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The Many Faces of Self-Control: Tacit Assumptions and Recommendations to Deal With Them

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The term self-control is broadly used by both researchers and lay people. However, both the term itself and the research on self-control is full of assumptions that are often unexamined and unchallenged. In this paper, we question many assertions and assumptions about self-control that foster confusion and controversy, including the multitude of processes encompassed by the varied uses of the term self-control. We describe how these assumptions have caused gaps in the empirical literature, impeded the development of an interdisciplinary knowledge base about self-control, and ultimately slowed scientific progress in this area. Critically, we also present a set of recommendations for conducting research on self-control that would be relevant across theories, areas of inquiry, and disciplines. By bringing these assumptions to light, future research can better focus on issues that are important and foundational but have been relatively neglected by the literature because of their implicit nature. This paper thus raises new avenues for research by highlighting what the field generally assumes but does not test directly.

Keywords: self-control, self-regulation, motivation

Lay people and researchers alike are fascinated by self-control, which is thought to be important for understanding and improving human behavior. At the most basic level, the term self-control has been applied within the psychology literature to a myriad of diverse phenomena ranging from broad individual differences that emerge in childhood and lead to beneficial outcomes throughout the life span (Moffitt et al., 2011) to the ability to withhold a button press on a trial in a laboratory task (e.g., Inzlicht & Gutsell, 2007). The breadth of psychological constructs subsumed under the self-control umbrella has become so wide that the term itself conveys very little information. This limitation presents a challenge to the construct validity of self-control and therefore its usefulness in advancing scientific knowledge on the subject. We posit that the time has come to revisit the tacit assumptions about self-control as the construct appears in the psychology literature. The purpose of this article is to articulate and reexamine these assumptions and present some recommendations both for individual researchers studying self-control and for new research directions for the field as a whole.

We adopt a broad working definition of self-control to capture the many ways this term is used in the literature. For this purpose, self-

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control can be defined as the process or behavior of overcoming a temptation or prepotent response in favor of a competing goal (either concurrent or longer term). Self-control has long been taken to imply a conflict of some form (Ach, 1910/2006), such as between long- and short-term goals or controlled and automatic processes, that is resolved through behavioral inhibition, attention control, or any other kind of strategy aimed at conflict reduction. Indeed, key assumptions about self-control (such as that it involves conflict resolution) are built into the definition but not typically tested. The same holds for the assumption that self-control is effortful, which is typically assumed without specifying what is meant by effortful (but see Wright & Agtarap, 2015). We elaborate further in these definitional issues in discussing the first class of assumptions below.

Jingle-Jangle Assumptions

The jingle-jangle fallacy in personality research (Block, 1995) refers to using the same name to different constructs (jingle; Thorndike, 1904) and using different names for equivalent or highly similar constructs (jangle; Kelley, 1927). Several assumptions about self-control, including many definitional assumptions, fall into this category. For example, the term self-control without a qualifier does not distinguish between trait and state forms of self-control, implying that they are equivalent or at least related in some way. A related tacit assumption is that people who are generally high in trait self-control will display greater (state) self-control when faced with a temptation. This is one type of jingle assumption. However, there is no consistent association between state and trait measures of self-control. Whereas some studies suggest that high trait self-control is linked to greater state self-control (e.g., DeWall, Baumeister, Stillman, & Gailliot, 2007), others find the opposite to be true (e.g., Imhoff, Schmidt, & Gerstenberg, 2014). A meta-analysis found only a very small correlation ($r = .15$) between delay-of-gratification tasks tapping into state self-control with questionnaires assessing trait self-control (Duckworth & Kern, 2011; see also Saunders, Milyavskaya, Etz, Wilson, & Inzlicht, under review). Furthermore, research rarely distinguishes between lack of impulsivity (i.e., not having an impulse) and impulse control, frequently using the term self-control to apply to both and using measures of both interchangeably to tap into self-control (e.g., Moffitt et al., 2011). Generally, research on how trait self-control, state self-control, and impulsivity relate to each other is seriously hampered by definitional and measurement issues as alluded to above.

Examples of the jangle assumption in self-control include neighboring constructs such as grit, conscientiousness, and low impulsivity. The relationship between self-control and other related constructs is unclear. And whereas some researchers have tried to differentiate these constructs (e.g., Duckworth & Gross, 2014), data stemming from current scales suggest that all are closely related constructs within the conscientiousness domain (Roberts, Lejuez, Krueger, Richards, & Hill, 2014). Researchers also often use these constructs (as well as others) interchangeably to tap into self-control broadly understood. Indeed, a recent literature search found more than 100 unique self- and informant-report questionnaires (Duckworth & Kern, 2011). The jangle assumption is that these are meaningfully distinct constructs because they are called by different names. But, empirically speaking, this assumption does not hold because discriminant validity is rarely tested. When it is, results suggest more overlap than differentiation (e.g., Credé, Tynan, & Harms, 2017; Roberts et al., 2014). It would be productive to unify these constructs under a common name and to reserve new terminology only for constructs that are empirically unique.

An assumption related to jingle-jangle assumptions is that self-control and self-regulation are the same thing. Using these terms interchangeably conflates successful resolution of self-control dilemmas (what we term self-control) with more general goal-directed behaviors (i.e., self-regulation). Indeed, self-regulation broadly refers to any process in which an organism regulates its state (Carver & Scheier, 1982) and also includes other aspects of goal pursuit such as setting goals, switching between goals, and working toward one's goals in the absence of tempting alternatives. Self-control, as we define it above, is a specific instance of successful self-regulation.

Recommendations

More careful theorizing and specific empirical evidence is needed to better understand the similarities and differences among constructs that go by the name self-control and others that do not but are close empirical relations. We recommend that researchers consider both discriminant and convergent validity here as well as predictive validity. What does the focal measure of self-control predict that others do not? Also consider what trait in trait self-control refers to: temperament (cf. impulsivity), personality (cf. conscientiousness), motivation (cf. effort), or more of a generalized belief (cf. optimism)? If we distinguish between these layers of trait, then it makes sense that there is a relation between, say, impulsivity and self-control, but they are not identical. When studying trait self-control, researchers need to ensure that the measures they use tap self-control per se and not an associated construct (self-regulation, impulsivity, etc.); if the latter, they need to be clear on whether and how this distinction might matter for their particular study. Researchers also need to pay closer attention to the distinction between trait and state self-control. As long as trait and state self-control are studied as if they were separate constructs (i.e., by using different theoretical paradigms and assessment procedures), it will be difficult to directly compare them unless these differences are reconciled (De Ridder, Kroese, & Gillebaart, 2018).

Capacity Assumptions

Some assumptions about self-control stem from the idea that self-control is a skill or disposition, akin to intelligence. Here it is assumed that self-control is a property of the person, such that some people are good at exerting self-control across various areas of their lives, whereas others are not. Specific capacity assumptions are the notions that self-control is not influenced by motivation and that it applies equally across performance domains (but see Egner, 2008 for an example in which this assumption was tested). This set of assumptions is problematic because of the deterministic implications of such a view—if self-control performance is determined only by some capacity, then improving the capacity is the only way to improve self-control (and the positive benefits associated with it). This narrow assumption has led researchers to focus on interventions to improve or train self-control; the effectiveness of such interventions is small and variable (Beames, Schofield, & Denson, 2017; Friese, Frankenbach, Job, & Loschelder, 2017). In contrast, research on nudging (Thaler & Sunstein, 2008) has shown great strides in improving self-regulatory outcomes by shifting the contexts in which decisions (including self-control decisions) take place, rather than increasing a self-control capacity (e.g., Kroese, Marchiori, & de Ridder, 2016). Other researchers have also proposed that attention and motivation are crucial to self-control (Kaplan & Berman, 2010; Kotabe & Hofmann, 2015; Locke & Braver, 2008; Milyavskaya & Inzlicht, 2017a) and are indeed necessary prerequisites for the capacity to engage in self-control (Hofmann, Schmeichel, & Baddeley, 2012).

Furthermore, the magnitude of the relationship between trait self-control and one's ability to control behaviors differs across domains (De Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012). For example, approximately 85–90% of the variance in the attainment of personal goal (over spans ranging from 1 week to 1 year; Milyavskaya, Inzlicht, Hope, & Koestner, 2015; Werner, Milyavskaya, Foxen-Craft, & Koestner, 2016) is at the within-person level, suggesting that it is not the case that some people are good at self-control but rather that people exert self-control in some areas of their lives (i.e., in the service of some goals) better than in others. This also aligns with the idea that motivation and attention play an important role in exerting self-control: Whereas a person may have the capacity to exert self-control in all domains, he or she may be more motivated to actually engage in self-control only in some specific areas of life (Milyavskaya et al., 2015; Tsukayama & Duckworth, 2010). By focusing on general self-control and ignoring the specific contexts in which self-control is actually exerted, researchers miss out on an important source of variability that can provide rich information on the specific processes underlying successful or unsuccessful self-control.

Recommendations

Distinguish between the capacity to do something and the tendency to do it. Does the person

have the cognitive/physical capacity to be successful? If so, consider why this capacity is not being engaged—It likely has little to do with the amount of self-control or executive function. Instead, researchers need to pay special attention to the potentially foundational role of attention and motivation, which likely shifts both across domains and across time. For example, what appears to be failed self-control might result from reduced capacity of attention or a lack of effort to begin with. Future research can examine what motivates people to engage in self-control, how this shifts across time and context, and whether various sources of motivation differentially impact whether self-control attempts are successful.

Normative Assumptions

A final set of assumptions reflect cultural norms and biases that have long permeated the scientific literature on self-control. For example, a common normative assumption is that self-control dilemmas have only two possible resolutions, one representing a good goal and another reflecting a bad temptation—the proverbial devil on one shoulder and angel on the other. But, of course, restricting participants to just two responses ignores the important roles that problem solving and creativity can play in identifying compromises or alternative responses. There may exist situations in which a person perceives that they can succumb to the desire and pursue their long-term goal at the same time, even though the conflict between the two is explicitly recognized. In reality, people are confronted with repeated choices over time in which they can alternate between good and bad choices. Whereas some research and theories have addressed this (e.g., goal systems theory; De Witt Huberts, Evers, & De Ridder, 2014; Fishbach & Zhang, 2008; Kruglanski et al., 2002), many typical laboratory tasks ignore this reality and present individuals with only one choice at one time to assess self-control. In many cases, a choice can be (re)construed as involving two valued goals (Scholer, 2014). Going to bed early instead of working on an article can be considered self-control failure but could also be looked at as success in self-care. The assumption that choosing the temptation is necessarily maladaptive is implicit in the terminology used because this choice is most commonly described as a failure of self-control.

Researchers also make normative assumptions about the types of goals participants have when they walk into the laboratory. State self-control is frequently elicited in the laboratory with paradigms that presume that the participant faces a dilemma between an unwanted behavior to inhibit and the desired correct behavior. This is especially common in measures of executive control such as the Stroop test but also in measures assessing persistence on some behavior such as persistence on difficult or unsolvable puzzles. Researchers using these paradigms assume that these dilemmas created in the laboratory represent real dilemmas for the participants, in that participants actually have the goal to do well at the task. Perhaps participants simply disengage from the laboratory tasks because the tasks do not represent dilemmas about which the participants actually care (Inzlicht & Berkman, 2015). This assumption is problematic, even for researchers who conceptualize self-control as the overriding of impulses, because there would be no need for self-control in the absence of an impulse. Indeed, many common laboratory tasks used to assess self-control can be gamed to allow participants to succeed without overcoming a temptation or competing response (e.g., by focusing attention on the last letter of each word on the Stroop task, such that no dilemma between automatic and control processes exists).

Recommendation

Researchers should assess participants' beliefs about what their goal or goals are in a situation and how they understood the response options to map on to those goals. Researchers can also consider measuring self-control outcomes in continuous rather than categorical terms. The use of naturalistic decisions in which participants can choose from a list or even choose to create their own option would allow for the study of creative problem solving in the face of self-control dilemmas. Also, instead of assuming that participants hold normative goals (e.g., to eat healthfully), researchers need to measure the idiographic goal that participants have in a situation and make sure that it is salient and prioritized in the experimental context. For example, eating a tasty sweet consti-

tutes self-control failure only when a person both has a dieting goal and desires to act on that goal in the situation, as opposed to, say, an alternative hedonic goal. To truly measure self-control in the laboratory, researchers need to ensure that participants actually care about the task at hand and view the task as a self-control dilemma rather than as another boring task that they need to complete as quickly as possible to be able to get out of the laboratory and go resume their lives. Note that this also taps into issues of motivation (as addressed in the capacity section above). Researchers need to be explicit on what the experiment is intending to test (e.g., self-control, motivation, or both) and what the presumed relations are between those constructs, rather than simply assume all participants are equally motivated.

In addition to refining our laboratory paradigms, researchers can further focus on studying how self-control naturally unfolds in daily life (e.g., Hofmann, Baumeister, Förster, & Vohs, 2012; Milyavskaya & Inzlicht, 2017b). This, however, also comes at a cost because experience sampling studies that examine self-control in vivo raise participants' awareness of dilemmas by explicitly asking them to reflect on whether their desires conflict with long-term goals. New methodologies need to be developed to ensure that research on self-control reflects how self-control is actually used, examining whether and how individuals recognize the presence of self-control dilemmas, and the strategies that are used.

Conclusions

The aim of this brief paper was to make explicit some of the assumptions that abound in the literature on self-control. These assumptions can hinder scientific progress in understanding self-control by perpetuating specific lines of thinking and research and obscuring others. We believe that questioning these assumptions can lead researchers to shift their focus onto issues that are important and foundational but have been relatively neglected by the literature because of their implicit nature. Many of the assumptions stem from the field's collective lack of knowledge regarding the actual processes underlying self-control and also perpetuate it (because it is assumed, not examined empirically). The articulation of the assumptions can help guide future research directions, encouraging researchers to empirically test and elaborate on some of these assumptions and providing new research areas.

The continual lack of consensus on the basic definition of self-control underscores our point that scientists need to be specific about which aspects of self-control they are studying. Although the preponderance in psychology of terms referring to the same construct can be divisive and detract from cumulative knowledge, using the same term to refer to different conceptual phenomena can also lead to further confusion. In the case of self-control, this ambiguity manifests in a multitude of literatures that mostly do no talk to one another despite using the same terminology and have difficulty integrating their findings when they do. By using more precise terms and making our definitions and assumptions explicit, the areas of commonality and divergence throughout these literatures will become apparent. In turn, being able to identify real gaps in scientific knowledge as opposed to mere definitional differences will allow scientists to substantially advance the field. We thus urge researchers to define their terms rather than assume that everyone means the same thing by self-control; use more specific terminology or qualify where appropriate (e.g., trait self-control; proactive self-control); and be explicit about the assumptions that are made in their research.

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