1991). Broadly speaking, people greatly value the objects they already possess (see, e.g., the endowment effect; Kahneman, Knetsch, & Thaler, 1990). The problem of motivating GDA is not that attained goal objects are not appreciated; rather, the problem is in the under-appreciation of the need to act to preserve these goal objects.

Consider, for example, the case of climate change. It is well agreed-on that we need our planet in order to live. However, unfortunately, individuals' loss aversion is not easily triggered by the threat of an environmental apocalypse that (luckily, still) lies in the distant future (Rickard, Yang, & Schuldt, 2016). One strategy, often applied by climate change activists, is to attempt to generate within individuals a vivid and concrete mental image of the consequences of climate change (e.g., melting ice caps, flooded cities). By making counterfactual worlds visible and concrete, one can hope to cause individuals to behave as if future events are already a reality and spur them to prevent cataclysmic events before—rather than after—they occur (Jones et al., 2017).

Nonetheless, in some respects, simulated discrepancies will always be disadvantaged compared with actual experiences of discrepancy. For example, in many cases, simulated discrepancies are less vivid and evocative than actual discrepancies, most likely because of the uncertainty concerning their ontological status and the potential for numerous alternative simulations (for a review, see Gilead, Liberman, & Maril, 2012). Moreover, because mental simulation is a deliberate mental process, individuals are not obliged to engage in it, and indeed, they often choose not to (e.g., for reasons of limited capacity, motivated reasoning); in contrast, actual discrepancies in the world are brute facts—their existence is not a matter of our choosing.

Adopt a caregiving frame

Although the elicitation of fear can be a powerful means to recruit individuals' motivation to engage in GDA, it is possible that GDA can also be motivated by more pleasant affective states. It is argued that humans have a hardwired motivational system aimed at promoting parental nurturance and care (Darwin, 1871; McDougall, 1908). When activated, the purported parental caregiving system (Kenrick, Griskevicius, Neuberg, & Schaller, 2010) easily spurs humans to

engage in various behaviors aimed at ensuring the survival of offspring. It is possible that the parental caregiving motivation can produce maintenance-related behaviors that are easily perceived as means of their own.

A parent who prepares a sandwich for his or her child's school day may do so not out of the anxiety that the child will go hungry (i.e., a prevention-focused GDP) or out of the desire to see the child gain weight (i.e., a promotion-focused GDP). Rather, such goal-directed allostatic behavior, aimed at maintaining the well-being of one's child, may be accompanied and motivated by tender feelings of nurturance and love. Indeed, such behavior may not feel like a means to an end, but like an end in and of itself.

It is possible that the individuals' parental caregiving motivation can be co-opted to help individuals engage in care-related behaviors that are not directly related to maintaining the well-being of offspring. For example, situational factors that evoke the paternal instinct (e.g., Gilead & Liberman, 2014) might also improve GDA. For instance, when GDA is metaphorically framed or articulated in parental terms ("The city is our baby; let's keep it clean"), the mobilization of resources for that maintenance goal might be especially enhanced.

Employ strategic automaticity

Whereas this article focuses on highlighting the unique challenges associated with GDA (vs. GDP), there are obviously also advantages associated with the maintenance goal pursuit, and it is possible that individuals could leverage these advantages to facilitate GDA. For example, as noted, in many situations, maintenance behavior is quite repetitive. Repetition has the disadvantage of reducing task engagement because of boredom but the advantage of generating highly practiced routines that can be acted on in an almost automatic manner. Indeed, much research on "implementation intentions" (e.g., Gollwitzer, 1999, 2014) suggests that successful goal pursuit can be facilitated when individuals "strategically automatize" their behaviors and create simple rules wherein contextual cues automatically yield a given action. For example, if John wants to maintain the vitality of his relationship with his spouse, he can set up an implementation intention to buy her flowers whenever he walks by a flower shop. Surely, such implementation intentions benefit both GDA and GDP processes. However, a testable hypothesis is that because many maintenance tasks are highly repetitive and thus more automatable, implementation intentions could be especially beneficial in the context of GDA.

Enjoy the ride

Another way to mobilize individuals' resources toward GDA is to focus on enjoyment (Liberman & Dar, 2009) in order to evoke intrinsic motivation (Deci & Ryan, 1985), a state in which people view their behavior as a goal object in and of itself rather than as a means to an end (Kruglanski, 1975). Intrinsically motivated behavior and GDA share an important characteristic: the absence of a gap between actual and desired states. Although this is somewhat counterintuitive, research shows that the decision to relax efforts and adopt a more intrinsic view of the goal object can increase goal-object achievement (Deci & Ryan, 2012; Patall, Cooper, & Robinson, 2008). Relying on an intrinsic motivation as a strategy for GDA has clear advantages in that it reduces the experience of effort and increases well-being (Ryan & Deci, 2000).

However, not every goal can successfully become intrinsic. According to Ryan and Deci (2000), an activity must satisfy several basic psychological needs to enable intrinsic motivation: People must feel competent and autonomous in performing the activity, and they must interact with other people and feel connected to them with relation to the activity. Clearly, such requirements cannot be fulfilled by any maintenance activity. For example, the activity of washing one's hair is unlikely to make one feel competent, autonomous, or socially connected.

What types of GDA could make use of this strategy? Consider the case of behavior change interventions (Foxx, 2013): Could an addiction rehabilitation program encourage its patients to feel competent and autonomous in their everyday task to remain sober and to relate strongly to other people in relation to that task? In this case, the answer seems to be affirmative. In fact, many intervention programs have already adopted the principles of intrinsic motivation for treatment of addiction (Markland, Ryan, Tobin, & Rollnick, 2005; McLeroy, Norton, Kegler, Burdine, & Sumaya, 2003). These programs incorporate group support, an emphasis on personal values, and group feedback that encourages an experience of competence, all in the patients' daily routine.

The Importance of Studying GDA in the Domain of Mental Health

In this article, we argue that GDA is a distinct and consequential mental process that warrants consideration in theories and research into human motivation and cognition. The importance of the process of GDA may be most evident when considering the potential clinical implications of difficulties in GDA.

Clearly, successful completion of one's routine tasks—from maintaining basic hygiene to fulfilling professional duties and maintaining personal relationships—is crucial for the ability to accrue positive life experiences and the ability to overcome life's adversities. A failure to engage in GDA likely puts individuals at risk for

exposure to stressors such as losing one's job (e.g., Dooley, Catalano, & Wilson, 1994) and deprives them of stress-protective factors such as those associated with being in stable long-term relationships (e.g., Kawachi & Berkman, 2001). These circumstances, in turn, greatly increase the risk of developing mental illnesses such as depression (e.g., Marin et al., 2011) and substance abuse (e.g., Goeders, 2003). Furthermore, several specific mental illnesses might be associated with difficulties in GDA (but not in GDP). In fact, one possibility—which remains to be empirically investigated—is that difficulties with GDA could have some causal role in the development of several psychopathologies.

Consider, for example, borderline personality disorder, which is characterized by (a) unstable self-image and relationships, (b) chronic feelings of emptiness, and (c) impulsive and self-destructive behavior (American Psychiatric Association, 2013). As noted earlier, maintaining a stable social environment (e.g., relationships, occupation) requires investing in maintenance behaviors; as such, individuals who experience difficulties in GDA (but not with GDP) may exhibit a pattern of tumultuous social lives, wherein they repeatedly attain and then lose important life goals. Moreover, whenever individuals' difficulties with GDA do not prevent them from having sound social surroundings, such difficulties may still manifest in a reduced ability to find motivation and a sense of purpose during the pursuit of daily maintenance goals, which will likely lead to frequent feelings of boredom and emptiness. In response to this sense of emptiness, such individuals may be prone to seeking situations in which their preserved motivational systems (i.e., GDP systems for approach and avoidance) kick in; as such, they could be more likely to engage in reckless, sensation-seeking, and self-destructive behaviors.

As discussed earlier, individuals may respond to the challenges of GDA by relying on various compensatory strategies; those individuals who have more marked difficulties with GDA are probably more likely to overrely on such strategies. For example, difficulties in GDA may encourage individuals to adopt the aspire-for-more strategy, wherein maintenance goals are replaced with ever-increasing progress goals (e.g., maintaining your current weight by trying to lose weight). Unfortunately, in many instances of maintenance goals, shifting to a progress goal could lead to the excessive, maladaptive behaviors (e.g., excessive washing, checking, dieting, or eating) that are a major part of the symptomatology of obsessive-compulsive disorder. In light of this, it is possible that overcompensation for GDA difficulties plays a role in the development of obsessive-compulsive disorder.

Thus, a testable hypothesis is that despite the fact that individuals with borderline personality disorder and obsessive-compulsive disorder exhibit vastly different symptomatologies, these illnesses may stem from a shared underlying cause: impairments in neural and/or cognitive mechanisms that play an especially important role in GDA (e.g., prospective memory, prospection) and maladaptive/deficient self-regulatory strategies that people engage in to overcome the challenges of GDA (e.g., employing strategic automaticity, aspiring for more, altering goal abstraction). In light of this, we believe that there is room for further research that examines the degree of relative impairment in GDP and GDA processes across various mental illness, and especially in borderline personality disorder and obsessive-compulsive disorder.

Such a focus on the potential root causes of mental illness, rather than on the overt manifestations that characterize contemporary diagnoses, is in line with the recent Research Domain Criteria (RDoC) agenda of the National Institute of Mental Health (Insel et al., 2010). This framework aims to find remedies to mental illness by organizing research endeavors along a taxonomy of underlying systems that may subserve psychopathology. The taxonomy currently suggested by RDoC consists of five systems: negative valence systems, positive valence systems, cognitive systems, social processes, and arousal/regulatory systems.

For example, the negative valence systems (e.g., the response to acute threat, the response to frustrative nonrewards) and positive valence systems (e.g., approach motivation, expectancy/reward prediction error) of the RDoC domains capture processes associated with the affective/motivational substrates of GDP (which aim to reduce the discrepancy between the current state and the desired state). However, as noted before, GDA is not reducible to some type of long-term GDP. Likewise, the cognitive systems of the RDoC do not capture the unique cognitive challenges associated with GDA (e.g., prospective memory, prospection).

Yet, as we have argued herein, the process of GDA may play an important role in the etiology of different psychopathologies. In light of this, we believe that future work should investigate the potential benefits of incorporating the GDA/GDP distinction in developments of the RDoC framework.

Directions for Future Research

Further characterizing the GDA/GDP distinction

As exemplified throughout the article, human beings sometimes engage in proactive, goal-directed behaviors aimed at maintaining stasis. Inspired by the concept of physiological allostasis, we termed the mental process that subserves such behavior as the process of GDA.

We highlighted how this process differs from the process of GDP, wherein individuals strive to eliminate a discrepancy between their current and desired states.

Our discussion of GDP and GDA was based mainly on a theoretical analysis of the different functional, cognitive, and motivational characterizations of the two processes. Empirical research concerning the nature of the GDA/GDP distinction remains scarce. To date, research has documented some differences in phenomenology of GDA and GDP (e.g., Stamatogiannakis et al., 2010, 2011) as well as some situational factors that differentially affect the motivation to pursue progress rather than maintenance goals (e.g., Brodscholl et al., 2007). However, there are numerous aspects of the GDA versus GDP distinction that have yet to receive any empirical attention.

For example, future research should investigate the neural mechanisms involved in GDP versus GDA. As noted, we predict that compared with GDP, GDA should rely to a greater extent on neural mechanisms involved in prospection (D'Argembeau et al., 2010; Gilead, Liberman, & Maril, 2013; Szpunar, Spreng, & Schacter, 2014) and prospective memory (Burgess, Quayle, & Frith, 2001; Reynolds, West, & Braver, 2009). In contrast, GDP is likely to entail greater activation of limbic regions involved in both approach- and avoidance-related behaviors (Aupperle, Melrose, Francisco, Paulus, & Stein, 2015; Ernst & Fudge, 2009; Grahn, Parkinson, & Owen, 2008; Guitart-Masip et al., 2012).

Similarly, it is possible to examine the differences between GDA and GDP using different behavioral tasks that gauge prospection (e.g., Addis, Wong, & Schacter, 2008), prospective memory (Einstein & McDaniel, 1990), approach motivation (e.g., Treadway, Buckholtz, Schwartzman, Lambert, & Zald, 2009), and avoidance motivation (e.g., Labar, Ledoux, Spencer, & Phelps, 1995). A testable hypothesis is that difficulties in the performance of maintenance behavior will be specifically associated with trait- or state-level impairments in prospection and prospective memory but not necessarily with impairments in terms of the existing set of RDoC constructs (i.e., response to acute threat, response to frustrative nonrewards, approach motivation, expectancy/reward prediction error, working memory capacity, selective attention, etc.).

Measuring GDA success

One of the defining moments in research into motivation and self-regulation was the development of the marshmallow test (Mischel, Shoda, & Rodriguez, 1989), which provided investigators with a rigorous paradigm for measuring individuals' ability to resist short-term temptation for the sake of attaining greater long-term gains. This paradigm has spurred years of research into GDP processes and generated important insights concerning the determinants, stability, and consequences of effective self-regulation. Just as it is difficult to imagine research into GDP processes without the development of the marshmallow test, research into GDA probably cannot flourish without the development of paradigms to measure success in maintenance tasks. To date, such paradigms are completely absent.

Adequate measurement of maintenance behavior probably requires the use of experimental designs that examine behavior across extended periods of time. Fortunately, recent methodological advancements (e.g., the ability to run online, smartphone-based, and big-data studies) allow researchers to examine participants' maintenance behaviors for prolonged periods. It is now possible to conduct ecologically valid studies wherein participants' behavior before goal-object attainment (i.e., in the GDP phase) and after goal-object attainment (i.e., the GDA phase) can be compared.

For example, future research could use paradigms in which participants are asked to expend an amount of daily effort in order to acquire some prize; after attainment, participants will be notified that they need to continue expending some amount of effort in order not to lose the reward. A comparison of the intensity and frequency of behaviors in the GDP and GDA phases can provide a litmus test of the two processes. It is possible to characterize general laws of GDA across time (i.e., GDA gradients), similar to how the literature on GDP has described the time-dependent changes in intensity of behavior during the pursuit of progress goals (i.e., goal-proximity gradients; e.g., Bonezzi et al., 2011; Kivetz et al., 2006; Koo & Fishbach, 2012). Is maintenance behavior strongest immediately after goal attainment, or do individuals begin maintenance behaviors only after significant delays? Do individuals gradually form maintenance routines and develop predictable patterns of maintenance behavior over time? Such fundamental questions regarding goal-directed behavior are awaiting research.

Furthermore, future research could develop self-report questionnaires of participants' trait-level perceived difficulties in maintenance versus attainment-related behaviors. The use of both self-report and behavioral measures of GDA will be needed in order to examine whether there is stable and meaningful individual variation in individuals' GDA performance as well as to examine the extent to which GDP and GDA performances are separable at the level of the individual. To the extent that trait-level variability in GDA is indeed stable and diverges from that captured by GDP, there

will be a need for much research that investigates the relation between GDP/GDA and important life outcomes such as physical and mental health, scholastic and economic achievement, and maintenance of personal relationships.

Helping individuals during GDA

Earlier, we highlighted a host of potential strategies that may assist individuals to succeed in the pursuit of maintenance goals. Specifically, we suggested that GDA may be facilitated if individuals alter their level of goal abstraction, keep aspiring for more, adopt a prevention focus, adopt a caregiving frame, apply strategic automaticity, or simply enjoy the ride. As noted, there is a need for studies that examine the extent to which these (and other) regulatory strategies are effective or destructive and whether they can be taught and put to use in daily lives. Furthermore, future research should investigate whether improvements in GDA performance contribute to individuals' well-being and whether they can reduce psychopathology.

Aside from improving individuals' ability to succeed in maintenance behavior, there is also a grave need for research that aims to help individuals cope with the affective plateaus inherent to GDA. Recent studies have shown that participants who were placed in a monotonous and dull experimental setting chose to self-administer painful electric shocks (Nederkoorn, Vancleef, Wilkenhöner, Claes, & Havermans, 2016; Wilson et al., 2014). These findings exemplify the lengths to which people will go to distract themselves from feelings of boredom. And yet, despite years of fruitful research on emotion regulation (Gross, 1998, 2015), there is a marked absence of research into strategies and tools that could help individuals withstand boredom without resorting to self-destructive behaviors. As modern societies offer their citizens ever-increasing opportunities to distract themselves with novel fears and desires, psychological science should increase its efforts to help individuals cope with the sometimes-Sisyphean task of maintaining things as they are.

Concluding Remarks

This article highlights GDA as an important topic for scientific investigation. We argued that GDA is a distinct process that plays a crucial role in human life, is not accommodated by the classic models of goal-directed behavior, and has not received enough attention in psychological research. We discussed the unique cognitive and motivational challenges associated with GDA and highlighted several strategies—the efficacy of which should be studied in future work—to overcome these challenges. We suggested that acknowledging the distinction between GDA and GDP might be pivotal for modeling and predicting goal-pursuit behavior and for the study of mental illness and health. It is our hope that such future endeavors could yield useful insights and practical advice regarding the daily struggle to hold on to what we have.

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Note

1. See http://www.infrastructurereportcard.org/

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