Effortless Self-Control: A Novel Perspective on Response Conflict Strategies in Trait Self-Control

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Abstract

Self-control is of invaluable importance for well-being. While previous research has focused on self-control failure, we introduce a new perspective on self-control, including the notion of effortless self-control, and a focus on self-control success rather than failure. We propose that effortless strategies of dealing with response conflict (i.e., competing behavioral tendencies) are what distinguishes successful self-controllers from less successful ones. While people with high trait self-control may recognize the potential for response conflict in self-control dilemmas, they do not seem to subjectively experience this conflict as much as people with low self-control. Two strategies may underlie this difference: avoidance of response conflict through adaptive, habitual behaviors, and the efficient downregulating of response conflict. These strategies as well as the role of response conflict are elaborated upon and discussed in the light of existing literature on self-control.

Self-control is regarded as pivotal in human evolution (Vohs & Baumeister, 2011). In line with this notion, many studies have demonstrated that the ability to self-control is vital for human functioning and that it leads to improved work and academic performance, more satisfying relationships, and basically healthier and happier lives (e.g., Duckworth & Seligman, 2005; Hofmann, Luhmann, Fischer, Vohs, & Baumeister, 2013; Mischel, Shoda, & Peake, 1988; Tangney, Baumeister, & Boone, 2004). In spite of the observation that self-control is crucial in resolving self-regulation dilemmas that require an individual to choose between an immediately rewarding option and a long-term goal that is ultimately more beneficial, self-control research has been focused on explaining self-regulation failure. In this paper we aim to unravel the mechanisms behind successful self-control, and we will do so by explaining that successful self-control relies on employing effortless strategies for dealing with response conflicts, such as avoiding response conflict and downregulating response conflict.

Self-Control As We Know It

Self-control is often defined as the ability to inhibit or overrule immediate urges to attain a long-term goal (Carver & Scheier, 1981, 1982; De Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012; Metcalfe & Mischel, 1999; Vohs & Baumeister, 2004), involving an 'active self' that is capable of prioritizing long-term over short-term goals (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Fujita, 2011). Self-control is most often required when people are faced with self-control dilemmas: situations in which a conflict between two different behavioral tendencies needs to be resolved. A prototypical example of such a dilemma concerns dealing with tempting foods, when people need to resist the temptation to devour a bag of crisps seated in front of the television which stands in contrast with their long-term goal of staying slim and healthy.

The dominant approach to self-control posits that people's ability to exert self-control is limited, meaning that self-control cannot be continuously used (Baumeister, 2002; Baumeister et al., 1998; Baumeister, Vohs, & Tice, 2007; Vohs & Heatherton, 2000). For example, after having resisted the temptation of having a delicious dessert in a restaurant in order to attain the long-term goal of a healthy weight, it would be more difficult to resist the urge to watch your favorite television show while you actually need to prepare for a job presentation tomorrow (Baumeister, Heatherton, & Tice, 1994; Baumeister et al., 1998; Baumeister, Gailliot, & Tice, 2009; Baumeister & Heatherton, 1996; Hagger, Wood, Stiff, & Chatzisarantis; Muraven & Baumeister, 2000). Because the self-control resource is limited in nature, as suggested by the self-control strength model (Baumeister et al., 1998; Baumeister et al., 2007), problems arise when self-control needs to be exerted in subsequent instances.

Effortful self-control and subsequent self-control depletion and failure, however, only highlight part of the story. While research tends to focus on understanding the mechanisms behind self-control *failure*, it is often overlooked that many people actually *succeed* in self-control performance. This is difficult to interpret when self-control is only defined in terms of effort and depletion. Knowing what constitutes self-control success would provide us with more comprehensive insights into the workings of self-control, as well as a foundation for thinking about interventions for improving self-control. We thus propose a new perspective, adding to the classic view on self-control as being solely concerned with the inhibition of unwanted impulses and therefore prone to depletion effects. We posit that we may learn from people who are naturally high in trait self-control. Although self-control can fluctuate within one person due to, for instance, previous exertions of self-control, self-control is also considered a personality trait that is stable over different situations and extended periods of time (De Ridder et al., 2012; Tangney et al., 2004). It is high trait self-control that has been shown to be predictive of a large range of positive outcomes such as increased well-being and better academic performance, while low trait self-control predicts a number of negative outcomes such as substance abuse (De Ridder et al., 2012; Duckworth & Seligman, 2005; Mischel, Cantor, & Feldman, 1996; Tangney et al., 2004). In this paper, we therefore aim to highlight the mechanisms behind high trait self-control as in being able, by definition, to successfully exert self-control in several subsequent instances. The idea of high trait self-control may seem at odds with the conception of self-control as being effortful and depending on a limited resource. However, we posit that there may be effortless routes to self-control success as well, and that these effortless routes will be most apparent in high trait self-controllers. Specifically, we propose a novel model of successful self-control, introducing the idea that high trait self-control relates to effortless rather than effortful strategies of dealing with self-control dilemmas and that it is therefore less sensitive to depletion effects caused by effortful attempts at self-control. It is important to note that we do not propose to abandon the strength model, but rather to expand our perspective on self-control by incorporating effortless routes to self-control which may better account for self-control success.

Automaticity in Self-Control

An area that has been largely ignored in the field of self-control research until recently is that of automaticity and its potential role in high trait self-control. Since automatic behaviors are performed without effort or awareness (Bargh, 1994), automaticity may play a large role in the proposed effortless route to self-control. Self-control is generally defined as the self's control over the self, referring to the ability to consciously and deliberately overrule impulsive behavior aimed at immediate gratification, and initiate behavior aimed at achieving long-term goals (Baumeister et al., 1994; De Boer, Van Hooft, & Bakker, 2011; De Ridder, De Boer, Lugtig,

Bakker, & Van Hooft, 2011; Tangney et al., 2004). This definition entails that self-control is mainly relevant for behavior performed under conscious control, when an 'active self' is involved (Baumeister et al., 1998; Mischel et al., 1996), precluding automatic self-control processes. However, it has been put forward that self-control does not only apply to behaviors that are under conscious and effortful control but is involved in automatic behaviors as well (Ferguson, 2008; Fishbach, Friedman, & Kruglanski, 2003; Fitzsimons & Bargh, 2004). A recent meta-analysis even showed a larger role for trait self-control in automatic behaviors than for behavior under conscious control (De Ridder et al., 2012). These findings give credit to the idea that people high in trait self-control make the desired choice in an automatized, effortless manner, suggesting that trait self-control does not so much involve effortful resistance of immediate urges on single occasions, but rather involves the ability of not being tempted or distracted by such urges at all. In terms of a resource account of self-control, this may mean that people in high trait self-control are less sensitive to depletion because they don't draw from their self-control resource when faced with potential self-control dilemmas, since they don't experience them as such.

People high in trait self-control may thus be successful in achieving their long-term goals and not being bothered by immediate concerns because they are not struggling with every temptation they face before making the desired decision. However, how they manage to do that and which effortless strategies they employ has not been investigated yet. As such, how successful self-controllers manage to exert self-control without effort has remained unclear hitherto. We suggest that high self-control is associated with different ways of dealing with the conflict of choosing between immediate gratifications and long-term goals.

The Central Role of Response Conflict

A core feature of self-control dilemmas is the occurrence and resolution of *response conflict* that is posed by immediate urges and impulses that may satisfy short-term goals on one hand, and the self-regulatory goals that are more rewarding in the long term on the other hand (Carver, 2005; Fishbach & Shen, 2014; Friese, Hofmann, & Wiers, 2011; Hofmann, Friese, & Strack, 2009; James, 1961/1892; Myrseth & Fishbach, 2009; Strack & Deutsch, 2004). Basically, response conflict presents individuals with competing behavioral tendencies (Myrseth & Fishbach, 2009). For instance, a typical self-control dilemma is experienced by a dieter who needs to choose between a tempting, immediately gratifying piece of double chocolate cake and the long-term goal of staying slim and healthy. The response conflict that arises confronts someone with the tendency to go for the cake and the competing tendency to resist the cake in order to stay slim and healthy. Someone who faces such a dilemma needs to resolve this conflict by either succumbing to the temptation or exerting self-control to resist the temptation in order to pursue the long-term goal (Myrseth & Fishbach, 2009). The observation that high self-control is associated with more adaptive routines (Adriaanse, Kroese, Gillebaart, & De Ridder, 2014; De Ridder et al., 2012) and more successful pursuit of long-term goals (Tangney et al., 2004) rather than with succumbing to temptations suggests that people high in trait self-control may not experience response conflict to the same extent or in the same way as people low in trait self-control, or that they have different strategies for dealing with arising response conflict. In line with this observation, initial findings from an experience sampling study in a large community sample shows that people with high trait self-control report fewer temptations in their environment than people with low trait self-control (Hofmann, Baumeister, Förster, & Vohs, 2012). Although this paper involved an online reporting of temptations, contributing to the validity of self-reports, it was not examined *why* people high in self-control report fewer temptations, precluding insight into the mechanisms that underlie the absence of being tempted by

potentially rewarding activities. However, the very finding that people high in self-control report not feeling tempted as frequently as people with low self-control implies that they either employ strategies to avoid potential response conflicts by installing adaptive routines, or that conflict is attended to but that a subsequent impulse is downregulated so efficiently that people do not report on it.

Avoiding response conflict

Automatic behaviors are strongly affected by trait self-control (De Ridder et al., 2012). Baumeister and Alquist (2009) have also suggested that trait self-control is associated with the ability to automatize behavior. As such, the automatization of certain behaviors may be one of the pathways to effortlessly exerting self-control by for instance avoiding response conflict. People regularly come across potential response conflicts, but often have the possibility to avoid them. For instance, in the supermarket, one can walk through the candy aisle, or not. If one walks through the candy aisle, it is plausible that response conflict will occur: will one succumb to the temptation of sugary sweetness, or will one resist this temptation in order to pursue one's long-term goal of healthiness? Not walking through the candy aisle would mean avoiding this conflict altogether. Similarly, one can avoid that bakery shop on the way to work when on a diet, that attractive coworker when in a relationship, or the television when one needs to study.

Response conflict avoidance can be effortful, and can even require an inhibition of impulsive behavior, but we propose that high trait self-controllers have automatized this behavior so that they effortlessly avoid the candy aisle and response conflicts in general. The most prototypical automatic behaviors are habits. Habits are routine behaviors that are triggered by cues in the environment. They typically occur automatically, that is to say, they occur outside of one's awareness, without investing self-regulatory effort. Habits are formed by repeatedly reinforcing the same cue-behavior link, and they are resistant to change (Ouellette & Wood, 1998; Verplanken & Orbell, 2003). Habitually avoiding response conflict may be a route to effortless self-control.

Several studies have demonstrated that the repeated exercise of behaviors that require self-control, such as monitoring one's expenses (Oaten & Cheng, 2007) or regularly engaging in physical exercise (Oaten & Cheng, 2006), leads to improved self-control both in terms of the behavior that was practiced (saving money, regular exercise) and in unrelated behavioral domains (such as less smoking, caffeine, and alcohol). For example, it was shown that participants who engaged in a 4-month money management plan by keeping a financial diary were able to quadruple their savings and also reported significant improvements in substance abuse, healthy eating, emotional control, maintenance of household chores, attendance to commitments, and study habits (Oaten & Cheng, 2007). As participants were also less prone to depletion effects in lab tasks, these findings were interpreted as an improvement of self-control by increased self-control strength. However, an alternative explanation of these findings is that self-control improved because of more habitually engaging in tasks that eventually required less effort because of their automatized nature. This would mean that there is more of the self-control resource left to be spent on other self-control tasks. As a consequence, people would then also be less depletion-prone when performing lab tasks.

Other research on improvement of self-control by repeated practice showed that such improvements are short-lived and may already vanish after 1 week (Bertrams & Schmeichel, 2014). Specifically, when participants practiced a behavior that required self-control (logical reasoning tasks) for only a brief period of 2 weeks (which is considerably shorter than the practice period of 4 months in the Oaten and Cheng study), these behaviors may not have become automatized, as installing effective routines generally takes about 66 days on average (ranging from 18 to 254 days) (Lally, Van Jaarsveld, Potts, & Wardle, 2010). These findings thus question

the claim made by researchers that self-control improvement by repeated practice relies on the 'improvement' of the generic self-control resource. In support of this notion, suggestive evidence exists demonstrating that repeated practice leads to self-control improvement by automating self-control rather than by increasing self-control strength. By doing tasks repeatedly for an extended period of time, these tasks may become habitual and, as a result, do not consume self-control resources anymore. Such reasoning does not only apply to installing adaptive habits but also to weaker nonadaptive habits, as implied by the meta-analytic findings on trait self-control (De Ridder et al., 2012). Indeed, recent research shows that high trait self-control also is associated with weaker undesired habits (specifically, unhealthy snacking habits) and that these weaker habits mediated the effects of self-control on the consumption of unhealthy snacks as recorded in a 1-week diary (Adriaanse et al., 2014).

Research into the association between automatic, habitual behaviors and self-control suggests that high trait self-control is associated with more adaptive habits, which might be because high trait self-controllers are better at automatizing behavior (Adriaanse et al., 2014; Baumeister & Alquist, 2009; De Ridder et al., 2012). This may lead to people with high trait self-control not experiencing the same response conflict as people with low self-control when faced with a potential self-control dilemma. When desired behaviors are automatized, they no longer require effortful execution, nor do temptations pose a self-control dilemma. However, the very finding that people with high trait self-control *report* not experiencing response conflict (Hofmann et al., 2012) does not mean it never arose in the first place. It might have, but may have been downregulated so efficiently that it is no longer reported on. Moreover, avoiding a response conflict is not always possible. For instance, while a candy aisle at the supermarket may be easy to avoid, being offered a piece of double chocolate fudge cake at a friend's birthday party may offer less possibilities for avoidance. Similarly, one may not always be able to avoid bakery shops when on a diet or attractive coworkers when in a relationship. We therefore propose that the downregulation of response conflict is another important strategy for successful self-controllers.

Downregulating response conflict

The previously discussed studies suggest that high trait self-control is associated with stronger adaptive habits and weaker nonadaptive habits. These results offer an explanation for the finding that people with high self-control are less prone to falling for temptation because they don't experience self-control conflict to the same extent as people with low self-control. Another explanation for the better chances of self-control success in people with high trait self-control may be that they *do* experience response conflict but have better or smarter strategies for dealing with it. Studies on potential (or objective) and experienced (or subjective) conflicts (Newby-Clark, McGregor, & Zanna, 2002; Kaplan, 1972; Priester & Petty, 1996) show that although people with high trait self-control *recognize* the same potential conflict when they perceive unhealthy tempting foods that are not in line with their goals of healthy eating, they do not *experience* this conflict to the same extent, implying that less self-control is actually needed to make the healthy long-term appropriate choice (Gillebaart, Schneider, & De Ridder, 2014). Additionally, people with high trait self-control actually report less potential as well as experienced conflict on healthy foods such as vegetables, which may be a consequence of the healthy habits that people with high trait self-control have installed.

Difficulties in overcoming impulses for immediate gratification are often driven by the hedonic activation that follows from exposure to tempting goods such as tasty foods, luxury consumer products, or opportunities for distraction (Metcalfe & Mischel, 1999). While it has been documented that hedonic activation may make people lose sight of their long-term goals,

it is unknown to what extent people with high and low trait self-control differ in (the regulation of) hedonic activation. If someone is not overwhelmed by desire to begin with, no self-control dilemma ensues, and no effortful exertion of self-control is necessary to resist such problematic desires. Recent research supports this idea. Hofmann et al. (2012) for instance demonstrated that people with high trait self-control experienced less strong desires for temptations and as a result reported lower conflict about how to respond to these desires.

However, desire and hedonic activation can also make a difference for high and low trait self-controllers via another, perhaps more strategic route. Imagine an arising response conflict when being offered a choice between some delicious double cheese nachos and some healthy veggies with a yoghurt dip. Would that response conflict become easier or harder to resolve if you have imagined all the hedonic properties of the nachos and you can almost taste them? Preliminary evidence shows that when asked to rate unhealthy yet palatable foods as well as healthy foods on hedonic attributes such as 'yummy', ' indulging', and 'scrumptious', people overall report that the unhealthy foods were more hedonically pleasing than healthy foods. Interestingly, trait self-control did *not* predict to what extent people ascribed hedonic properties to unhealthy yet palatable foods, nor did high trait self-controllers perform differently on tasks that implicitly assessed their hedonic activation following confrontation with these unhealthy foods (Gillebaart & De Ridder, 2014). However, self-control did predict how hedonically pleasing *healthy* foods were rated, with high trait self-controllers rating healthy foods as more yummy, indulging, and scrumptious as compared to low trait self-controllers (Gillebaart & De Ridder, 2014). In most self-control dilemmas, self-control failure is lurking because of the relative advantage of immediate hedonic activation in response to short-term gratifying objects like the nachos or the chocolate cake compared to the effect of the non-tempting choice alternative, like the veggies with a yoghurt dip (Metcalfe & Mischel, 1999). When that advantage is compensated, for instance through equal hedonic activation by the healthy option, the response conflict is attenuated and becomes much easier to solve, requiring less self-control resources. This notion also seems to be in line with research on counteractive control (Kroese, Evers, & De Ridder, 2009; Trope & Fishbach, 2000), which states that, in certain situations, temptations may actually facilitate self-control by activating the long-term goal that is threatened by the temptation at hand, and subsequently activates the desired behavior.

Effortless and Effortful Self-Control

In proposing a new model for effortless self-control, we add to the recently voiced concerns about the self-control strength model that proposes that depletion results from a limited self-control resource (Baumeister, 2002; Baumeister et al., 1998; Baumeister et al., 2007; Vohs & Heatherton, 2000). A growing number of studies challenge the assumption of a limited self-control resource that would account for depletion effects after initial self-control exertion, demonstrating that personal beliefs about willpower (Job, Dweck, & Walton, 2010), self-affirmation (Schmeichel & Vohs, 2009), mood (Tice, Baumeister, Shmueli, & Muraven, 2007), and incentives (Muraven & Slessareva, 2003) affect self-control depletion, leading to a novel interpretation of self-control depletion as being a motivation-driven and attention-driven process rather than a matter of resources (Inzlicht & Schmeichel, 2012; Inzlicht, Schmeichel, & Macrae, 2014). Yet, these critical accounts of the self-control depletion phenomenon remain true to the idea that the exertion of self-control is an effortful process and thus prone to failure, making it hard to believe how, if ever, self-control succeeds and supports people in achieving their goals. We have therefore proposed an alternative to the central notion of existing approaches that self-control by definition involves effortful inhibition and posited that successful self-control depends on smart strategies of dealing with the response conflict that is generated

by self-control dilemmas. These smart self-control strategies would be most pronounced in people with high trait self-control and may actually be what underlies their self-control success. Importantly, we do not argue for or against the strength model of self-control, but rather consider it an important stepping-stone in further research on self-control.

Trait versus situational self-control

In this paper, we have focused on trait self-control rather than the situational capacity for self-control that is determined by previous attempts at self-control, since high trait self-controllers are especially interesting when wanting to gain insight into successful self-control strategies. The relationship between trait self-control and situational self-control (a state of self-control-depletion) is actually poorly understood. Studies that focus on the interplay between trait self-control and depletion are scarce, and results from these studies do not seem to converge. Some studies show the depletion effect after an initial exertion of self-control in people with low trait self-control, but not or to a lesser extent for people with high trait self-control, suggesting a buffering or moderating effect of high trait self-control (DeWall, Baumeister, Stillman, & Gailliot, 2007; Dvorak & Simons, 2009; Gailliot & Baumeister, 2007). However, other studies show no moderating effect of trait self-control (Stillman, Tice, Fincham, & Lambert, 2009), or even an amplified effect, with high trait self-controllers experiencing more depletion than low trait self-controllers (Imhoff, Schmidt, & Gerstenberg, 2013). The relationship thus remains unclear, as do underlying mechanisms. One suggested mechanism for the buffering or moderating effect of high trait self-control, deemed the 'conservation hypothesis' holds that people high in trait self-control may make more efficient use of their self-control resources, keeping them available for later demanding tasks (Baumeister et al., 2007; Muraven, Shmueli, & Burkley, 2006). However, there is also research that does not support this conservation hypothesis (Job, Walton, Bernecker, & Dweck, in press), for instance, by demonstrating that high trait self-controllers do not perform better at a third or fourth task (Imhoff et al., 2013). Besides the conversation hypothesis, it has also been suggested that 'individuals high in trait self-control may have a larger pool of self-control resources at their disposal and therefore are less affected by self-control demands' (Muraven, Collins, Shiffman, & Paty, 2005, p. 145), implying that high trait self-control is equivalent to a larger self-control resource. However no direct evidence for a 'larger resource' exists. Although research on (trait) self-control involves approaches beyond depletion paradigms (see, for a review, Duckworth & Kern, 2011), the bulk of the studies done on self-control and its mechanisms has been confined to dual or sequential task paradigms. We suggest a more open perspective on self-control and thus highlight the role of trait self-control separate from depletion effects in explaining how self-control without effort may operate.

Discussion

Many scholars have emphasized the invaluable importance of self-control for happy, healthy, and successful lives (e.g., De Ridder et al., 2012; Duckworth & Seligman, 2005; Hofmann et al., 2013; Tangney et al., 2004; Vohs & Baumeister, 2011). However, research on self-control has been dominated by a focus on self-control failure rather than success, with the self-control resource model at its core (Baumeister et al., 1998). In this paper, we have proposed a more open perspective on self-control, including the novel notion of effortless self-control, and a focus on self-control success rather than on failure. By focusing on what makes people who are good at self-control good at it, we may be able to identify relatively effortless strategies towards self-control success.

We have proposed that response conflict plays a central role in self-control in general (see also Carver, 2005; Fishbach & Shen, 2014; Friese et al., 2011; Hofmann et al., 2009; Myrseth & Fishbach, 2009; Strack & Deutsch, 2004), and that smart effortless strategies of dealing with these response conflicts are what distinguishes successful self-controllers from less successful self-controllers. While it has been acknowledged previously that handling response conflict between impulse and long-term goals is crucial in self-control dilemmas, until now the dominant view has been that people either give in to the temptation (leading to self-regulation failure) or resist (leading to self-regulation success) (Myrseth & Fishbach, 2009). However, people with high trait self-control seem to have different ways of dealing with response conflict, which suggest that there is a third hitherto unexplored option that people engage in smart effortless strategies to resolve the self-control dilemma. Interestingly, while people with high trait self-control *recognize* the potential for response conflict in certain tempting objects like palatable yet unhealthy foods, they also report not subjectively experiencing this conflict (Hofmann et al., 2012; Gillebaart, Schneider, & De Ridder, 2014). This lack of experiencing response conflict can be due to two different strategies: either response conflict truly does not occur to the same extent as it does for people with low self-control or it does occur, but is downregulated very efficiently. Evidence suggests that stronger adaptive and weaker unadaptive habits or automatic behaviors may play an important part in avoiding response conflict altogether (Adriaanse et al., 2014; De Ridder et al., 2012). There is also preliminary evidence suggesting that people with high self-control have relatively effortless strategies for *regulating* response conflict. For instance, successful self-controllers assign hedonic properties that are commonly paired with unhealthy temptations to healthy, long-term goal supportive objects like healthy foods to attenuate the response conflict (Gillebaart & De Ridder, 2014).

Implications and future directions

The importance of self-control in behaviors related to academic behaviors, relationships, and health behaviors is clear. Overall, self-control has shown to lead to health, happiness, and increased well-being (De Ridder et al., 2012; Hofmann et al., 2013; Tangney et al., 2004). As much of self-control research is focused on self-control failure, interventions in for instance the health psychology area have often focused on 'strengthening' or increasing self-control (Herman & Polivy, 2011; Muraven, 2010; Oaten & Cheng, 2006, 2007). However, these types of interventions seem to be ineffective, for instance, in the area of unhealthy food choices (Herman & Polivy, 2011; Michie, Abraham, Whittington, McAteer, & Gupta, 2009).

Another and perhaps more promising way to support people in handling self-control dilemmas is provided by our new perspective on self-control. While the dominant view on self-control is one of effort and depletion (Baumeister, 2002; Baumeister & Heatherton, 1996; Baumeister et al., 1994; Baumeister et al., 1998; Hagger, Wood, Stiff, & Chatzisarantis, 2010; Inzlicht & Gutsell, 2007; Muraven & Baumeister, 2000), our perspective is somewhat broader: by focusing on people that are 'naturally' high in trait self-control and learning what strategies they use in order to successfully exert self-control throughout their lives, without depletion, we lay the groundwork for interventions and training that focus on relatively effortlessly using self-control to make choices that support people's long-term goals. The proposed self-control strategies may not fit with the typical view on self-control, and one may wonder if they can be defined as such. Indeed, exploring effortless self-control goes beyond the classic view of self-control as effortful inhibition only. However, we agree with recent research that converges on the need for an extension of this classic definition (Adriaanse et al., 2014; De Ridder et al., 2012; Fujita, 2011) and posit that there are successful, effortless self-control strategies in addition to impulse inhibition.

An example of a promising avenue in terms of further research into the underlying mechanisms of effortless self-control is that of adaptive habits. Recent research has found that people high in trait self-control seem to have more adaptive habits, making it easier for them to perform behaviors in line with their long-term goals (Adriaanse et al., 2014; De Ridder et al., 2012). This implies that people high in self-control may be better and/or faster in creating these adaptive habits. Future research could for instance make use of implementation intentions to test this idea. Implementation intentions are defined as goal intentions that are coupled with specific situation-behavior action plans, like 'if I am home and I want to have some dessert after dinner, then I will make myself a fruit salad' (Adriaanse, Vinkers, De Ridder, Hox, & De Wit, 2011; Gollwitzer, 1999). Multiple studies have shown that these implementation intentions are more effective in terms of goal pursuit than simple, more general goal intentions (Gollwitzer & Brandstätter, 1997). Moreover, implementation intentions lead to 'instant habits' and are equally well-suited to break bad habits, like unhealthy snacking habits (Gollwitzer & Sheeran, 2006; Kroese, Adriaanse, Evers, & De Ridder, 2011). As self-control is strongly associated with automatic behaviors such as habits (De Ridder et al., 2012), it is plausible that implementation intentions would be more effective in people with high self-control than in people with low self-control, which would be a promising avenue for future research.

Trait self-control is usually measured via self-report questionnaires such as the Self-Control Scale (Tangney et al., 2004). This means that some caution is warranted, since self-reports in general are vulnerable to problems like social desirability, as is the Self-Control Scale (Tangney et al., 2004). However, self-report measures of trait self-control have shown convergent validity with behavioral measures such as executive control and delay of gratification tasks (Duckworth & Kern, 2011). Moreover, the Self-Control Scale predicts a range of short-term as well as long-term behaviors (De Ridder et al., 2012; Tangney et al., 2004). As such, it is a valuable, valid measure. However, combining self-report with behavioral measures (Duckworth & Seligman, 2005) should be considered in future research into trait self-control strategies.

Of course, more research into successful yet effortless self-control strategies is needed to support our hypotheses and to form a basis for developing policies, interventions, training, and treatments that are based on effortless ways of exerting self-control. As a result, self-control success will be less sensitive to motivational problems as well as depletion effects.

Conclusion

Summarizing, broadening the perspective on self-control to include self-control success allows for the possibility of effortless self-control. Examining the mechanisms and strategies used by people who are high in trait self-control offers a promising avenue for future research as well as interventions that will allow us to use our self-control effectively and effortlessly.

Short Biographies

Marleen Gillebaart is a postdoctoral researcher in the Self-Regulation Lab at Utrecht University. She specializes in self-regulation and more specifically in self-control. Her research focuses on the possible pathways to an effortless form of self-control.

Denise de Ridder is a professor of Health Psychology at Utrecht University. Her research examines the interplay between reflective and reflexive processes in health behavior with a particular focus on the role of self-control.

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