

Why self-regulation success is not the opposite of failure

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Abstract

Inspired by some of current Western societies' most pressing problems, much research attention has been devoted to understanding self-regulation failure. While this has yielded some very valuable insights, the current paper underlines that understanding self-regulation failure does not mean that we also understand self-regulation success. Whereas failure and success are semantic antonyms, in terms of self-regulation research, they should not be regarded as mere opposites. First, on the process level, self-regulation success versus failure is not simply a matter of inverse explanatory factors (e.g., the capacity to inhibit impulses vs. a lack thereof). Second, on the outcome level, self-regulation success versus failure is not strictly a matter of inverse behavioral action (e.g., abstaining from versus indulging in immediate gratification). This has significant implications, the most important one being that to understand self-regulation success, researchers need to take a more holistic perspective rather than mainly considering single instances when studying self-regulation.

1 | INTRODUCTION

Self-regulation, which can be defined as people's ability to act in accordance with their long-term goals (Carver & Scheier, 2011; Milyavskaya, Inzlicht, Hope, & Koestner, 2015), has been a popular research topic for the last decades. This is creditable given the numerous and serious societal problems that can be traced back to self-regulation issues,

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often because people's immediate preferences do not concur with their long-term best interests. Think for example about obesity, where people overconsume on unhealthy foods and/or fail to perform sufficient physical exercise or financial debts, where people may focus too much on spending their money right now while disregarding their financial future. Inspired by such issues, research has largely focused on explaining and finding ways to prevent self-regulatory failure: which individual or situational factors increase the likelihood that people perform behaviors that hurt their long-term goals or well-being? For example, studies have investigated when people are more likely to select unhealthy snacks over healthy snacks (e.g., Honkanen, Olsen, Verplanken, & Tuu, 2012) or to opt for luxury products over utilitarian goods (e.g., Khan, Dhar, & Wertenbroch, 2005), identifying both situational (e.g., visceral states; Loewenstein, 1996) and individual difference factors (e.g., executive functions, Hofmann, Schmeichel, & Baddeley, 2012) that tend to be related to preferring immediate pleasure over long-term benefits. Though not always explicitly stated as such, outcomes are often regarded in a dichotomous way: Selecting options that provide immediate pleasure is considered self-regulation failure, while going for the options that bear long-term benefits is considered self-regulation success. Whereas failure and success are indeed semantic antonyms, in the present paper, I argue that in terms of self-regulation research, they should not be regarded as mere opposites. I will present two main arguments for this point of view: First, on the process level, self-regulation success versus failure is not simply a matter of inverse explanatory factors (e.g., the capacity to inhibit impulses vs. a lack thereof). Second, on the outcome level, self-regulation success versus failure is not strictly a matter of inverse behavioral action (e.g., abstaining from versus indulging in immediate gratification), especially not when considering single instances of behavior. Understanding how self-regulation success may not be the mere opposite of self-regulation failure has important implications and may inspire novel roads for research, to which I will provide some specific recommendations.

2 | IT IS NOT A MATTER OF INVERSE PROCESSES

One reason why self-regulation success is not simply the opposite of failure is that the underlying processes related to success and failure are quite different. Recent studies have shown that processes leading to self-regulation success are not simply the other side of the coin of the (much more frequently studied) processes leading to self-regulation failure. For example, a traditional viewpoint would be that self-regulation success requires effortful control of impulsive tendencies (Baumeister, Vohs, & Tice, 2007) and that self-regulation failure is caused by a lack thereof. This viewpoint resonates with explanations of behavior in terms of dual process models where impulsive, automatic ("System 1," Kahneman, 2011) processes need to be controlled by rational, deliberate ("System 2") processes in order for people to abstain from hedonic, short-term oriented behavior (e.g., Evans & Stanovich, 2013; Hofmann, Friese, & Strack, 2009). Moreover, it has been supported by an abundance of empirical findings showing that whenever people do not have the resources to exert effort to control their behavior—due to being tired, mentally occupied, in a visceral state (e.g., hungry, sexually aroused) or having exerted cognitive effort on a previous task—they are much more likely to opt for immediate gratification (i.e., "self-regulatory failure," Baumeister, Muraven, & Tice, 2000). Although the underlying mechanisms for these effects are currently debated (i.e., is it a lack of capacity or a lack of motivation that causes people to indulge; e.g., Inzlicht & Schmeichel, 2012), the observations in terms of behavioral outcomes are quite consistent in the sense that less deliberation leads to less beneficial outcomes (but see Dijksterhuis, Bos, Nordgren, & Van Baaren, 2006).

Following this reasoning, self-regulation success would be characterized by situations where rational, deliberate processes have room to be dominant. However, the "success story of self-regulation" has typically not been an explicit research focus in this line of work. More recent theoretical and empirical advances have shown that the implication that self-regulation success relies on effortful control is in fact flawed (see also Fujita, 2011). Not only has it been demonstrated that goal-directed (i.e., long-term oriented) behavior can be fostered by automatic processes (e.g., Trope & Fishbach, 2000) but also it has been shown that automatic processes in fact provide the main basis for self-regulation success (de Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012). For example, it has been illustrated that successful self-regulators tend to have better habits in the domains of healthy eating

(Adriaanse, Kroese, Gillebaart, & de Ridder, 2014) as well as exercising (Galla & Duckworth, 2015; Gillebaart & Adriaanse, 2017). Habits are adaptive routines that people perform automatically and (by definition) do not rely on effortful processes. Hence, these studies are speaking to the notion that self-regulation success may not necessarily be explained by being better able to (effortfully) resist temptations or to carefully deliberate one's choices. Rather, successful self-regulators rely on adaptive routines that make it easier for them to behave in accordance with their long-term interests. In addition, further studies have revealed that successful self-regulators may experience conflict from temptations less frequently (Hofmann, Baumeister, Förster, & Vohs, 2012; Milyavskaya & Inzlicht, 2017) and/or less strongly (Gillebaart, Schneider, & De Ridder, 2016). This could mean that successful self-regulators simply tend to avoid temptations and therefore have no need to exert effortful control to resist them (Ent, Baumeister, & Tice, 2015; Fishbach & Shah, 2006). Other work points to the possibility that once temptations are encountered, successful self-regulators are quicker to identify and/or resolve a self-regulation conflict on an implicit level (Gillebaart et al., 2016; Stillman, Medvedev, & Ferguson, 2017). Conflict identification is a necessary requirement for self-regulation processes to get activated, as pointed out by Counteractive Control Theory (Trope & Fishbach, 2000). Indeed, stronger perceived conflict has been found to promote successful resistance of temptations through adaptive automatic processes (Kroese, Evers, & De Ridder, 2011; Ozaki, Goto, Kobayashi, & Hofmann, 2017). Although these findings are currently somewhat scattered throughout the literature, it is essentially clear that multiple recent studies converge toward the idea that automatic processes play a crucial role in explaining self-regulation success.

Thus, while a lack of effortful control or deliberation can indeed lead to a preference for immediate gratification ("self-regulation failure"), it is not true that the opposite (i.e., the availability of effortful control) is required for self-regulation success. But is it still true that more deliberate choices are generally better choices in the long run? Not necessarily so. Also when people have ample resources to deliberate their choices, they may opt for immediate gratification, as most pronounced in the literature on licensing effects showing that people use and actively look for reasons to justify indulgence (De Witt Huberts, Evers, & De Ridder, 2014). Moreover, studies have shown that people who have more room for deliberation tend to be guided less by heuristics or situational cues, which—as long as these promote beneficial options (e.g., nudges)—may reduce the likelihood of them choosing the long-term "best" option (Cheung, Kroese, Fennis, & De Ridder, 2017; Gigerenzer & Gaissmaier, 2011; Salmon, Fennis, de Ridder, Adriaanse, & de Vet, 2014).

Altogether, it is not a matter of System 1 versus System 2 being more dominant in explaining self-regulation failure versus success, respectively, as both have been associated with both failure and success. It seems to be the case that successful self-regulators have oriented their System 1 processes toward more favorable outcomes by relying on adaptive habits, setting up one's environment so as to avoid temptations or being faster to identify and/or resolve self-regulation conflicts, thereby reducing the need for effortful control. Similarly, deliberate processes (associated with System 2) can be associated with resistance of temptations but also with planned (functional or dysfunctional) indulgence (De Witt Huberts et al., 2014; Prinsen, Dohle, Evers, Ridder, & Hofmann, 2018). Thus, it is important to note that understanding factors that are typically said to predict self-regulation failure (i.e., a dominant impulsive system, lack of effortful control) does not mean that their reverse (e.g., a dominant reflective system, effortful control) explain self-regulation success. This has important implications, the main one being that we cannot conclude much about self-regulation success if we design studies to predict self-regulation failure. Typical self-regulation research involves studies that assess people's responses to temptations (e.g., how they feel, think, or behave in response to temptations), and outcomes would be classified as relatively (un) successful based on the extent to which they are oriented toward indulgence or resistance. However, based on the reasoning presented above, I would like to argue that "less failure" is not the same as success. To study self-regulation success, we need other approaches that also allow for participants displaying strategies that, for example, make them avoid temptations altogether or allow for the use of adaptive routines. More specific suggestions for future research will be presented later in the paper. Crucially, thus, I argue that self-regulation success is not the opposite of failure in the sense that processes explaining success are not simply the other side of the coin of processes explaining failure.

3 | SELF-REGULATION SUCCESS VERSUS FAILURE IS NOT STRICTLY A MATTER OF INVERSE BEHAVIORAL ACTIONS

The second argument supporting the statement that self-regulation success is not the opposite of failure is that even on the outcome level, we cannot maintain that abstaining from temptation is indicative of “success” while the inverse, giving in to temptation, is a sign of “failure.” Typical examples of self-regulation dilemmas contend that selecting a virtuous option (e.g., a utilitarian product, a healthy food option, spending the night studying for an exam) is illustrative of self-regulatory success while selecting the conflicting vice option (e.g., a luxury product, an unhealthy food option, or spending the night in a bar with friends) would be self-regulatory failure. This focus on single instances of self-regulation dilemmas is seriously limited, however, when considering the bigger picture of self-regulation issues that we are trying to understand. That is, when considering the bigger picture, it is likely that individuals who experience true self-regulation issues (e.g., who are overweight or who have financial debts due to overconsumption) too frequently select vice options; however, it is not true that successful self-regulators always go for the virtuous alternatives. On the contrary, research suggests that people who are very strictly try to abstain from vices tend to be less successful than people who are a bit more lenient when dealing with their self-regulation dilemmas.

The suggestion that successful self-regulators do not always say “no” to temptations has been most clearly illustrated in the domain of healthy eating. One interesting observation in this regard may be what has been referred to as the “French paradox” (Rozin, Fischler, Imada, Sarubin, & Wrzesniewski, 1999): compared to Americans, the French seem to be much less concerned with dieting and instead enjoy the good life with their delicious bread, cheese, and wine; yet the prevalence of overweight and obesity is much lower in France than it is in the United States. This suggests that—despite or perhaps thanks to (Rozin, 2005) their love for food—without restraining themselves, the French are somehow more successful self-regulators in this domain nonetheless. Along the same lines, on an individual difference level, a typical finding is that so-called restrained eaters, who report to restrict their food intake as much as possible, tend to be less successful self-regulators as indicated for example by having higher BMIs (e.g., de Lauzon-Guillain et al., 2006) and being more likely to experience binge episodes as compared to nonrestrained eaters (Polivy, 1996). Thus, while it makes logic sense that always saying “yes” to temptation will contribute to self-regulation failure, being inclined to always say “no” to temptation is not a direct recipe for self-regulation success. Similar observations can be made when considering the bigger picture across domains where it has also been observed within individuals that restraining oneself can lead to adverse consequences: for example, people who (perceived to have) worked hard (de Witt Huberts, Evers, & De Ridder, 2012; Septianto, 2017) or did morally good deeds (Blanken, van de Ven, & Zeelenberg, 2015) were more likely to subsequently overconsume on hedonic, vice options (e.g., chocolate, luxury products), highlighting that initial diligence is not to be equated with overall self-regulation success. Thus, self-regulation success is not the opposite of self-regulation failure in the sense that it does not mean that abstaining from (vs. indulging in) temptations, particularly when judged from a single instance, is always characteristic of success.

On the other hand, it is also not true that giving in to temptations is always characteristic of self-regulation failure. Eating a piece of chocolate cake will not make anyone fat, and going out with friends will not directly lead to students failing their studies. Only if such choices are made over and over again, and if these are not sufficiently compensated, will actual problems arise. Quite on the contrary, one can argue that eating the cake and going for a night out serve other, equally important goals: e.g., enjoyment, relaxation, or having a fulfilling social life. Giving in to such temptations would then not necessarily be a sign of failure but in fact, be necessary for people to be successful in a broader sense. Evidence from the domain of healthy eating suggests that, indeed, people who are of healthy weights (i.e., who may be classified as successful self-regulators) indicate to gain pleasure from eating more so than people who are overweight (e.g., Epstein et al., 1989; Kuijer & Boyce, 2014). Even more telling are findings showing that planned hedonic deviations (i.e., deliberately giving in to temptation) can in fact be beneficial for long-term goal achievement (Coelho do Vale, Pieters, & Zeelenberg, 2016). Along these lines, scholars have recently suggested to distinguish between functional and dysfunctional self-licensing, where the former refers to self-justified diet violations (i.e., giving in to temptations) that help people adhere to their overall diet goals and is thereby related to self-regulatory

success (Prinsen, Dohle, Evers, de Ridder & Hofmann, 2018). The idea that not restraining oneself can sometimes have beneficial outcomes when considering the bigger picture could of course apply to other domains as well. For example, in the context of typical laboratory tasks that are used to assess self-regulatory strength, such as time of persistence on unsolvable anagrams, it has been argued that early quitting of the task (which would be denoted as self-regulatory failure) may actually be the wise decision to make: Why spend effort and time on a useless lab task while you may also need those resources for more important tasks later that day, like studying (De Ridder, Kroese, & Gillebaart, 2018)? Of course, we can also think of examples where a single instance of giving in to temptation does lead to serious problems (for example, when betting a large amount of money on the wrong number in the casino), but in general day-to-day behavior, it is clear that an observation of someone yielding to temptation is not necessarily indicative of him or her being an unsuccessful self-regulator.

Thus, I argue that self-regulation failure versus success is not simply a matter of indulging in versus abstaining from immediate gratification in single instances in the sense that (a) abstinence is not always “the best choice” and (b) indulgence is not always bad. Therefore, the insights gained from observing single instances of how people deal with temptations is limited. Instead, the crux of successful self-regulation may be the ability to balance abstinence and indulgence—something we have very little scientific insight in. Thus, to do justice to the actual self-regulation problems we are trying to understand, we need to be more aware of the bigger picture when it comes to self-regulation. I will get back to this point in the suggestions for future research.

4 | RECOMMENDATIONS FOR FUTURE RESEARCH

The central notion of this paper—that self-regulation success is not the mere opposite of failure—has important implications and leads to some crucial considerations for future research. First, to gain further understanding of the processes underlying self-regulation success, it is essential to address it as a distinct research topic, rather than drawing conclusions about its working mechanisms based on studies designed to examine self-regulation failure. Some important first work has already been conducted, such as briefly discussed above (e.g., Gillebaart et al., 2016; Gillebaart & Ridder, 2015; Stillman et al., 2017). From these initial steps, we gained essential insights that have changed the way we think about the underlying processes of successful self-regulation. Yet the road is still open for additional work in this domain that more specifically addresses the development and the interplay of automatic processes leading to self-regulation success. For example, it is important to gain a better understanding of how adaptive habits are naturally formed and how this relates to general self-regulation skills. One empirical question is whether people (or even young children) with strong self-regulation skills are more likely to develop adaptive habits or whether adaptive habits can be formed through other factors (parenting practices, physical environments) and in turn foster successful self-regulation (see Lally & Gardner, 2013, for relevant insights into the development of habits). Similarly, it would be helpful to know how automatic tendencies that help to identify and resolve conflicts come about and how they could be taught to people that do not yet benefit from such effortless strategies. For example, some studies suggest that mental associations between temptations and the conflicting goal—which have been shown to be characteristic of successful self-regulation by automatically activating goal-directed behavior upon exposure to temptations (Fishbach, Friedman, & Kruglanski, 2003)—can be formed through implementation intentions, indeed fostering later self-regulation success (Kroese, Adriaanse, Evers, & De Ridder, 2011; Van Koningsbruggen, Stroebe, Papies, & Aarts, 2011). An increased understanding of the (automatic) processes underlying self-regulatory success can further promote the development of strategies to increase levels of success in those who need it.

With regard to the interplay between different automatic processes, other exciting questions arise. These not only relate to the interplay between different automatic strategies that potentially underlie successful self-regulation but also to their interaction with environmental cues. For example, how are the experience and resolution of conflict related? The present literature allows for competing hypotheses, predicting either that weaker conflicts are easier to resolve or that successful conflict resolution is more likely for stronger conflicts because only those allow for the activation of appropriate defensive mechanisms (Ozaki et al., 2017; Kroese, Evers, & De Ridder, 2011). Similar questions are

still open with regard to the development of adaptive habits: Would it be wise to avoid temptations as much as possible, or should people gain experience to be able to successfully deal with temptations once they are encountered (e.g., Dewitte, Bruyneel, & Geyskens, 2009). For many of such questions, research has only just started to shed some light while also being challenged with contrasting findings. Thus, a first road for future research would be to further disentangle and understand the unique underlying processes explaining self-regulation success.

Second, it is most essential for future research to take on a more holistic approach considering repeated exposure to temptations instead of single instances. Only then can we gain more insight into the balancing and compensation processes that may be the actual basis of self-regulation success when looked at in a broader perspective. For example, what do people do after initial indulgence or restraint? Current findings are inconclusive on whether resisting an initial temptation makes people more (e.g., Baumeister et al., 2000) or less (Dewitte et al., 2009) likely to indulge in a subsequent temptation and similarly whether initial indulgence makes people more or less likely to subsequently restrain themselves. Hence, it is important to consider potential moderators for such effects. For example, how people construe instances of indulgence with respect to their self-regulation goals—e.g., can the indulgence be accounted for? Was it related to an independent, special occasion, or is the indulgence perceived as an irreparable breaking with one's standards?—could be an important factor that determines the effects of single lapses on overall self-regulation performance (e.g., Prinsen, Evers, et al., 2018; Steinmetz & Mussweiler, 2017). These initial attempts to understand repeated exposure to temptations are exciting and deserve further follow-up.

Furthermore, it would be interesting to look across domains in this regard. One question would be how indulgence or restraint in one domain may impact self-regulation when confronted with temptation in another domain. For example, would two women who just “shopped till they dropped” be more or less inclined to decline a muffin with their coffee, and what are the crucial determinants in this scenario? In this regard, topics like “control readiness” (Kleiman, Trope, & Amodio, 2016) may be very inspiring to consider. Another issue to investigate is whether people who are successful self-regulators in one domain are equally successful in other domains or what makes them more successful in one domain compared to the other (more practice, better habits, a more facilitating environment?). Some notable contributions to a more holistic view have been provided by recent experience sampling studies (Hofmann, W., Baumeister, R. F., Förster, G., & Vohs, K. D. 2012; Ozaki et al., 2017; Prinsen, Evers, et al., 2018), that—as pointed to above—have indeed challenged some of the insights that had been derived from earlier lab research. There could be even more to gain from experience sampling paradigms if we could place such data in idiosyncratic contexts, meaning that we interpret individuals' behavior in terms of their own current set of goals. That is, research tends to underappreciate the idea that goal intentions may be waxing and waning over time (e.g., Conroy, Elavsky, Hyde, & Doerksen, 2011), which has implications for the interpretation of people's behaviors in terms of self-regulatory success. Similarly, as discussed above, individuals can have multiple goals that at times may be conflicting, meaning that we need to know what people's currently prioritized goal is to be able to determine whether his or her behavior was in line with that goal. Thus, zooming out from single temptations to broader perspectives is essential to gain a more complete understanding of self-regulation in the context of real-world issues.

5 | FURTHER REFLECTIONS

Beyond providing specific pointers for future research, the current paper also brings forward some essential implications for research into self-regulation on a broader level. First, self-regulation research may need to take a step back and reflect on its ecological validity. It is important to carefully consider to what extent the tasks we use appropriately reflect the real-world problems we are trying to understand. Studying fundamental aspects of inhibitory control can probably be done very well using experimental lab paradigms, but when studying behavior that is supposedly more ecologically relevant (e.g., food choices), we can wonder whether lab studies are appropriate. On top of the serious limitations of studying single versus repeated instances of behavior as alluded to above, “success” versus “failure” can have different meanings in the context of a lab study than in real life (de Ridder, Kroese, & Gillebaart, 2018). For example, it might be considered very reasonable to indulge in chocolate chip cookies while participating in a boring lab study,

and giving up quickly on unsolvable anagrams could be an equally wise decision, at least not something we should necessarily call “self-regulation failure.” One important issue to consider is that participants at least have to have a true long-term goal to be able to define what is self-regulation failure and success (i.e., actions that would hurt or benefit their particular goal). This is not as self-evident as it may seem, as this goal is often implicitly inferred (“eating candy is never beneficial for future goals”) or externally imposed (“it is important to do this task as accurately as possible”). Moreover, participants may have multiple, conflicting goals, making it imperative to assess the extent to which a certain goal of interest is currently active and one of their top priorities. For example, participants may sincerely endorse the goal to maintain a healthy weight, but that does not mean that all of their actions are or should be devoted to reach that goal, especially not when they also endorse equally important goals that sometimes inherently collide. In sum, any behavioral outcome can only be interpreted in the context of participants’ (active) goals, thereby noting again that single lapses may not even qualify as “failure” in general. One way to deal with this would be to use participants’ subjective experience of failure or success as an outcome measure. However, even then the interpretation in terms of long-term self-regulation outcomes may not be straight-forward, as restrained eaters who would themselves qualify eating a cookie in the lab as an incidence of failure may ultimately not be better off (i.e., not be better self-regulators) compared to people who are a bit more lenient and do not see it as an act of failure but just enjoy the moment. Thus, while straight-forward solutions do not yet present themselves, taking into account the real-world problem that forms the basis for studying a particular self-regulation issue and pinpointing to what extent findings can be interpreted within or generalized to that context is challenging but of crucial importance for our work to be meaningful.

Relatedly, we can wonder whether paradigmatic cases of short-term temptation versus long-term goals (e.g., healthy versus unhealthy snack, partying versus studying) are sufficient to study self-regulation. Surely, successful self-regulation (by definition) involves adjusting one’s behavior in the service of long-term goals, but that is not all it entails. As alluded to in the section on automatic self-regulation processes, for example, successful self-regulation also involves adopting adaptive habits or employing smart strategies to avoid temptations altogether or to efficiently deal with them (Fujita, 2011). It is essential to study more of such proactive self-regulation behaviors, rather than only focusing on reactive processes (i.e., when a temptation is already there). That means that novel paradigms should be developed that actually allow for participants to use such proactive strategies. For example, a study by Ent et al. (2015) was designed to assess whether participants chose to expose themselves to temptations or not (by letting them choose to work in a noisy environment or in a quiet room), which offers a fresh perspective that goes beyond investigating how people behave when they already are in a tempting environment.

A final consideration is related to the language we use to talk about self-regulation “failure” and “success.” As highlighted in this paper, labeling certain behaviors as indicators of “failure” or “success” may be inappropriate without knowing the bigger context, where this bigger context involves (a) someone’s personal goals and (b) someone’s behavioral pattern over a longer period of time. A fitting suggestion would be to refrain from normative qualifications and instead report objective observations. For example, a researcher can report that “these participants were more likely to consume chocolate than those participants,” or report how much delay participants displayed in performing certain duties or report how much many utilitarian-oriented versus hedonically oriented choices participants made, without directly positioning this in a framework of self-regulation success and failure. Instead, qualifications of self-regulation success or failure should be used only in relation to the achievement of people’s personal goals. Together, these considerations may help to advance the study of self-regulation and further our understanding of self-regulation failure and success in relation to real-world issues.

6 | CONCLUSION

Understanding self-regulation failure has been an important endeavor in psychological research, as it pertains to some of current Western societies’ most pressing problems. Being able to explain self-regulation failure, however, does not mean that we also understand self-regulation success. The current paper showed that both in terms of underlying processes and in terms of single outcomes, failure and success cannot be considered mere opposites.

To move the field further, it is therefore important to (a) carefully consider what successful self-regulation entails, as it is obvious that it is more than being able to resist temptations, (b) design studies to specifically assess self-regulation success, rather than inferring success from studies designed to assess failure, and (c) take a more holistic approach to studying self-regulation, as single behavioral instances are not informative for long-term failure or success.

A remarkably large share of research on self-regulation has been devoted to understanding when and why people tend to give in to (single) temptations. Next to showing in what kinds of situations people are more likely to indulge, research has also zoomed in to further elucidate the underlying mechanisms of such findings. It is now time to zoom out and boost our efforts toward understanding the many other aspects of self-regulation, starting with a strong focus on self-regulatory success and keeping in mind the bigger picture of what it is we are really investigating.

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REFERENCES

- Adriaanse, M. A., Kroese, F. M., Gillebaart, M., & De Ridder, D. T. (2014). Effortless inhibition: Habit mediates the relation between self-control and unhealthy snack consumption. *Frontiers in Psychology*, 5, 444.
- Baumeister, R. F., Muraven, M., & Tice, D. M. (2000). Ego depletion: A resource model of volition, self-regulation, and controlled processing. *Social Cognition*, 18(2), 130–150. <https://doi.org/10.1521/soco.2000.18.2.130>
- Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, 16(6), 351–355. <https://doi.org/10.1111/j.1467-8721.2007.00534.x>
- Blanken, I., van de Ven, N., & Zeelenberg, M. (2015). A meta-analytic review of moral licensing. *Personality and Social Psychology Bulletin*, 41(4), 540–558. <https://doi.org/10.1177/0146167215572134>
- Carver, C. S., & Scheier, M. F. (2011). Self-regulation of action and affect. In R. F. Baumeister, & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (2nd ed.) (pp. 3–21). New York, NY: Guilford Press.
- Cheung, T. T., Kroese, F. M., Fennis, B. M., & De Ridder, D. T. (2017). The Hunger Games: Using hunger to promote healthy choices in self-control conflicts. *Appetite*, 116, 401–409. <https://doi.org/10.1016/j.appet.2017.05.020>
- Coelho do Vale, R., Pieters, R., & Zeelenberg, M. (2016). The benefits of behaving badly on occasion: Successful regulation by planned hedonic deviations. *Journal of Consumer Psychology*, 26(1), 17–28. <https://doi.org/10.1016/j.jcps.2015.05.001>
- Conroy, D. E., Elavsky, S., Hyde, A. L., & Doerksen, S. E. (2011). The dynamic nature of physical activity intentions: A within-person perspective on intention-behavior coupling. *Journal of Sport & Exercise Psychology*, 33, 807–827. <https://doi.org/10.1123/jsep.33.6.807>
- De Witt Huberts, J. C., Evers, C., & De Ridder, D. T. (2012). License to sin: Self-licensing as a mechanism underlying hedonic consumption. *European Journal of Social Psychology*, 42(4), 490–496. <https://doi.org/10.1002/ejsp.861>
- De Witt Huberts, J. C., Evers, C., & De Ridder, D. T. (2014). "Because I Am Worth It" a theoretical framework and empirical review of a justification-based account of self-regulation failure. *Personality and Social Psychology Review*, 18(2), 119–138. <https://doi.org/10.1177/1088868313507533>
- Dewitte, S., Bruyneel, S., & Geyskens, K. (2009). Self-regulating enhances self-regulation in subsequent consumer decisions involving similar response conflicts. *Journal of Consumer Research*, 36(3), 394–405. <https://doi.org/10.1086/598615>
- Dijksterhuis, A., Bos, M. W., Nordgren, L. F., & Van Baaren, R. B. (2006). On making the right choice: The deliberation-without-attention effect. *Science*, 311(5763), 1005–1007. <https://doi.org/10.1126/science.1121629>
- Ent, M. R., Baumeister, R. F., & Tice, D. M. (2015). Trait self-control and the avoidance of temptation. *Personality and Individual Differences*, 74, 12–15. <https://doi.org/10.1016/j.paid.2014.09.031>
- Epstein, L. H., Valoski, A., Wing, R. R., Perkins, K. A., Fernstrom, M., Marks, B., & McCurley, J. (1989). Perception of eating and exercise in children as a function of child and parent weight status. *Appetite*, 12(2), 105–118. [https://doi.org/10.1016/0195-6663\(89\)90100-1](https://doi.org/10.1016/0195-6663(89)90100-1)
- Evans, J. S. B., & Stanovich, K. E. (2013). Dual-process theories of higher cognition: Advancing the debate. *Perspectives on Psychological Science*, 8(3), 223–241. <https://doi.org/10.1177/1745691612460685>
- Fishbach, A., Friedman, R. S., & Kruglanski, A. W. (2003). Leading us not into temptation: Momentary allurements elicit overriding goal activation. *Journal of Personality and Social Psychology*, 84(2), 296–309. <https://doi.org/10.1037/0022-3514.84.2.296>

- Fishbach, A., & Shah, J. Y. (2006). Self-control in action: Implicit dispositions toward goals and away from temptations. *Journal of Personality and Social Psychology*, 90(5), 820–832. <https://doi.org/10.1037/0022-3514.90.5.820>
- Fujita, K. (2011). On conceptualizing self-control as more than the effortful inhibition of impulses. *Personality and Social Psychology Review*, 15(4), 352–366. <https://doi.org/10.1177/1088868311411165>
- Galla, B. M., & Duckworth, A. L. (2015). More than resisting temptation: Beneficial habits mediate the relationship between self-control and positive life outcomes. *Journal of Personality and Social Psychology*, 109(3), 508–525. <https://doi.org/10.1037/pspp0000026>
- Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic decision making. *Annual Review of Psychology*, 62, 451–482. <https://doi.org/10.1146/annurev-psych-120709-145346>
- Gillebaart, M., & Adriaanse, M. A. (2017). Self-control predicts exercise behavior by force of habit, a conceptual replication of Adriaanse et al.(2014). *Frontiers in Psychology*, 8, 190–xxx.
- Gillebaart, M., & Ridder, D. T. (2015). Effortless self-control: A novel perspective on response conflict strategies in trait self-control. *Social and Personality Psychology Compass*, 9(2), 88–99. <https://doi.org/10.1111/spc3.12160>
- Gillebaart, M., Schneider, I. K., & De Ridder, D. T. (2016). Effects of trait self-control on response conflict about healthy and unhealthy food. *Journal of Personality*, 84(6), 789–798. <https://doi.org/10.1111/jopy.12219>
- Hofmann, W., Baumeister, R. F., Förster, G., & Vohs, K. D. (2012). Everyday temptations: An experience sampling study of desire, conflict, and self-control. *Journal of Personality and Social Psychology*, 102(6), 1318–1335. <https://doi.org/10.1037/a0026545>
- Hofmann, W., Friese, M., & Strack, F. (2009). Impulse and self-control from a dual-systems perspective. *Perspectives on Psychological Science*, 4(2), 162–176. <https://doi.org/10.1111/j.1745-6924.2009.01116.x>
- Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self-regulation. *Trends in Cognitive Sciences*, 16(3), 174–180. <https://doi.org/10.1016/j.tics.2012.01.006>
- Honkanen, P., Olsen, S. O., Verplanken, B., & Tuu, H. H. (2012). Reflective and impulsive influences on unhealthy snacking. The moderating effects of food related self-control. *Appetite*, 58(2), 616–622. <https://doi.org/10.1016/j.appet.2011.11.019>
- Inzlicht, M., & Schmeichel, B. J. (2012). What is ego depletion? Toward a mechanistic revision of the resource model of self-control. *Perspectives on Psychological Science*, 7(5), 450–463. <https://doi.org/10.1177/1745691612454134>
- Kahneman, D. (2011). *Thinking, fast and slow*. New York: Farrar, Straus and Giroux.
- Khan, U., Dhar, R., & Wertenbroch, K. (2005). A behavioral decision theory perspective on hedonic and utilitarian choice. *Inside Consumption: Frontiers of Research on Consumer Motives, Goals, and Desires*, 1, 144–165.
- Kleiman, T., Trope, Y., & Amodio, D. M. (2016). Cognitive control modulates attention to food cues: Support for the control readiness model of self-control. *Brain and Cognition*, 110, 94–101. <https://doi.org/10.1016/j.bandc.2016.04.006>
- van Koningsbruggen, G. M., Stroebe, W., Papies, E. K., & Aarts, H. (2011). Implementation intentions as goal primes: Boosting self-control in tempting environments. *European Journal of Social Psychology*, 41(5), 551–557. <https://doi.org/10.1002/ejsp.799>
- Kroese, F. M., Adriaanse, M. A., Evers, C., & De Ridder, D. T. (2011). “Instant Success” turning temptations into cues for goal-directed behavior. *Personality and Social Psychology Bulletin*, 37(10), 1389–1397. <https://doi.org/10.1177/0146167211410889>
- Kroese, F. M., Evers, C., & De Ridder, D. T. (2011). Tricky treats: Paradoxical effects of temptation strength on self-regulation processes. *European Journal of Social Psychology*, 41(3), 281–288. <https://doi.org/10.1002/ejsp.771>
- Kuijer, R. G., & Boyce, J. A. (2014). Chocolate cake. Guilt or celebration? Associations with healthy eating attitudes, perceived behavioural control, intentions and weight-loss. *Appetite*, 74, 48–54. <https://doi.org/10.1016/j.appet.2013.11.013>
- Lally, P., & Gardner, B. (2013). Promoting habit formation. *Health Psychology Review*, 7(sup1), S137–S158. <https://doi.org/10.1080/17437199.2011.603640>
- de Lauzon-Guillain, B., Basdevant, A., Romon, M., Karlsson, J., Borys, J. M., Charles, M. A., & FLVS Study Group (2006). Is restrained eating a risk factor for weight gain in a general population? *The American Journal of Clinical Nutrition*, 83(1), 132–138. <https://doi.org/10.1093/ajcn/83.1.132>
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, 65(3), 272–292. <https://doi.org/10.1006/obhd.1996.0028>
- Milyavskaya, M., & Inzlicht, M. (2017). What's so great about self-control? Examining the importance of effortful self-control and temptation in predicting real-life depletion and goal attainment. *Social Psychological and Personality Science*, 8, 603–611. <https://doi.org/10.1177/1948550616679237>

- Milyavskaya, M., Inzlicht, M., Hope, N., & Koestner, R. (2015). Saying "no" to temptation: Want-to motivation improves self-regulation by reducing temptation rather than by increasing self-control. *Journal of Personality and Social Psychology*, 109(4), 677–693. <https://doi.org/10.1037/pspp0000045>
- Ozaki, Y., Goto, T., Kobayashi, M., & Hofmann, W. (2017). Counteractive control over temptations: Promoting resistance through enhanced perception of conflict and goal value. *Self and Identity*, 16(4), 439–459. <https://doi.org/10.1080/15298868.2016.1269668>
- Polivy, J. (1996). Psychological consequences of food restriction. *Journal of the American Dietetic Association*, 96(6), 589–592. [https://doi.org/10.1016/S0002-8223\(96\)00161-7](https://doi.org/10.1016/S0002-8223(96)00161-7)
- Prinsen, S., Dohle, S., Evers, C., de Ridder, D., & Hofmann, W. (2018). Introducing functional and dysfunctional self-licensing: Associations with indices of (un)successful dietary regulation. *Journal of Personality*. Advance online publication
- Prinsen, S., Evers, C., Wijngaards, L., van Vliet, R., & De Ridder, D. (2018). Does self-licensing benefit self-regulation over time? An Ecological Momentary Assessment study of food temptations. *Personality and Social Psychology Bulletin*, 44, 914–927. <https://doi.org/10.1177/0146167218754509>
- de Ridder, D., Kroese, F., & Gillebaart, M. (2018). Whatever happened to self-control? A proposal for integrating notions from trait self-control studies into state self-control research. *Motivation Science*, 4, 39–49. <https://doi.org/10.1037/mot0000062>
- de Ridder, D. T., Lensvelt-Mulders, G., Finkenauer, C., Stok, F. M., & Baumeister, R. F. (2012). Taking stock of self-control: A meta-analysis of how trait self-control relates to a wide range of behaviors. *Personality and Social Psychology Review*, 16(1), 76–99. <https://doi.org/10.1177/1088868311418749>
- Rozin, P. (2005). The meaning of food in our lives: A cross-cultural perspective on eating and well-being. *Journal of Nutrition Education and Behavior*, 37, S107–S112. [https://doi.org/10.1016/S1499-4046\(06\)60209-1](https://doi.org/10.1016/S1499-4046(06)60209-1)
- Rozin, P., Fischler, C., Imada, S., Sarubin, A., & Wrzesniewski, A. (1999). Attitudes to food and the role of food in life in the USA, Japan, Flemish Belgium and France: Possible implications for the diet–health debate. *Appetite*, 33(2), 163–180. <https://doi.org/10.1006/appe.1999.0244>
- Salmon, S. J., Fennis, B. M., de Ridder, D. T., Adriaanse, M. A., & De Vet, E. (2014). Health on impulse: When low self-control promotes healthy food choices. *Health Psychology*, 33(2), 103–109. <https://doi.org/10.1037/a0031785>
- Septianto, F. (2017). Work more and indulge more: Exploring the self-licensing effect of hard work on likelihood to purchase hedonic products. *Journal of Retailing and Consumer Services*, 34, 235–239. <https://doi.org/10.1016/j.jretconser.2016.10.012>
- Steinmetz, J., & Mussweiler, T. (2017). Only one small sin: How self-construal affects self-control. *British Journal of Social Psychology*, 56, 675–688. Advance online publication
- Stillman, P. E., Medvedev, D., & Ferguson, M. J. (2017). Resisting temptation: Tracking how self-control conflicts are successfully resolved in real time. *Psychological Science*, 28(9), 1240–1258. <https://doi.org/10.1177/0956797617705386>
- Trope, Y., & Fishbach, A. (2000). Counteractive self-control in overcoming temptation. *Journal of Personality and Social Psychology*, 79(4), 493–506. <https://doi.org/10.1037/0022-3514.79.4.493>

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