Motivation and self-regulation: The role of want-to motivation in the processes underlying self-regulation and self-control

Kaitlyn M. Werner and Marina Milyavskaya

Carleton University

In press, Social and Personality Psychology Compass

Corresponding Authors:

Kaitlyn M. Werner, MSc.
Department of Psychology
Carleton University
1125 Colonel By Drive
Ottawa, Ontario, Canada, K1S 5B6.
kaitlyn.werner@carleton.ca

Marina Milyavskaya, PhD
Department of Psychology
Carleton University
1125 Colonel By Drive
Ottawa, Ontario, Canada, K1S 5B6.
marina.milyavskaya@carleton.ca

Werner, K. M., & Milyavskaya, M. (in-press). Motivation and self-regulation: The role of want-to motivation in the processes underlying self-regulation and self-control. *Social and Personality Psychology Compass*.

Author note: K. Werner and M. Milyavskaya contributed equally to this work. Order of authorship was determined by the top score each person received across all three levels of the official Pottermore “Back to Hogwarts Quiz.” For information about the exact scores (and houses), please contact the authors.

Acknowledgements: We would like to thank Wilhelm Hofmann, Michael Inzlicht, and Isabelle Leduc-Cummings for their insightful feedback on these ideas.

Abstract

Research on self-regulation has largely focused on the idea of effortful self-control, which assumes that exerting willpower will lead to greater success. However, in recent years, research has challenged this perspective and instead proposes that effortless self-regulation is more adaptive for long-term goal pursuit. Taking into consideration the burgeoning literature on effortless self-regulation, here we propose that motivation – or the reasons why we pursue our goals – plays an integral role in this process. The objective of the present paper is thus to highlight how motivation can play a role in how self-regulation unfolds. Specifically, we propose that pursuing goals because you *want-to* (vs. *have-to*) is associated with better goal attainment as a function of experiencing less temptations and obstacles. While the reason why want-to motivation relates to experiencing fewer obstacles has yet to be thoroughly explored, here we propose some potential mechanisms drawing from recent research on self-regulation. We also provide recommendations for future research, highlighting the importance of considering motivation in the study of self-regulatory processes.

Key words: goal motivation, self-regulation, self-control, autonomy, temptation; goal pursuit; effortless self-control

Motivation and self-regulation: The role of want-to motivation in the processes underlying self-regulation and self-control

Self-control has long been touted as the key to success – the more willpower you have, the more likely you are to lead a happy, healthy, and financially prosperous life (Hofmann, Luhmann, Fisher, Vohs, & Baumeister, 2014; Moffitt et al., 2011; Tangney, Baumeister, & Boone, 2004). However, as anyone who has tried to pursue a goal knows, self-control is not always successful. We eat the delicious cake knowing that it conflicts with our health goals, continuously ignore the “are you still watching?” prompt when bingeing Netflix instead of working on our assignments, or spend \$5 on a latte every morning despite wanting to start that retirement account. While questions regarding such self-regulatory dilemmas have been of prominent interest to psychologists for decades, there has yet to be a promising answer on how to best overcome them to achieve important long-term goals. While research has largely focused on the characteristics of the desires that compete with our goals, the characteristics of the goals themselves has been largely overlooked. Here we propose that our motivation, or the reasons why we are pursuing our goals, can play a role in the process of goal pursuit, including how we handle the push-and-pull between passion (i.e., temptations) and virtue (i.e., pursuit of long-term goals). Therefore, the objective of this paper is to discuss the association between motivation and self-regulation, specifically highlighting how different types of motivation are related to self-regulatory processes.

Self-Regulation and Self-Control

Starting with the Greek philosopher Plato who compared self-control to a chariot racer controlling wild horses, the idea of exerting willpower in the service of regulating the self has been a prominent topic for philosophy and psychology. Although there is still some debate on the

definition of self-control (Fujita, 2011; Gillebaart, 2018; Milyavskaya, Berkman, & De Ridder, 2018), here we define it as “the effortful inhibition of an immediately gratifying behavior or impulse” (Milyavskaya & Inzlicht, 2018, pg. 11). The need for self-control specifically arises when an individual is faced with a decision to choose between competing options: choosing a pleasurable outcome *right now* versus engaging in less immediately pleasurable behaviours congruent with their long-term goals. In this regard, the use of the term self-control specifically applies to instances when such conflicts are experienced in the moment – when choosing between the chocolate cake and apple for dessert, between buying an expensive watch and saving for retirement, or between watching television and going to the gym. When considering the larger picture of the goal pursuit process, these experiences only tell part of the story. Taking a broader perspective, we refer to self-regulation as any process by which an organism regulates its state, encompassing all manners of goal pursuit (Carver & Scheier, 1982). This includes (but is not limited to) the process of goal setting, making plans and developing strategies for goal striving, carrying out behaviours in the service of the goal, goal disengagement, and balancing the pursuit of multiple goals. Essentially, self-regulation is an umbrella term that captures the entire process of goal pursuit, a small part of which includes self-control (Gillebaart, 2018; Milyavskaya et al., 2018).

For the past several decades, the most prominent theory of self-control has been the dual-process model, which pits immediate impulses against broader, long-term goals (e.g., Hofmann, Friese, & Strack, 2009; James, 1890; Metcalfe & Mischel, 1999). The impulses arise from the immediate hedonic value of a specific stimulus, leading to an automatic inclination to perform a behaviour aimed at satisfying the desire (Hofmann et al., 2009; Hofmann & Van Dillen, 2012). Although acting on our desires is not inherently bad (Kopetz, Woerner, & Briskin, 2018), it

becomes problematic when they interfere with our longer-term goals and can have negative consequences on long-term health and well-being (e.g., de Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012; Duckworth & Seligman, 2005). To further clarify this distinction, we will refer to desires that generate a sense of conflict (i.e., “problematic” desires) as *temptations*. Traditionally speaking, it has long been assumed that active control is needed to suppress these impulses (Hofmann et al., 2009), and doing so would be a conscious, deliberate, and effortful process (rather than automatic; Metcalfe & Mischel, 1999). This dual-process view was reflected in the myriad of studies focusing on our capacity and motivation for restraint, including research on ego-depletion (Baumeister, Bratslavsky, Muraven, & Tice, 1998; although see Frieze, Loschelder, Gieseler, Frankenbach, & Inzlicht, 2018 for a more recent overview) and the use of self-control in overcoming temptations (Trope & Fishbach, 2000).

Standing in contrast to more effortful forms of self-control, more recent theorizing proposes the idea that that self-control can unfold more effortlessly (Fujita, 2011; Gillebaart & De Ridder, 2015), whereby in some cases (and/or for some people), self-control happens automatically. Given that our definition of self-control involves the use of effort (see above), here we use the term *effortless self-regulation*. Effortless self-regulation occurs when self-regulatory processes unfold automatically or habitually, and even when the most proximal motivation for a behaviour is not the focal goal, but rather a person’s preferences. For example, if I like apples, having an apple for a snack represents an instance of successful self-regulation even if I did not think about my health goal at the moment when I chose the apple (i.e., the selection was based on my taste preferences).

In support of effortless self-regulation, research has shown that reminding people of one goal automatically inhibits the accessibility of alternate (competing) goals/temptations (Shah,

Friedman, & Kruglanski, 2002), and that reminders of a temptation automatically activate thoughts of the focal goal (Fishbach, Friedman, & Kruglanski, 2003). Similarly, other research has also found that, in some cases, people automatically push away temptations and pull goals closer to themselves (Fishbach & Shah, 2006). Meanwhile, research finds that individuals high on trait self-control experience fewer temptations that conflict with one's goals (Hofmann, Baumeister, Förster, & Vohs, 2012), and that the link with trait self-control is larger for automatized rather than controlled behaviours (de Ridder et al., 2012). This has led researchers to focus their attention on examining instances when people are less likely to encounter self-control dilemmas (i.e., conscious experiences of conflict between an impulse that interferes with a goal), and how such dilemmas can be avoided altogether (either effortfully or automatically; Duckworth, Gendler, & Gross, 2016; Gillebaart & De Ridder, 2015). However, most of the research on the processes underlying successful self-control has focused on either the between-person differences in trait self-control (e.g., Adriaanse, Kroese, Gillebaart, & De Ridder, 2014; De Ridder et al., 2012; Galla & Duckworth, 2015) or the momentary automatic experiences of desire (Fishbach et al., 2003; Fishbach & Hofmann, 2015), and much less research has focused on how the characteristics of the longer-term goals that people are pursuing fit into the process of self-regulation.

Goal Motivation: Pursuing Goals Because You *Want-to* vs. *Have-to*

Within the literature on goal pursuit, one of the most prominent predictors of goal attainment is motivation, or the reasons why people pursue their goals. While there are several theories that put forth different types of motivational constructs as predictors of success, some of the most robust findings stem from self-determination theory's distinction between autonomous goals pursued for *want-to* reasons and controlled goals pursued for *have-to* reasons (Deci &

Ryan, 2000, p. 200; Ryan & Deci, 2017). Existing literature has used the terms want-to motivation, autonomous motivation, and self-concordance interchangeably to refer to the extent to which goals are pursued because they are inherently enjoyable (intrinsic), connected to a person's broader life values (integrated), and/or are personally meaningful and important (identified). In other words, people are pursuing their goals because they genuinely *want to*. Conversely, have-to motivation – also known as controlled motivation – refers to the extent to which goals are pursued because of external demands (extrinsic; e.g., societal pressure, rewards like money) and/or internal pressure driven by the avoidance of guilt and shame (introjected). In other words, people are pursuing their goals because they feel they *have to*. The main distinction in terminology is that self-concordance typically refers to relative autonomy, and is computed by subtracting controlled motivation from autonomous motivation (Sheldon & Elliot, 1999). More recent papers have started to use the terms *want-to* and *have-to* to make these constructs more broadly understandable beyond the confines of self-determination theory (Inzlicht & Schmeichel, 2012; Milyavskaya, Inzlicht, Hope, & Koestner, 2015), and to distinguish autonomous goals from the need for autonomy proposed by self-determination theory; we continue to use this terminology in the present paper, but use the terms autonomy or autonomous when theoretically relevant.

Goal motivation refers to an individual's personal reasons for pursuing a goal, and this varies extensively across the many goals that each person sets for themselves. Studies that examine goal motivation for multiple goals consistently find that approximately 60 to 80% of the variance is at the within-person (goal) level (Holding, Hope, Harvey, Marion Jetten, & Koestner, 2017; Milyavskaya, Inzlicht, Hope, & Koestner, 2015; Werner & Milyavskaya, 2017; Werner, Milyavskaya, Foxen-Craft, & Koestner, 2016) – that is, there is much more variation between the

many goals that a person sets for themselves than there are between people. Although research on the origins and causes of goal motivation are scarce, some research suggests that people have more want-to motivation for goals set in those domains that support basic psychological needs for autonomy, competence, and relatedness (Milyavskaya, Nadolny, & Koestner, 2014). In addition to people's motivations for their goals, people can also report their motivations for actions that they are currently performing. Such motivation is thought to be judged by integrating information about the broader goal (e.g., am I am performing this action in service of a want-to or have-to goal?), relevant contextual cues (e.g., how interesting is this activity; Sansone & Thoman, 2006), and individual differences (e.g., trait self-control; Converse et al., 2018).

There is an abundance of evidence indicating that want-to motivation is associated with a variety of positive outcomes, including greater health and well-being (e.g., Ng et al., 2012; Sheldon et al., 2004; Standage, Gillison, Ntoumanis, & Treasure, 2012; Williams, Gagne, Ryan, & Deci, 2002), pro-social behaviour (Weinstein & Ryan, 2010), and better achievement outcomes (e.g., Black & Deci 2000; Fortier, Vallerand, & Guay, 1995; Guay, Ratelle, Roy, & Litalien, 2010), whereas have-to motivation is associated with corresponding negative outcomes. With respect to goals more specifically, research finds that goals pursued for more want-to reasons are more likely to be attained (e.g., Koestner, Lekes, Powers, & Chicoine, 2002; Sheldon & Elliot, 1999; Milyavskaya, Inzlicht, Hope, & Koestner, 2015; Werner et al., 2016; Werner, Milyavskaya, & Koestner, 2018), and that the attainment of such goals can lead to greater well-being (e.g., Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001).

Self-Regulation from a Motivational Perspective

Based on initial research on goal self-concordance, the regulatory mechanism explaining the relation between want-to motivation and goal attainment appeared to be effort. Specifically,

Sheldon and Elliot (1999) proposed that want-to motivation facilitates more sustained and effortful goal pursuit, which in turn enhances goal attainment. This link between motivation and effort has been found among idiosyncratic personal goals (e.g., Sheldon & Elliot, 1998, 1999), as well as in specific domains, including education (e.g., Vasalampi, Salmela-Aro, & Nurmi, 2009) and sport (e.g., Smith, Ntoumanis, & Duda, 2007). The general idea is that people are more likely to be engaged with goals that they find interesting, personally meaningful, and/or important, and are less likely to invest the same resources into goals that they do not truly want to pursue.

More recent research, however, suggests that goals that are pursued for more want-to reasons are more likely to be attained because pursuing them is perceived as *effortless* and therefore occurs automatically. In a series of studies, want-to motivation was linked to setting more implementation intentions, which work to automate the goal pursuit process by creating a strong automatic link between a stimulus and an action (Koestner, Lekes, Powers, & Chicoine, 2002). In another set of studies, want-to motivation was linked to greater automatic attraction to healthy food and less attraction to unhealthy foods among people who had a goal of eating healthy (Milyavskaya et al., 2015). This indicates that those who report eating healthy for want-to reasons do not experience an automatic pull of tempting unhealthy food to the same extent. Using multiple methods including self-report and experience sampling, this research also found that people report facing fewer obstacles and fewer instances of temptation, and experience weaker temptation for more want-to goals (compared to their goals on average). Finally, when explicitly asked about their general liking for goal-discrepant stimuli (in this case, unhealthy foods), those higher on want-to motivation reported greater liking of healthy foods and less liking of unhealthy foods (Werner, Milyavskaya, & Hofmann, 2018). Consistent with research

on effortless self-regulation (e.g., Gillebaart & De Ridder, 2015), recent research thus indicates that want-to motivation may be a facilitator of more automatic goal pursuit.

While it cannot be denied that effort plays a fundamental role during goal pursuit (i.e., in order to engage in any goals or activities, we have to invest some level of effort to get going and to persist), this is not necessarily incompatible with the effortless self-regulation perspective. It may be the case that autonomy moderates the perception of effort, such that want-to goals feel subjectively easier, even when the goal requires the same amount of objective effort. For example, John and Jim, who have similar fitness profiles, may both be running on a treadmill at the same speed, yet one experiences it as exhausting while the other experiences it as invigorating and ‘effortless.’ Indeed, want-to motivation has been linked to experiencing greater vitality (for a review, see Deci & Ryan, 2008). This may lead people to perceive the behaviour as being easier, and therefore choose to continue engaging in an objectively effortful activity that is conducive to goal pursuit. In other words, it may be that people put in more effort, but because of their motivation (e.g., the goal is enjoyable, fun, important) it only *feels* effortless (Werner et al., 2016). Ongoing research provides some preliminary evidence for this idea. In a series of studies where participants could repeatedly choose to engage in easy or relatively more effortful activities, participants who reported greater enjoyment of math were more likely to choose to solve more difficult math problems, either compared to easier problems and to watching fun videos. These participants also reported lower subjective fatigue, despite doing more of the difficult tasks, again showing a dissociation between the work that was done and perceptions of effort/fatigue (Milyavskaya, Galla, Inzlicht, & Duckworth, 2018). A separate set of studies looking at the perceptions of time spent on goal-relevant activities found that for want-to goals such time was more likely to be perceived as a reward and less as a loss (Peetz, Milyavskaya, &

Davydenko, 2018). Taken together, this research suggests that there may be something inherently rewarding about engaging in want-to goals or activities that leads people to perceive such engagement as easier or less fatiguing. However, more research is needed to test this directly with actual objective measures of effort or by holding the amount of effort (and not simply the difficulty of the task) constant (e.g., Blanchfield, Hardy, & Marcora, 2014; Marcora, Staiano, & Manning, 2009; Ntoumanis, Healy, Sedikides, Smith, & Duda, 2014). Most research using cognitive tasks use performance as an indicator of effort, (e.g., if people solved more problems they must have tried harder), but this approach conflates effort with ability and performance. Accurate measures of objective effort are needed to further our understanding of how motivation modulates the perception of effort.

Focusing on the role of motivation in self-regulation also ties in with recent attempts to reconceptualize self-regulation and can therefore inform our approach to studying self-regulation more broadly. For example, the findings that want-to goals feel easier to pursue fits with recent theorizing on self-control as a choice akin to other decisions (Berkman, Hutcherson, Livingston, Kahn, & Inzlicht, 2017). This valuation model proposes that prioritizing a distal goal over a proximal temptation is the result of integrating the subjective values of each choice derived from multiple inputs. For example, whether I continue working on an assignment or open my twitter feed might depend on the strength of the pros and cons in favour or against each option. Such computations of the relative value of the choices can occur rapidly and automatically (Lebreton, Jorge, Michel, Thirion, & Pessiglione, 2009), but can also shift based on explicit attention to specific aspects of the choices, such as focusing on the relevance of the choice to one's identity (Berkman, Livingston, & Kahn, 2017). In such calculations, want-to motivation is likely to provide a strong value input in favour of the distal goal (Milyavskaya & Inzlicht, 2018),

especially given that such goals are more closely tied to an individual's sense of self (Berkman, Livingston, et al., 2017; Sheldon, 2014).

Potential Mechanisms Underlying Motivation and Self-Regulation

As discussed so far, evidence suggests that people who pursue goals for want-to reasons are more likely to attain those goals because they perceive those goals as being subjectively easier and are less likely to experience obstacles and temptations. But why is this the case? Is there something about want-to goals that makes them more effortless and less prone to such obstacles? Or are goals that feel easier to pursue subsequently judged as more autonomous? The answer to these questions is currently up for debate, and so in this next section we describe a few different possibilities that may also shed light on some of the ongoing discussions occurring within the self-regulation literature (e.g., Milyavskaya et al., 2018; Fujita, 2011; Gillebaart & De Ridder, 2015).

Use of Self-Regulatory Strategies

One potential mechanism is that people with more want-to motivation will use strategies to proactively set up their environments in such a way that reduces their experience of obstacles and temptations. That is, people actively work to minimize their chances of encountering temptations with the assumption that “if temptations aren't available, then I don't have to put in effort to resist them.” Drawing from the process model of emotion regulation (Gross, 1998, 2001), the process model of self-control proposes a series of potential strategies, with the assumption that the earlier you intervene during impulse generation, the more successful you will be in reducing temptation (Duckworth et al., 2016). These strategies include situation selection (choosing situations that avoid temptations all together), situation modification (purposefully changing circumstances to our advantage), attentional deployment (switching focus away from a

temptation that is present), cognitive change (reframing a temptation in a way that diminishes its desirability), and response modulation (suppressing the desire for the temptation by using willpower). For example, having a bag of chips in your cupboard would be a temptation that conflicts with your goal of eating healthy. By simply having them in your home, you make the acquisition of the chips a lot easier (and the probability of consuming them a lot higher), and so the self-control conflict becomes more salient. However, if you simply do not buy the chips in the first place, you decrease the probability of consuming chips because they are not immediately available to you – this would be an example of situation selection. By not keeping chips in your home, you have essentially removed the temptation from your environment, therefore reducing the need to use effortful self-control. However, assuming that your partner likes chips and has no such health goals, you may find that you have chips in your house from time to time. To reduce their saliency, you can hide them on the top shelf of the closet pantry – essentially, “out of sight, out of mind” – this would be an example of situation modification. While there is very little direct evidence empirically testing the use and effectiveness of these strategies, ongoing research suggests that want-to goals may be easier because they promote the use of better self-regulatory strategies, specifically situation selection and situation modification, in hypothetical online (but not in in-lab) scenarios (Leduc-Cummings, Werner, Milyavskaya, Klein, & Cole, 2018).

Similarly, want-to motivation has been linked to making specific plans for how and when to pursue one’s goals (Koestner et al., 2002). Such planning can be considered a strategy that serves to automatize the desired behaviour and reduce the necessity for effortful self-control. Additional research is needed to understand how motivation influences the use of all strategies, as well as their general effectiveness.

Reduced Desire

Another potential mechanism is that motivation is directly associated with experiencing less desire in the first place, therefore rendering self-control unnecessary. Because want-to goals are more closely tied to an individual's sense of self and broader values, the inherent value of the goal-congruent option is high, therefore naturally leading the individual to this choice without much, if any, conflict. For example, if I truly enjoy my work, I will be engrossed in writing a paper and will not feel the pull of Twitter or Facebook. Preliminary evidence for this proposition stems from recent research assessing reactions to healthy and unhealthy food using the Implicit Association Test (Milyavskaya et al., 2015). The Implicit Association Task (IAT; Greenwald, McGhee, & Schwartz, 1998) is an implicit measure used to assesses relative attitudes to stimuli in two categories, and has frequently been used to examine immediate healthy versus unhealthy food preferences (Frieze, Hofmann, & Wänke, 2008). Furthermore, it is possible to compute separate estimates dissociating automatic and controlled responding to each category (Payne & Bishara, 2009). Using this procedure, Milyavskaya and colleagues (2015) found that want-to motivation was related to less automatic attraction to unhealthy food, and was unrelated to controlled processes. That is, people who eat healthy because they truly want-to do not have the same immediate positive affective reaction towards unhealthy food as those who pursue that goal for less autonomous reasons. A similar pattern was also found when asking about explicit food preferences, such that want-to motivation was positively associated with greater liking of healthy food and less liking of unhealthy food, whereas have-to motivation was positively associated with greater liking of unhealthy food (Werner et al., 2018).

These findings imply that people with more want-to motivation for a goal will more naturally and effortlessly choose the goal-congruent option because that fits with their personal preferences, whereas people pursuing a goal for have-to reasons are the ones that will likely

experience greater conflict (and therefore require more self-control) because they prefer the tempting option, but know that they should make the goal-congruent choice. Taken together, these findings beg the question: if want-to motivation is associated with reduced preference for the “temptation”, is self-control even needed in the first place? Taking this further, if want-to motivation is associated with greater preference for the goal-congruent option, would choosing this option still represent an instance of self-regulation? Our answer to this second question is yes, as we consider self-regulation to be any process that advances a focal goal (even if unconsciously). In this way, motivation and self-regulation are closely intertwined: an inherent enjoyment of an activity or behaviour will naturally lead to more enactment of this behaviour or activity, as well as to greater ratings of want-to motivation (since it is part of the definition of want-to motivation). If a behaviour or activity can help with a longer-term goal (as is the case with most of our actions), such actions would be considered self-regulation.

Returning to our first question, even in those cases where we have a preference for goal-congruent actions and self-regulation thus unfolds automatically and effortlessly, other attractive alternatives may sometimes exert a pull and require active self-control. For example, when reading a paper that I enjoy, I may nevertheless be tempted to check a twitter posting when I see a notification pop up on my phone. Or I may on occasion want a slice of pizza despite generally liking salads. Such instances of temptations that conflict with our preferences may stem from the likely fluctuations in motivation across time (Inzlicht et al., 2014). The desire for “temptations” is less likely to occur in the moments when want-to motivation is high, but can instead re-surface in those moments when want-to motivation drops off. One study manipulating motivation provides preliminary support for this proposition. When want-to motivation was experimentally induced (by asking participants to describe their want-to reasons for eating healthy), they rated

potential obstacles to eating healthy as less likely to interfere with their goal over the coming week (Leduc-Cummings, Milyavskaya & Peetz, 2017). Alternatively, the availability of tempting alternatives may decrease our perceptions of want-to motivation for the goal congruent and generally liked option. Much more research is needed to fully understand the role of motivation in the interplay between reduced desires and increased strategy use.

Finding the Middle Ground

Unfortunately, our ability to pinpoint the precise mechanism (of better strategy use versus lower experiences of desire) is hampered by the difficulty of studying self-regulation as it unfolds in a particular moment. Although some research attempts to examine momentary temptation using experience sampling (Hofmann et al., 2012; Milyavskaya et al., 2015), it is unclear whether self-reports of experiencing temptation are lower for some people because they have engaged in strategies to prevent the temptation, or because they did not feel the desire. Similarly, in the case of self-control dilemmas, we often focus on the outcome as an indicator of success, while ignoring the active decision-making process that leads up to the choice. For example, if the pizza is desirable but conflicts with the goal to eat healthy, the person may initially be drawn to the pizza, but at the last minute make the “right” choice and choose the salad instead (because of the conflict between options, self-control was essential to making this choice). Alternatively, a person may automatically choose the salad because that is what they genuinely want, and they have little or no desire for the pizza (there is no conflict and so self-control is not necessary; this would be an instance of effortless self-regulation). In this example, both people made the same choice, but the reasons why, the amount of conflict experienced, and the extent to which self-control was used are drastically different.

In order to capture the self-regulation process as it unfolds, researchers can take advantage of tracing methods – including eye-tracking and mouse-tracking methodologies – to more directly observe how people make decisions in a given moment (e.g., Freeman, 2018; Freeman & Ambady, 2010). This is especially relevant to self-regulation research, as such goal-related decisions often occur automatically (i.e., in a few hundred milliseconds) and sometimes even unconsciously (see Lopez, Stillman, Heatherton, & Freeman, 2018 for a more detailed review). For example, research using mouse-tracking to assess self-control conflict found that people generally experience conflict when choosing between goal-congruent (e.g., healthy food) and more tempting (e.g., unhealthy food) options (relative to a comparison group; e.g., food vs. non-food item); however, those with higher levels of trait self-control experienced less conflict (Stillman, Medvedev, & Ferguson, 2017). One limitation to this paradigm, however, is that mouse-tracking has so far been restricted to making dichotomous decisions on a screen, which limits external validity (e.g., asking participants to indicate which food they prefer while displaying a picture of unhealthy food in one corner of the screen and a picture of healthy food in the other; Sullivan, Hutcherson, Harris, & Rangel, 2014). Alternatively, researchers could also utilize eye-tracking in order to study self-control dilemmas both in the lab and “in the wild.” For example, researchers can assess the allocation of visual attention to pictures of healthy and unhealthy food on a screen (very similar to the mouse-tracking paradigm) or the amount of attention paid to healthy versus unhealthy foods while a person does their weekly grocery shopping (while wearing mobile eye-tracking glasses).

Additional Insights and Directions for Future Research

While we have proposed a few possible accounts explaining why want-to goals are perceived as easier and are associated with experiencing less obstacles, by no means is this list

all-inclusive. In this section, we address additional considerations that researchers should take into consideration when studying the process of self-regulation, highlighting how a motivational perspective can inform future research and theorizing.

One of the most prominent limitations of the literature on self-control is that there is often a mismatch between the methods used and the loftiness of the claims that stem from them. While there are burgeoning efforts to study self-control in more natural settings (e.g., using experience sampling techniques; Hofmann et al., 2012; Milyavskaya & Inzlicht, 2017), we know very little about its causal determinants and underlying mechanisms. Keeping with our motivational perspective, one simple way to enhance this area of research is to manipulate motivation in the lab to see if preferences for goal-congruent and tempting options can change. In previous examples, we mentioned that want-to motivation is associated with greater preference for healthy food and less of a preference for unhealthy food. However, if have-to motivation becomes activated instead, would this change the person's preferences in the moment? Should this actually be the case, researchers would be better off figuring out how to shift motivation instead of trying to enhance self-control directly (i.e., focusing on promoting "better" motivation rather than increasing willpower).

Additionally, a large part of successful self-regulation is not only avoiding temptations that interfere with a goal, but also engaging in goal-congruent behaviour. While the debate of desires versus strategies is likely most relevant for goals that have concrete competing temptations to avoid (e.g., eating junk food for weight loss; cigarettes for quitting smoking), for many goals, the critical issue is not avoiding the direct temptations, but initiating goal-congruent behaviour (e.g., going to the gym; starting the homework assignment; see De Ridder et al., 2011). There is some evidence to suggest that initiating such behaviours would be easier for

want-to goals, as want-to motivation has been consistently shown to be related to lower procrastination (Katz, Eilat, & Nevo, 2014; Senécal, Koestner, & Vallerand, 1995; Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). Additionally, recent theorizing on effort (i.e., disentangling perceptions of effort from objective effort, as discussed above) can be especially relevant for understanding behavioural initiation and engagement, which is typically more effortful than the default inertia inherent in not doing a new behaviour. If we consider engaging in effortful goal-congruent behaviour as a value-based choice (Berkman et al., 2017), then want-to motivation is likely to enhance the value (and likelihood) of engaging in such behaviour (Milyavskaya & Inzlicht, 2018; see Inzlicht et al., 2018 for a more recent account of effort, motivation, and value).

Given that initiating new behaviours may be especially difficult, building momentum and sustaining new behaviours is likely to be particularly important for effective self-regulation. One way to effectively sustain a new behaviour is by creating habits, which are automatic response tendencies that are effortlessly activated by contextual cues in the environment (Neal, Wood, & Quinn, 2006). Building habits is thus the prototypical instance of successful self-regulation: goal-congruent behaviours are pursued by default and no self-control is needed. To date, no published research has investigated the relation between want-to motivation and habits or habit formation. Conceptually, if want-to motivation is related to a greater likelihood of engaging in effortful goal-congruent behaviours (for the reasons outlined above), such behaviours are more likely to be frequently repeated and become habitual. Additionally, frequently engaging in a behaviour can make it feel more a part of the self – the very definition of autonomy/self-concordance. It may thus be that habits and want-to motivation form a virtuous cycle that lead to greater goal pursuit. At this point, however, this is pure speculation, and much more research is needed to

understand how want-to motivation develops, and the role that automaticity and habitual behaviours may play in this process.

Another issue that we have yet to touch on is the conceptualization of autonomous and controlled motivation. Throughout the current paper, we often referred to want-to motivation as being a single dimension. However, the ways in which want-to and have-to motivation are conceptualized in the literature are mixed. On one hand, Sheldon and Elliot (1999) proposed the idea of self-concordance, which refers to “the degree to which stated goals express enduring values and interests” (p. 482). From a measurement perspective, goal self-concordance is typically operationalized as an index calculated by subtracting have-to motivation from want-to motivation (e.g., Koestner et al., 2006; Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001; Werner & Milyavskaya, 2017). The underlying assumption here is that motivation is a continuum, and that want-to and have-to motivation fall along opposite sides. However, since there is little to no evidence indicating that want-to and have-to motivation are negatively correlated (which would support the continuum assumption), it has been suggested that we should instead treat want-to and have-to motivation as separate constructs (Koestner, Otis, Powers, Pelletier, & Gagnon, 2008). Indeed, when treated separately, want-to motivation is associated with better goal progress, whereas have-to motivation is actually unrelated to goal progress (Judge et al., 2005; Koestner et al., 2008). However, given that many studies combine want-to and have-to motivation into one index, evidence differentiating their unique impact on effortless self-regulation is still preliminary.

Finally, in the current paper we largely focus on the individual and their motivation in isolation, whereas such processes generally occur within a broader social context. In this regard, it may also be possible that want-to motivation is related to greater self-regulation because some

environments are conducive both to greater want-to motivation and to making more progress on one's goals. Specifically, need-supportive environments and domains (where people experience greater feelings of autonomy, competence, and relatedness) lead to more want-to goals set in those domains (Milyavskaya, Nadolny, & Koestner, 2014), but may also have a direct impact on goal attainment. For example, research has found that relationship satisfaction (which is higher in need satisfying relationships; Patrick et al., 2007) facilitates goal pursuit and leads to better goal progress (Hofmann, Finkel, & Fitzsimons, 2015). Additionally, such environments may offer tangible supports to improve goal progress. For example, if my husband is supportive of my attempts to eat healthily, I may feel more autonomous in my goal pursuit, and he may refrain from buying chocolate to keep in our house. Such outsourcing of self-regulation is consistent with the transactive model of self-regulation (Fitzsimons, Finkel, & vanDellen, 2015), and represents an interesting future research direction.

Conclusion

Growing evidence suggests that want-to goals are pursued efficiently, automatically, and effortlessly, thereby leading to greater goal attainment and self-regulatory success. The mechanisms for this relationship, and its relation to actual effort put into the pursuit of these goals, is an issue of debate. While we have proposed some potential mechanisms, more research is needed to carefully disentangle experiences of desire from use of strategies (using tools such as eye-tracking), to better understand possible unique effects of autonomous versus controlled motivation (as two different dimensions of motivation), and to understand how motivation can be shifted to improve self-regulation.

References

- Adriaanse, M. A., Kroese, F. M., Gillebaart, M., & De Ridder, D. T. D. (2014). Effortless inhibition: Habit mediates the relation between self-control and unhealthy snack consumption. *Frontiers in Psychology*, 5. <https://doi.org/10.3389/fpsyg.2014.00444>
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology*, 74, 1252–1265. <https://doi.org/10.1037//0022-3514.74.5.1252>
- Berkman, E. T., Hutcherson, C. A., Livingston, J. L., Kahn, L. E., & Inzlicht, M. (2017). Self-control as value-based choice. *Current Directions in Psychological Science*, 26, 422–428. <https://doi.org/10.1177/0963721417704394>
- Berkman, E. T., Livingston, J. L., & Kahn, L. E. (2017). Finding the “self” in self-regulation: The identity-value model. *Psychological Inquiry*, 28, 77–98. <https://doi.org/10.1080/1047840X.2017.1323463>
- Blanchfield, A., Hardy, J., & Marcora, S. (2014). Non-conscious visual cues related to affect and action alter perception of effort and endurance performance. *Frontiers in Human Neuroscience*, 8. <https://doi.org/10.3389/fnhum.2014.00967>
- Carver, C. S., & Scheier, M. F. (1982). Control theory: A useful conceptual framework for personality–social, clinical, and health psychology. *Psychological Bulletin*, 92, 111–135. <https://doi.org/10.1037/0033-2909.92.1.111>
- de Ridder, D. T. D., 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, 76–99. <https://doi.org/10.1177/1088868311418749>

- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268.
https://doi.org/10.1207/S15327965PLI1104_01
- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne*, 49, 182–185. <https://doi.org/10.1037/a0012801>
- Duckworth, A. L., & Seligman, M. E. P. (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science*, 16, 939–944.
<https://doi.org/10.1111/j.1467-9280.2005.01641.x>
- Duckworth, Angela L., Gendler, T. S., & Gross, J. J. (2016). Situational strategies for self-control. *Perspectives on Psychological Science*, 11, 35–55.
<https://doi.org/10.1177/1745691615623247>
- 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, 296–309. <https://doi.org/10.1037/0022-3514.84.2.296>
- Fishbach, A., & Hofmann, W. (2015). Nudging self-control: A smartphone intervention of temptation anticipation and goal resolution improves everyday goal progress. *Motivation Science*, 1, 137–150. <https://doi.org/10.1037/mot0000022>
- 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, 820–832.
<https://doi.org/10.1037/0022-3514.90.5.820>
- Fitzsimons, G. M., Finkel, E. J., & vanDellen, M. R. (2015). Transactive goal dynamics. *Psychological Review*, 122, 648–673. <https://doi.org/10.1037/a0039654>

- Freeman, J. B. (2018). Doing psychological science by hand. *Current Directions in Psychological Science*. <https://doi.org/10.1177/0963721417746793>
- Freeman, J. B., & Ambady, N. (2010). MouseTracker: Software for studying real-time mental processing using a computer mouse-tracking method. *Behavior Research Methods*, 42, 226–241. <https://doi.org/10.3758/BRM.42.1.226>
- Friese, M., Hofmann, W., & Wänke, M. (2008). When impulses take over: Moderated predictive validity of explicit and implicit attitude measures in predicting food choice and consumption behaviour. *British Journal of Social Psychology*, 47, 397–419. <https://doi.org/10.1348/014466607X241540>
- Friese, M., Loschelder, D. D., Gieseler, K., Frankenbach, J., & Inzlicht, M. (2018). Is ego depletion real? An analysis of arguments. *Personality and Social Psychology Review*, 108886831876218. <https://doi.org/10.1177/1088868318762183>
- Fujita, K. (2011). On conceptualizing self-control as more than the effortful inhibition of impulses. *Personality and Social Psychology Review*, 15, 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, 508–525. <https://doi.org/10.1037/pspp0000026>
- Gillebaart, M. (2018). The ‘operational’ definition of self-control. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.01231>
- Gillebaart, M., & De Ridder, D. T. D. (2015). Effortless self-control: A novel perspective on response conflict strategies in trait self-control. *Social and Personality Psychology Compass*, 9, 88–99. <https://doi.org/10.1111/spc3.12160>

- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association task. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2, 271–299.
- Gross, J. J. (2001). Emotion regulation in adulthood: Timing Is everything. *Current Directions in Psychological Science*, 10, 214–219. <https://doi.org/10.1111/1467-8721.00152>
- 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, 1318–1335. <https://doi.org/10.1037/a0026545>
- Hofmann, W., Finkel, E. J., & Fitzsimons, G. M. (2015). Close relationships and self-regulation: How relationship satisfaction facilitates momentary goal pursuit. *Journal of Personality and Social Psychology*, 109, 434–452. <https://doi.org/10.1037/pspi0000020>
- Hofmann, W., Friese, M., & Strack, F. (2009). Impulse and self-control from a dual-systems perspective. *Perspectives on Psychological Science*, 4, 162–176. <https://doi.org/10.1111/j.1745-6924.2009.01116.x>
- Hofmann, W., Luhmann, M., Fisher, R. R., Vohs, K. D., & Baumeister, R. F. (2014). Yes, but are they happy? Effects of trait self-control on affective well-being and life satisfaction. *Journal of Personality*, 82, 265–277. <https://doi.org/10.1111/jopy.12050>
- Hofmann, W., & Van Dillen, L. (2012). Desire: The new hot spot in self-control research. *Current Directions in Psychological Science*, 21, 317–322. <https://doi.org/10.1177/0963721412453587>

- Holding, A. C., Hope, N. H., Harvey, B., Marion Jetten, A. S., & Koestner, R. (2017). Stuck in limbo: Motivational antecedents and consequences of experiencing action crises in personal goal pursuit. *Journal of Personality*, 85, 893–905.
- 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, 450–463. <https://doi.org/10.1177/1745691612454134>
- Inzlicht, M., Schmeichel, B. J., & Macrae, C. N. (2014). Why self-control seems (but may not be) limited. *Trends in Cognitive Sciences*, 18, 127–133. <https://doi.org/10.1016/j.tics.2013.12.009>
- Inzlicht, M., Shenhav, A., & Olivola, C. Y. (2018). The effort paradox: Effort is both costly and valued. *Trends in Cognitive Sciences*, 22, 337–349. <https://doi.org/10.1016/j.tics.2018.01.007>
- James, W. (1890). *The principles of psychology*. New York: Holt and Company.
- Katz, I., Eilott, K., & Nevo, N. (2014). “I’ll do it later”: Type of motivation, self-efficacy and homework procrastination. *Motivation and Emotion*, 38, 111–119. <https://doi.org/10.1007/s11031-013-9366-1>
- Koestner, R., Lekes, N., Powers, T. A., & Chicoine, E. (2002). Attaining personal goals: Self-concordance plus implementation intentions equals success. *Journal of Personality and Social Psychology*, 83, 231–244. <https://doi.org/10.1037//0022-3514.83.1.231>
- Koestner, R., Otis, N., Powers, T. A., Pelletier, L., & Gagnon, H. (2008). Autonomous motivation, controlled motivation, and goal progress. *Journal of Personality*, 76, 1201–1230. <https://doi.org/10.1111/j.1467-6494.2008.00519.x>

- Kopetz, C. E., Woerner, J. I., & Briskin, J. L. (2018). Another look at impulsivity: Could impulsive behavior be strategic? *Social and Personality Psychology Compass*, 12, e12385. <https://doi.org/10.1111/spc3.12385>
- Lebreton, M., Jorge, S., Michel, V., Thirion, B., & Pessiglione, M. (2009). An automatic valuation system in the human brain: Evidence from functional neuroimaging. *Neuron*, 64, 431–439. <https://doi.org/10.1016/j.neuron.2009.09.040>
- Leduc-Cummings, I., Milyavskaya, M., & Peetz, J. (2017). Goal Motivation and the Subjective Perception of Past and Future Obstacles. *Personality and Individual Differences*, 109, 160-165.
- Leduc-Cummings, I., Werner, K., Milyavskaya, M. Klein, J., & Cole, S (2018). Motivation, self-control, and self-regulation strategies. *Manuscript in preparation*.
- Lopez, R. B., Stillman, P. E., Heatherton, T. F., & Freeman, J. B. (2018). Minding one's reach (to eat): The promise of computer mouse-tracking to study self-regulation of eating. *Frontiers in Nutrition*, 5. <https://doi.org/10.3389/fnut.2018.00043>
- Marcora, S. M., Staiano, W., & Manning, V. (2009). Mental fatigue impairs physical performance in humans. *Journal of Applied Physiology*, 106, 857–864. <https://doi.org/10.1152/jappphysiol.91324.2008>
- Metcalfe, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, 106, 3–19. <https://doi.org/10.1037/0033-295X.106.1.3>
- Milyavskaya, M., Galla, B., Inzlicht, M., & Duckworth, A. (2018). More Effort, Less Fatigue: How Interest Increases Effort and Reduces Mental Fatigue. *Manuscript submitted for publication*. <https://psyarxiv.com/8npfx>.

- 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. (2018). Attentional and motivational mechanisms of self-control. In D. T. D. de Ridder, M. Adriaanse, & K. Fujita (Eds.), *Handbook of self-control in health & well-being* (pp. 11–23). New York, NY: Routledge.
- 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, 677–693.
<https://doi.org/10.1037/pspp0000045>
- Milyavskaya, M., Nadolny, D., & Koestner, R. (2014). Where do self-concordant goals come from? The role of domain-specific psychological need satisfaction. *Personality and Social Psychology Bulletin*, 40, 700–711. <https://doi.org/10.1177/0146167214524445>
- Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., ... Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences*, 108, 2693–2698.
<https://doi.org/10.1073/pnas.1010076108>
- Neal, D. T., Wood, W., & Quinn, J. M. (2006). Habits—A repeat performance. *Current Directions in Psychological Science*, 15, 198–202. <https://doi.org/10.1111/j.1467-8721.2006.00435.x>

- Ntoumanis, N., Healy, L. C., Sedikides, C., Smith, A. L., & Duda, J. L. (2014). Self-regulatory responses to unattainable goals: The role of goal motives. *Self and Identity*, 13, 594–612. <https://doi.org/10.1080/15298868.2014.889033>
- Payne, B. K., & Bishara, A. J. (2009). An integrative review of process dissociation and related models in social cognition. *European Review of Social Psychology*, 20, 272–314. <https://doi.org/10.1080/10463280903162177>
- Peetz, J., Milyavskaya, M., & Davydenko, M. (2018). Is time spent pursuing goals a loss, a reward, or an investment? Type of goal motivation and goal pursuit schedules. *Manuscript in preparation*.
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Publications.
- Senécal, C., Koestner, R., & Vallerand, R. J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology*, 135, 607–619. <https://doi.org/10.1080/00224545.1995.9712234>
- Shah, J. Y., Friedman, R., & Kruglanski, A. W. (2002). Forgetting all else: On the antecedents and consequences of goal shielding. *Journal of Personality and Social Psychology*, 83, 1261–1280. <https://doi.org/10.1037/0022-3514.83.6.1261>
- Sheldon, K. M. (2014). Becoming Oneself: The Central Role of Self-Concordant Goal Selection. *Personality and Social Psychology Review*, 18(4), 349–365. <https://doi.org/10.1177/1088868314538549>
- Sheldon, K. M., & Elliot, A. J. (1998). Not all personal goals are personal: Comparing autonomous and controlled reasons for goals as predictors of effort and attainment.

- Personality and Social Psychology Bulletin*, 24, 546–557.
<https://doi.org/10.1177/0146167298245010>
- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology*, 76, 482–497. <https://doi.org/10.1037/0022-3514.76.3.482>
- Smith, A., Ntoumanis, N., & Duda, J. (2007). Goal striving, goal attainment, and well-being: Adapting and testing the self-concordance model in sport. *Journal of Sport and Exercise Psychology*, 29, 763–782. <https://doi.org/10.1123/jsep.29.6.763>
- 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, 1240–1258. <https://doi.org/10.1177/0956797617705386>
- Sullivan, N., Hutcherson, C., Harris, A., & Rangel, A. (2015). Dietary self-control is related to the speed with which attributes of healthfulness and tastiness are processed. *Psychological science*, 26, 122-134.
- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72, 271–324. <https://doi.org/10.1111/j.0022-3506.2004.00263.x>
- Trope, Y., & Fishbach, A. (2000). Counteractive self-control in overcoming temptation. *Journal of Personality and Social Psychology*, 79, 493–506.
- Vansteenkiste, M., Sierens, E., Soenens, B., Luyckx, K., & Lens, W. (2009). Motivational profiles from a self-determination perspective: The quality of motivation matters. *Journal of Educational Psychology*, 101, 671–688. <https://doi.org/10.1037/a0015083>

- Vasalampi, K., Salmela-Aro, K., & Nurmi, J.-E. (2009). Adolescents' self-concordance, school engagement, and burnout predict their educational trajectories. *European Psychologist, 14*, 332–341. <https://doi.org/10.1027/1016-9040.14.4.332>
- Werner, K. M., & Milyavskaya, M. (2017). We may not know what we want, but do we know what we need? Examining the ability to forecast need satisfaction in goal pursuit. *Social Psychological and Personality Science, 194855061772027*.
<https://doi.org/10.1177/1948550617720274>
- Werner, K. M., Milyavskaya, M., Foxen-Craft, E., & Koestner, R. (2016). Some goals just feel easier: Self-concordance leads to goal progress through subjective ease, not effort. *Personality and Individual Differences, 96*, 237–242.
<https://doi.org/10.1016/j.paid.2016.03.002>
- Werner, K. M., Milyavskaya, M., & Hofmann, W. (2018). Motivation and preference for healthy and unhealthy food. Unpublished raw data.