Understanding students' experiences of self-control from a qualitative perspective

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Date 08.02.2022

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Abstract

Background: Different fields within psychology have developed approaches towards self-control, characterizing the phenomenon as either a state, trait or skill, each with their conceptualizations of self-control success and failure. Empirical research has been conducted to substantiate these approaches. However, individuals' lived experiences of self-control have not been as prominent in the scholarship. Therefore, the aim of this explorative qualitative study is to gain insights into students' understanding of self-control.

Methods: Semi-structured interviews were conducted among nine psychology students. Participants were interviewed about their association with the term self-control, their experiences with self-control failure and success as well as about their opinions on statements about self-control. The interviews were analyzed with the method of constant comparison.

Results & Discussion: The results showed that students described self-control as a state, trait and skill. The versatile descriptions of self-control might imply that self-control is a multifaceted construct that cannot be explained by one of the existing theories alone.

Conclusion: This study should be replicated in other populations than psychology students. If future studies confirm that multiple theories do justice to people's experience with self-control, this might serve as an argument to shift attention to multimodal approaches and combine theories further.

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Introduction

People often set long-term goals for themselves like building a positive relationship with others, being more physically active, eating healthier, or working harder for one's career. Yet despite best intentions, people are often unable to act in accordance with their goals. This usually happens when people experience a conflict between the desire to follow temptations (e.g. a friend offering chocolate) and their higher goals (e.g. eating healthier). To resist everyday temptations and to pursue higher-order goals, one needs to exert self-control (Hofmann et al., 2012). Self-control is defined as the capability to override impulses, regulate thoughts and emotions, as well as to inhibit undesired and to foster goal-directed behaviours (Baumeister & Heatherton, 1996; Baumeister & Vohs, 2016; Muraven & Baumeister, 2000).

Currently, most research on self-control is driven by the top-down approaches. Here, studies are guided by researcher's hypotheses and theories and data is analyzed to validate or refute these (O'Brien, 2016; Williamson, 2013). This might lead most studies to focus on behavioral measures of self-control and overlook individuals' lived experiences (Peterson & Seligman, 2004). Contrary, bottom-up research methods start with the data and work towards the identification of patterns within the data. This helps to identify unobserved heterogeneity and variables and can explain previously incomprehensible findings (Kelle, 2006). Despite the extensive body of research on self-control, there seem to be inconsistencies on its conceptualization (Baumeister et al., 1994; Costa & McCrae, 1990; Friese & Hofmann, 2009). So, using bottom-up approaches might help to understand these. Therefore, it is valuable to investigate the perspective of a population whose reality is significantly influenced by self-control, namely students.

Self-control is thought to lay at the heart of individuals' academic success (Duckworth & Seligman, 2005; Ferrari & Emmons, 1995). Higher education generally requires a greater degree

of self-control, as the extent of personal responsibility is substantially greater compared to other educational levels, e.g. secondary school (Stadler et al., 2016). Some studies have even suggested that self-control is more important than IQ in predicting school performance, grades, and attendance among college students (Duckworth & Seligman, 2005; Wolfe & Johnson, 1995). Therefore, the perspective and experiences of college students with self-control success and failure might be particularly enriching. Students with higher levels of self-control do not only achieve better grades but are also found to have better social relationships and exhibit more emotional stability (Tangney et al., 2004; Zettler, 2011). In contrast, lower levels of self-control in students have been linked to cheating, alcohol and drug abuse, and unhappiness (Ford & Blumenstein, 2013; Tangney et al., 2004; Williams & Williams, 2012). Dalton and Crosby (2011) also noted supporting self-control in college students may help to promote student learning beyond the mere development of study skills. While most self-control studies have focused upon behavioural measures (Peterson & Seligman, 2004), little is known about how students understand self-control and how they experience its success and failure. However, this is essential to achieve a better understanding of self-control and support students in using it optimally.

Different fields within psychology have developed approaches towards self-control, characterizing the phenomenon as either a state, trait or skill, each with their conceptualizations of self-control success and failure. The strength model first introduced by Baumeister et al. (1994) is one of the best-known theories on state self-control. It describes self-control as a limited resource (Baumeister & Heatherton, 1996; Baumeister et al., 1998; Hofmann et al., 2012; Muraven et al., 1998; Muraven & Baumeister, 2000). Whenever an individual exerts self-control, they draw on this limited resource. When the resource becomes consumed, individuals find themselves in a state of ego-depletion. This state can be understood as the body's means to conserve remaining energy

resources until there is time to recover. Being in a state of ego-depletion means that subsequent efforts of self-control are more likely to fail (Baumeister & Heatherton, 1996; Baumeister & Vohs 2016; Hofmann et al., 2012; Muraven et al., 1998; Muraven & Baumeister, 2000). Additionally, situational factors such as stress on self-control, seem to impede self-control (Duckworth et al., 2013; Heatherton & Wagner, 2011; Nielsen et al., 2020; Oaten & Cheng, 2005). Several studies found that students' self-control dropped when they experienced academic examination stress (Duckworth et al., 2013; Oaten & Cheng, 2005). This might be because situational factors such as stress deplete and leave an individual with less resources for self-control. Altogether, according to the strength model, self-control success and failure seem to depend on whether a person has sufficient resources or not, especially in light of distress.

Other approaches view self-control as a trait. Trait self-control is defined as a stable tendency to think, feel and behave across different situations that distinguishes an individual from others (American Psychological Association, 2018; Costa & McCrae, 1990). It is often seen as the counterpart to trait impulsiveness, which is associated with spontaneous decision-making and acting without thinking and planning (Friese & Hofmann, 2009; Whiteside & Lynam, 2001). Individuals are considered high in trait self-control when being able to counteract impulses (Carver, 2005). This requires an individual to restrain from temptations and to initiate goal-directed behaviours. Individuals with more inherent sensitivity towards incentives experience more difficulties with resisting temptations. For example, students with lower self-control find it more difficult to resist engaging in activities other than studying (Uysal & Knee, 2012). Therefore, according to the trait approach, self-control success and failure seem to depend on a person's dispositions such as the sensitivity toward incentives and the ability to inhibit impulses (Carver, 2005).

Another approach characterizes self-control as a skill referring to learnable strategies that aim to promote self-control. These self-regulatory strategies can be described as specific ways to counteract a short-term reward when representing a threat to long-term goals (Ein-Gar et al., 2008). These strategies can be divided into situational strategies (manipulation of the environment in a way that facilitates goal-directed behaviour) and intrapsychic strategies (changing one's inner response towards desirable stimuli) (Duckworth et al., 2016; Ein-Gar et al., 2008). Especially, situational strategies (e.g. being with people who facilitate self-control) seem to be effective for the purposes of students (Duckworth et al., 2016; Marcus, 1988; Zimmerman, 1989). Accordingly, the use of the right strategies determines whether attempts of self-control will be successful or not (Mischel, 2014; Mischel, 2011).

Despite the differences in these conceptualizations of self-control, the three theories share the assumption that experiences of self-control can be classified into distinct, mutually exclusive categories of success and failure. Either an individual is in the right state, has beneficial dispositions or uses effective skills to successfully exert self-control, or not. However, what constitutes self-control success and failure is not clearly defined, nor have attempts been made to substantiate the assumption that self-control success and failure are mutually exclusive. Yet, mixed experiences of self-control have been reported by laypeople. For example, if a person's goal is to move more and run 5km every week, but this person only runs 3km, their goal to increase movement has been achieved, but not to the desired extent. In this case, self-control could be considered as partially successful. To further explore this phenomenon, it is necessary to systematically investigate how individuals' experience self-control success and failure.

Investigating individuals' experiences is essential because the representation of self-control success and failure can influence both social convictions and scientific theories on self-

control. Joffe (2007) for example illustrated how the black and white perspective on self-control influences Western ideals, the development of identities and the denial of uncontrolled aspects. He describes self-control as a core value of Western culture, in which a black and white perspective of self-control leads to a radical assessment of controlled and uncontrolled aspects. Being self-controlled is judged as good and determined, while uncontrolled aspects are condemned as bad and a loss of (Western) qualities. Accordingly, the uncontrolled aspects are denied and attributed to 'others' outside the culture, so that the core value of self-control is not contaminated. These dynamics influence the identity development of those who identify themselves with Western culture (Joffe, 2007). In another study, Klinger et al. (2018) found that individuals' beliefs about self-control also influenced their behaviour. When individuals perceived self-control as limited, they were more likely to experience ego-depletion resulting in an impaired performance under high regulatory demands. Together, these findings illustrate that peoples' understanding of self-control is relevant as it impacts core aspects of a person including their identity and behaviour.

While considerable empirical research has been conducted to substantiate different self-control theories, individuals' lived experiences of self-control have not been as prominent in the discipline. Therefore, it is worth investigating individuals' perception of self-control and its success and failure further. Hence, this qualitative study was guided by the following research questions:

(1) *How do students describe self-control?*

(2) *How do they experience self-control, success and failure?*

Methods

Design

In order to understand the way in which students perceive self-control, an exploratory qualitative study design was used (Hesse-Biber & Leavy, 2011). Since limited research (according to the author's knowledge) has explored individuals' understanding of self-control through qualitative methods, an exploratory approach seems to be most applicable. Semi-structured interviews were conducted and analyzed. Ethical approval was obtained by the ethics committee of the University of Twente (Request Nr. 210914).

Participants

Participants were recruited in July 2021 via social media using a convenience sampling method. Individuals were included if they: (1) were above the age of 18, (2) were students at a university, (3) were German native speakers, as to allow participants and the researcher to conduct the interviews in their shared native language. A sample of nine participants (6 women, 3 men) ranging from the age of 22 to 31 years (M=24.55, SD=6.02) were recruited. All participants studied Psychology. Participation was voluntary and all participants provided informed consent prior to the interview (see Appendix A).

Materials

Prior to the data collection, a pilot study was conducted with a layperson to test the quality of the interview structure, the comprehensibility of questions, and whether the desired insight on self-control success and failure could be achieved. The resulting interview scheme is presented in Appendix B. The interview scheme can be divided into three parts. The first part was a brainstorming exercise, used to collect participants' spontaneous associations with self-control either by using pen and paper or the digital whiteboard. Brainstorming techniques have been used

in research to stimulate the generation of ideas and to increase its quantity and quality (Al-Samarraie & Hurmuzan, 2017). This method holds the potential to bring student's associations with self-control to light without influencing them by previously given information. Participants were asked to cluster their responses into groups and to explain these to the researcher. Follow-up questions such as 'What do you mean by that?' or 'Could you elaborate on that?' were prepared by the researcher to achieve an adequate understanding of the participants' associations. The second part of the interview explored participants' experiences with self-control success and failure. Participants were asked to describe these situations and their use of self-control. Further, this part included questions to explore nuances beyond the mere self-control success and failure dichotomy (e.g. 'Did you consider your use of self-control fully successful?') and fluctuations in their level of self-control (e.g. 'In general, do you feel your self-control is always at the same level, or does it fluctuate? How do you notice this?'). In the last part of the interview, participants were asked to give their opinions on statements about self-control such as 'Some people think that self-control is a trait, which is stable (does not change) throughout life'. These statements were created based on scientific literature on self-control (Baumeister et al., 1994; Duckworth et al., 2013; Whiteside & Lynam, 2001).

Procedure

Due to the COVID-19 pandemic, not all interviews could be carried out in person. Five interviews were conducted face to face at the University of Twente and four interviews via teleconferencing, using the online communication platform 'Zoom'. Participants were able to join the online meeting via a personalized invitation link. Participants interviewed online were asked to sit in a quiet space of their choice where they would not be interrupted. The participants were informed about the goal of the study and reminded that the conversation was recorded. After

providing informed consent, participants were interviewed according to the interview scheme. The interview length varied between 20:37 and 1:15:59.

Analysis

In preparation for the data analysis, all interviews were pseudonymized and verbatim transcribed. The resulting interview transcripts were analyzed with Altas.it 8.0. For this purpose, a systematic inductive coding procedure was used to categorize meaningful interview segments into codes (Boeije, 2002). This method implies, firstly, a within analysis and, secondly, an analysis between interviews was conducted based on which codes and their connections were identified. One major advantage of this procedure is that it captures the variance in self-control experiences both within and between participants (Boeije, 2002).

After getting familiar with the data, a first coding scheme was created that was developed further during the coding process. Therefore, every interview was analyzed and compared within itself. This started with a process of open coding. One interview was read and sections relevant to the research questions were highlighted and labeled with codes. For example, sections in which one participant indicated to use reflection for self-control were labeled with the code 'reflection'. Then, different sections of the same interview were compared to capture the overarching perspective of the participant, to achieve an understanding of each code and its characteristics, and to reflect on the interview's consistency.

After the comparison within interviews, the comparison between interviews from different participants followed. This second comparison was continued until code saturation was reached. For this purpose, fragments that were given the same code across interviews were compared. Based on this comparison, a definition of each code was formulated (see Table 1). Codes that addressed the same topic were combined. The aim of this step was to recognize similarities and differences

in the experiences of self-control of different individuals and to construct a definitive coding scheme. To avoid researcher bias and to consider different perspectives, the preliminary coding schemes were discussed in the research team until agreement was reached.

Results

Participant experiences with the interview

Overall, participants seemed to be engaged and motivated to share their experiences with self-control. However, for some interviewees, it was more difficult to recall and describe experiences of unsuccessful self-control ("*I think about it. It's pretty difficult because I really rarely lose control*"), whereas for other participants it was more challenging to describe experiences of successful self-control ("*Sometimes it is a little difficult for me to believe that I have control*"). Also, the number of experiences reported, and the depth of the descriptions, varied across participants. Despite these differences between participants, several recurring themes could be identified. An overview of these can be found in Table 1.

Table 1

Description of themes, codes as well as exemplary quotations from the interviews (n=9).

Themes	Main-code	Definition	Quote
1.Forms of control	Control over needs	To control one's needs means to inhibit the inner experience of a desire, if it conflicts with long-term goals.	"On the one hand, you have to know your needs and on the other hand, you have to be able to control or reduce these needs"
	Control over thoughts	Control over thoughts means to reduce unwanted cognition and not to be influenced by these thoughts.	"So that somehow I even control what I think. Presumably, because thoughts are also converted into the language after all. And what turns into language is then behavior in a social context, which can again have a consequence. So sometimes I feel like I have to control myself in this regard too."
	Control over emotions	Emotional control means to reduce unwanted emotions and not to be influenced by these emotions.	"So, very roughly self-control if I defined it that way ... to also control feelings and emotions."
	Control over behaviour	To control one's behaviour means to either perform desired behaviour or to suppress undesired behaviour.	"It is also that when you have to restrain yourself from not doing certain actions or from doing certain actions"
2.Cognitive effort	Self-reflection	Self-reflection means to think critically about oneself, in order to become aware of one's needs and exert self-control.	"...that it is also important to be able to reflect on yourself and to know when to put yourself back. In a way, that has to do with self-control for me." "It is probably more the case that self-awareness is also a prerequisite for self-control. So, if I am not aware of what I want right now and what is possible and what is not, then I cannot control it."
	Rational thinking	Rational thinking means relying on logical reasoning rather than emotions, in order to exert self-control.	"And someone who tends to have less self-control is more likely to react emotionally with an emphasis on reacting because that's where, if you act rationally ... so to speak. That doesn't mean that you are not emotional, but just that you say "no, I have self-control here." "...that you don't let your emotions guide you, but rather remain rational…"

	Planning	Planning means to decide for an action in favor of one's long-term goals and to plan its execution.	"I would say that self-control somehow also has something to do with decisions, that one says, I always choose something that leads me to this goal, and that is kind of mentally exhausting" "Yes, I have already planned ahead. At the weekend I knew I would meet a friend and thought that I better won't make it then, so I'm doing it this week ... So, I planned it so that I knew it was quiet at this moment and nobody could disrupt me."
	Evaluation	Self-control means comparing one's actions and their consequences with the desired actions and consequences and making adoptions if needed.	"So maybe the feedback loops still need an explanation ... e.g. if I want to achieve a goal, what is the next action that will bring me closer to my goal? Then I look to what result does my action lead me and control? Have I achieved that here or not? And if not, what else do I need to understand now? What adjustment screws do I have to turn now so that I can get there? Ah yes, that I am in such a constant application process."
3.The role of personal priorities and motivation in self-control		The more personally important the goal, the greater the willingness to invest self-control. Intrinsically motivated tasks seem to require less self-control.	"So personally, I would always tend to use self-control mainly for the things I need for my work or for my studies. So, I would say that it is relatively difficult for me not to exercise self-control. If, however, I now talk about so many health activities such as sleeping or eating healthy, or exercising, these are more the things that are not so high in my priorities, so to speak, which is why it is more difficult for me to behave correctly, so to speak, and therefore I, so to speak also need more self-control or self-control is more difficult for me because they are lower in my priority."
4.State self-control	Self-control is limited	Self-control is viewed as a limited resource that is depleted with longer and more frequent use.	"You can also use it up in quotation marks if you are in a situation in which you have needed a lot of self-control, especially over a long period of time, until you get to a point where you no longer have so much self-control…"
	Depletion effects	When self-control is depleted subsequent attempts of self-control seem more likely to fail until there is time to recover.	"And I believe that if you exercise self-control for a very long time and then at some point no longer have the energy to continue exercising it in certain areas, then at least I've experienced it, with myself and with other people, that you turn very lean where you didn't want to go"
	Practice	Self-control can become stronger through its practice and weaker in absence of its exertion	"And that even if, for example, you haven't used self-control for a long time. That you can't expect the first time you need self-control again that you have as much self-control as before, but that you then have to build it up again like a muscle, so to speak."
	Fluctuations	There can be minor fluctuations in self-control due to situational factors such as stress.	"There is already a constant level around which it revolves, but around this constant level it can fluctuate." "There are definitely fluctuations. When I'm happier, more satisfied in my everyday life, then I have more self-control or can exercise more. And if I'm not doing so well or I'm very stressed, then definitely less."

5.Trait self-control	Character strength	Self-control can be a learned or innate character strength meaning a positive part of one's personality that impacts how one feels, thinks, and behaves.	"I can also imagine that self-control is one of the strengths that are different for some people than for others. And that, especially when the strength of others is more pronounced...it can of course also be a learned strength. That is clear... But it could then also be more consistent."
	Low self-control	Low self-control can be associated with being impulsive, spontaneous and emotional.	"There is probably a level of self-control, I think so too. And maybe that is always higher for some people. And then that's probably a continuum I would maybe go with. People just start somewhere else." ".. that you let yourself go, so to speak, and follow the impulses that you have right now and maybe not necessarily at all ... although ... don't think about it ... Maybe people are already thinking about it, but do not adapt their actions accordingly."
	High self-control	High self-control can be associated with being conscientious and adaptable	"...the positive aspects of the positive consequences of self-control: I can better adapt to my environment..." "They act considerate..."
6.Self-control development		Self-control seems to be developed at a young age. During the course of life, one can still learn to have more or less self-control. However, this requires a conscious effort.	"You may learn a lot of it in childhood and then it works very consistently in the end. But I would definitely say it's something you can learn later." "I do believe that you can work with self-control. So, in both directions. You can have more control and less over life. I believe that you have to make a very conscious decision to change something about it and that it is something that you have to work on continuously."
7.Self-control as skill	Intrinsic strategies	Intrinsic strategies refer to the change of one's inner, emotional reaction towards a situation, in order to facilitate a desired reaction.	"I tried to make it clear that it is really important that I do this now and that this is also connected to no long-term goals." "... I didn't let it influence me by telling myself it's just the way it is, we have to accept that."
	Situational strategies	Situational strategies refer to the manipulation of the environment, in order to facilitate goal-directed behaviour.	"I told them: 'I have to go now, I have to stop now. Then they asked: 'Why did you say you have to stop now?'. I said, 'Yeah, I'll have my presentation tomorrow. Then they got really worked up about the fact that I'm still hanging around there ... I kept emphasizing it. So, it was a fight against the desire to stay longer"
	Maintaining strategies	Maintaining strategies refer to acts used to maintain self-control and goal-directed behaviour	"Once I've started and stick with it, it's good if I try, if possible, not to interrupt it." "I had this greed for sugar. I tried to replace that with another behavior."
	Habitual behaviour	Habitual behaviour refers to repeatedly performed goal-directed actions, which facilitate self-control.	"So if we now go in the direction of compulsion, it could almost be a ritual again. I perform rituals but that has nothing to do with self-control...That is dreary, so to

			speak. So, this is such a self-deception. You get the impression that you have self-control when you do that, but you don't."
8.Self-control dimentions	Over-control	Too much self-control is viewed as negative. It involves suppressing one's own needs and emotions. It restricts cognitive and behavioural flexibility.	"My negative points mainly refer to when you do excessive self-control, which also loses certain flexibility in thinking and acting" "...that you are somehow suppressed, that you always restrict and neglect yourself a bit. Yes, very simply compliant, just behaving. Yes, without this being in line with your own actual needs. That is of course very, very negative." "...so about the compulsive. When you are too focused on controlling everything. Could I imagine that it can then also become pathological and then also be a burden..."
	Under-control	A lack of self-control can result in impulsive behaviour and long-term goals are less often reached.	"I believe that people ... have little self-control, achieve their goals less often, or maybe just belatedly or maybe just redefine their goals more often …"
	Balanced self-control	Optimal self-control is viewed as a balance between being in control of oneself and letting go.	"But from my point of view, the term freedom is somehow always finding a certain balance between things, i.e. between having self-control in any case, but also being able to switch off from time to time, simply being able to let go consciously. And that's exactly what I feel like a sense of freedom, just finding a certain balance between different things. "
9.Assessment of the success of self-control	Assessment criteria	Self-control is viewed as successful if self-control strategies are actively exercised, are effective (e.g. achieving goals), and efficient (use of minimal resources, e.g. time).	"I would say then you have exercised enough self-control to carry out the action but you haven't exercised enough self-control to implement it efficiently or reasonably. Yes, exactly ... I would say that it is half a control, so to speak." "...somehow just put yourself to work in a controlled manner. So, for example, behaviour that I believe that I am perhaps more of an active player, an active participant in a situation, and especially of myself."
	Shades of control	Self-control success and failure can be seen as a continuum. Within a situation, the degree of self-control can vary for the different types of control. Partial self-control entails the active, effective or efficient use of self-control, but never all of it.	"And just now this example occurred to me from before with dancing and with jealousy, where I could then partly control myself so that I did not cause other dynamics. But sometimes I didn't because I still felt jealous. " "I would say then you have, so to speak, exercised enough self-control to carry out the action but you haven't exercised enough self-control to implement it efficiently or reasonably. Yes, exactly ... I would say that it is, half a control, so to speak. "

Description of themes

Forms of control and its cognitive effort (Theme 1 & 2)

All of the interviewed students made distinctions between different forms of self-control, including control over one's needs, behaviours, thoughts, and emotions (Theme 1). Distinctions depended on what purpose self-control was being used for (i.e. in education or in interpersonal relationships), as different types of control were being used in different ways: *'I don't know if you can call it different forms of self-control ... So, personally, I think it's a different kind of self-control that you need, for example studying than being used in personal contact with someone and yourself.'.* These reported forms of self-control were perceived to be preceded by cognitive processes, which is why self-control was also described as a cognitive effort by almost all students (Theme 2). However, not all participants perceived all cognitive processes to be equally important. For example, some students highlighted the role of self-reflection more than others.

Participants noted that self-reflection was perceived to be crucial to control needs and automatic reaction patterns, especially in light of a conflict between a need and long-term goals. All students reported having experienced these conflicts. Needs were perceived as appealing because they promised immediate joy. At the same time, participants believed that long-term goals would contribute to long-lasting happiness. In these situations, the participants reported using self-control to suppress their needs in order not to jeopardize long-term goals, as one student expressed: *'I think it's also a bit like that sometimes you need self-control to do things that don't bring those peaks of joys that suddenly make you totally happy, but those that keep the basic happiness at a certain level.'.*

Another form of control mentioned by the participants was control over their behaviour. According to participants deciding for an action, planning and evaluating its implementation were

important mental processes required for this type of control. Several participants took a rather critical perspective on two forms of self-control, namely control over emotions and thoughts. According to participants, the purpose of these forms of control were to stop emotions and thoughts from influencing behavior. The importance attached to the various aspects of emotional control differed between participants. For some participants, it was important to control the expression of emotions, whereas for others it was more central to bring about a change of emotions itself. Rational thinking was perceived as the cognitive effort required for emotional control. Finally, control over cognition was rated as difficult, as a participant expressed: *'Somehow I find mind control difficult again. The more you try to control your thoughts, the more it goes in the negative direction and the more your own thoughts slip away from you.'.*

State self-control and its relation to personal priorities and motivation (Theme 3 & 4)

Several participants highlighted the distinctions and relations between state self-control (Theme 4), personal priorities, and motivation (Theme 3). Self-control was described as limited, exhausting and energy-consuming: *'...it also involves a certain amount of effort and energy that you have to muster.'.* On the one hand, participants indicated that self-control was strengthened by its use, while on the other hand they reported that if self-control was required more or longer than usual, it gets depleted and subsequent attempts of self-control were more likely to fail. Further, participants attributed minor fluctuations of self-control to situational circumstances such as stress. However, two participants had a different perspective on fluctuations of self-control. One student experienced much more fluctuations: *'For me there are definitely fluctuations, i.e. during the day, over different days. So, a lot of fluctuations', w*hereas another student interpreted fluctuations as a sign of low self-control: *'People who have a low level of self-control. From my point of view, these people are then likely to be quite unstable, often described, even very fluctuating and probably not*

reliable'. In light of this limited resource, participants highlighted that one had to prioritize personally important goals. A clear distinction was made between motivation and self-control (Theme 3). According to students, self-control comes into play when intrinsic motivation ends, for instance in face of onerous tasks. Interestingly, one participant observed that great enthusiasm can also complicate self-control, as outlined as follows: *'It is very easy to control yourself in a situation that is fundamentally less related to me ... where my personal life, my personal area does not really depend on this situation. And of course, it's a lot harder to control yourself when you're totally enthusiastic about something.*'.

Self-control as both a trait and a learnable skill (Theme 5-7)

Most participants did not perceive self-control as entirely dependent on situational factors but rather as a relatively stable trait (Theme 5). Self-control was perceived to be a continuum with impulsiveness on the lower end and self-control on the upper end. As one student for example explained: *'...For me, impulses are more or less the opposite of self-control. Impulses are more the spontaneous reactions that one has or also partially unconscious reactions that one has.'* The majority of participants perceived self-control as both a personality trait and as a learnable skill: '*...some people are just born with a higher capacity for self-control'* and *'I think it is a skill that one can learn.'*. Most participants did emphasize that self-control is developed at an early age, and that self-control later in life is more stable. They believed that learning self-control at a later stage in life would require conscious effort (Theme 6). The subject being learned is the use of self-control strategies (Theme 7). Different participants reported using different strategies. Some reported using intrapsychic strategies, while others mentioned using situational, maintaining and/or habitual strategies. However, the use of habitual behaviours was often viewed as failure, since self-control was understood as the control over automatic behavioural patterns rather than

their construction. Sometimes habitual behaviours were even associated with psychopathological symptoms.

Self-control success and failure (Theme 8 & 9)

Concerning participants' experience with self-control success and failure, almost all students perceived neither too much, nor too little self-control as successful (Theme 8). To find a healthy balance between being in control of oneself and letting go of control was presented as the golden standard. Students attached importance to a conscious decision when to be controlled and when not to be. Accordingly, being out of control was not necessarily rated as a self-control failure, depending on whether one consciously decided to do so, as one student pointed out: *'So if you want to let go of things, so to speak, that primarily it doesn't seem so self-controlled at first, but when you want to consciously let go again, that this is again a form of self-control'.*

Given the importance attached to conscious decisions for or against exercising self-control, it is not surprising that self-control was judged by participants on more criteria than just the achievement of goals (Theme 9). Students rated self-control as successful when active actions were taken that led to the achievement of a goal with the use of minimal resources. All participants found it difficult to classify self-control to only the two categories success and failure. Self-control success and failure were seen more as a continuum. This is also shown by the following statement of one participant: *'Self-control is a continuum somewhere. So, it's not self-controlled, yes or no? This black or white is very difficult to see in human behavior.'*. Different participants emphasized various aspects of partial self-control. Some reported times when goals were only partially achieved, and others discussed times when goals were achieved in a different way as desired (e.g. passive or inefficient).

Discussion

The aim of this study was to gain insight into the experiences and opinions of students regarding self-control as research approaches towards the conceptualization of self-control are not sufficiently informed by individuals' lived experiences. Two topics of interest were studied, namely students' description of self-control and their experiences with self-control success and failure. This study has found that students described self-control as a state, trait and skill. Further, they use various criteria (active engagement, efficiency and effectiveness) to classify their self-regulatory performance on a continuum between success and failure.

As expected, there is a lot of correspondence between the narratives of the participants and how self-control is described in the scientific literature. Students described self-control alike scientific theories on self-control as a state, trait and skill (Baumeister et al., 1994; Costa & McCrae, 1990; Friese & Hofmann, 2009). Depending on the described aspects of self-control, different theories seemed to be relevant. However, there are contradictions between participant's narratives and the scientific literature on self-control success and failure. While the scientific community adopts a rather black and white perspective of self-control success and failure (Lian et al., 2017; Muraven & Slessareva, 2003), participants perceive there to be a continuum between these extremes.

At the first glance, the descriptions of participants might seem contradictory, because they describe self-control both as learnable (changeable) as well as part of the personality which is often portrayed as innate (unchangeable). This can be explained by combining both theories on self-control as a trait and a skill (De Ridder et al., 2018). One of such is the theory of character strengths (Linley et al., 2009). Generally, this theory distinguishes between natural and learned character strengths. One of these strengths is self-regulation. It is described as the strength of the mind to

regulate one's feelings and behaviours (Peterson & Seligman, 2004). Accordingly, self-control is not equally present in everyone. While self-control comes naturally to some people (those high in trait self-control), others have to rely more on learned self-control strategies (those lower in trait self-control). This might explain why self-control was described as both a character trait and a learnable skill.

However, this approach does not account for the influence of motivation outlined by participants. This study found that participants believe that intrinsically motivated tasks require less self-control. A cognitive theory of self-control may provide a possible explanation for this finding. It distinguishes between an intuitive and a rational system (Deutsch et al., 2016). According to Milyavskaya et al. (2015), the type of motivation (intrinsic or extrinsic) affects these cognitive systems. If we pursue a goal for 'want-to' reasons, our intuitive system produces a greater positive reaction to goal-promoting and less attraction to goal-thwarting stimuli. With 'have-to' reasons, the opposite is the case. For example, if someone is intrinsically motivated to eat healthier, healthy food is automatically given a more positive emotional reaction than unhealthy food. If a goal is pursued for 'have-to' reasons, the affective reaction to goal-thwarting stimuli undermines active self-control. As a result, more obstacles are perceived and more effort is necessary to attain the same progress compared to intrinsically motivated goals. Further, Muraven and Slessareva (2003) found that intrinsic motivation has the potential to compensate for depletion effects. This importance of personal relevance of goals in relation to sustained self-control efforts has also been documented specifically in students. Werner et al. (2016) observed that over a semester, students made more progress on their 'want-to' goals (compared to their 'have-to' goals) because pursuing those goals felt easier.

The great correspondence between the narratives of participants and multiple scientific theories on self-control might imply that self-control is a multifaceted construct, which predominant theories do not do justice to. Despite attempts to integrate different approaches on self-control (De Ridder et al., 2018; Friese et al., 2011; Lian et al., 2017), the single-model perspective seems predominant in the scholarship. Therefore, it might be a challenge for future research to devote more attention to these multimodal approaches and to combine theories further to achieve a comprehensive understanding of self-control.

With respect to participants' experience with self-control success and failure, this study has found that active engagement, efficient use of resources and effectiveness of action are the criteria on which students assessed their self-control. According to our current state of knowledge, there is no research that deals with the criteria under which self-control is viewed as success or failure. The generally accepted assumption that self-control success and failure are mutually exclusive cannot be supported by the results of this study (Lian et al., 2017; Muraven & Slessareva, 2003). The statements made by the participants in this study showed that often not all criteria for successful self-control are met, or that goals are only partially achieved. From the layperson's perspective, neither the labels success or failure are applicable under these circumstances. This might imply that self-control success and failure is more subjective than previously thought. Current measures of self-control failure might not do justice to this subjectivity. Consequently, it might be reasonable for future research to reflect whether the scientific community uses the same criteria as individuals to evaluate self-control and to update the definition of success and failure (continuum vs. dichotomy). Perhaps viewing self-control as a continuum between these extremes would not only influence the academic community but also the societal perspective on self-control. Acknowledging uncontrolled aspects in Western culture might lead to less condemnation and a

higher acceptance of uncontrolled aspects as part of those who identify with the Western culture (Joffe, 2007).

Furthermore, the results showed both too little and too much self-control are experienced negatively. The former was associated with self-control failure and missing one's goals, while the latter was expected to impact well-being negatively. It should be considered to what extent these lay beliefs influence people's self-control performance. For example, Weise et al. (2018) have investigated the impact of self-control on well-being and found that an increase in self-control did not decrease well-being (Hofmann et al., 2014). However, it might be that this is not the case for people who believe that over-control impacts well-being negatively, similar to how limited lay beliefs influence a person's susceptibility to ego depletion (Klinger et al., 2018). Therefore, another possible area of future research might be to investigate the effect of people's belief about 'good or bad' self-control on their self-regulatory performance.

Strengths and Limitations

An important strength of this study appears to be the implementation of the brainstorming exercise, which triggered participants to think about their personal understanding of the concept of self-control. Brainstorming exercises are used to gather individuals' spontaneous thoughts and ideas, without influencing them by previously given information (Al-Samarraie & Hurmuzan, 2017). This helped the researcher to grasp the variety of associations with self-control and the line of reasoning behind these, which otherwise would have been missed. This was essential to not only understand how students think about self-control but also why they think the way they do.

A potential weakness of this study lies in the nature of the sample. Participants were not selected randomly. It could be that especially students high in self-control were willing to take part in the study. In this case, the perspective of individuals with less subjective self-control and reports

about self-control failure would be underrepresented (self-selecting bias) (Heckman, 1990). This would mean that the results are only reliable to a limited extent. For this reason, a critical examination of the sample is necessary. There were both participants who considered themselves to be high and low in self-control. Further, participants expressed that they felt more comfortable in sharing their experiences, particularly experiences of self-control failure, due to the existing relationship with the researcher. Accordingly, the likelihood that a self-selecting bias influenced the results of the current study is low.

Another potential weakness is that all participants were psychology students. This creates the risk that they have already come into contact with theories on self-control and might not question their accuracy. This prior knowledge could have influenced the participants' understanding of self-control and, thus, their expressions during the interview. This means that statements about self-control formulated based on this study are representative of the opinion of all participants, but cannot be generalized beyond that.

Further Research

Since the present study was exploratory, its findings cannot be generalized to other participants in other study settings. However, it offers a new perspective on self-control and holds the potential to inspire prospective research. In particular, it is recommended to replicate the study in other populations than psychology students. This would help to ensure that the prior knowledge of the target group did not distort the results and that multiple scientific theories are in fact relevant to individuals' experiences with self-control. If these future studies confirm that multiple approaches on self-control seem to do justice to individuals' experience, this can serve as an argument to direct attention towards frameworks that integrate multiple theories of self-control (De Ridder et al., 2018; Friese et al., 2011; Lian et al., 2017).

Further, this and other studies hold the potential to inform the development of self-control interventions. Currently, most interventions build upon one theoretical approach. For example, goal-setting interventions often use the cognitive theory only. Recognizing the literature arguing for the integration of multiple self-control theories would also suggest building future interventions on a combination of theories (e.g. cognitive and the strength model).

With regard to self-control success and failure, future research could build upon this study to examine whether the results can hold in general. In particular, the hypothesis that self-control is a continuum between success and failure raised in this study could lead to an updated definition of self-control. This definition could for example include the subjective experience of self-control success and failure as well as frequently used assessment criteria such as active engagement, effectiveness and efficiency. Further, future research could investigate whether lay beliefs (e.g. about over- and under-control) influence individuals experience and performance (e.g. their subjective well-being).

Conclusion

Notwithstanding that further qualitative research on the conceptualization of self-control is needed, this study offers insights into individuals' understanding of self-control and illustrates the contradictions and compliance of their perspective and predominant theories on self-control. Overall, individuals' understanding of the concept of self-control is in line with multiple of these theories. This might imply that multiple theories do justice to people's experience and should be combined to an overarching theory. However, individuals' experiences of self-control success and failure are not readily reflected by theory. Namely, the current study shows that self-control may be a continuum ranging from failure to success, at least from the perspective of laypersons. Furthermore, this research shed light on the subjective experience of self-control: both too much

and too little self-control were considered as negative experiences. The results show that the golden standard for self-control according to lay people is, therefore, not to be self-controlled at all times but to make a conscious decision when to use self-control and when to let go. To investigate the effect of these lay beliefs on self-regulatory performance, might be another potential area of future research.

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Appendix A

Informed Content:

Informed Consent

1. **Introduction and purpose of the study**
   What is self-control? Science has long been concerned with this question. In order to get closer to the answer to this question and to better understand self-control, we are interested in your thoughts, experiences, and opinions on this topic.
2. **Description of the research**
   Should you wish to participate in this study, you will be interviewed about your ideas,
   thought and experiences with self-control. Firstly you will be asked to engage in a brainstorming session about your association with the concept of self-control. Following this, you will be asked to share your experiences with self-control. Lastly, you will be asked to give your opinion and thoughts on different statements about the concept of self-control. This interview will take around one hour and will be audio recorded. These recordings will be destroyed after the data analysis process.
3. **Your right of withdrawal**
   Your participation in this study is voluntary. This means that it is your decision whether you want to participate in this study or not. After you sign this consent you are still free to withdraw at any time and without justification. If you withdraw from the study before the data collection is completed, you will be asked again for consent to use your data. You are free to refuse this request.
4. **Confidentiality**
   Your personal information will be treated confidentially. The data published for research purposes will not include any identifiable references to you.

☐ **I confirm that I have read and understood the information above. I have been able to ask questions about the study and my questions have been answered to my satisfaction**

☐ **I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time without justification.**

☐ **I give permission that the interview is recorded, accessed and analysed for research purposes**

☐ **I understand that personal information that can identify me, such as my name, will not be shared beyond the researcher team**

☐ **I agree that my information can be quoted in research outputs**

_____

Date & Signature

If you wish to receive the results of this study, please indicate your Email address below:

_____

Email Address

Appendix B

Interview Scheme:

Interview Scheme

1. Welcome

   Welcome, first of all I would like to thank you for your willingness to participate in this study. Before we start the interview, I would like to introduce myself and the research project. I'm studying positive, clinical psychology at the University of Twente. At the moment I am writing my master's thesis on the subject of self-control. Research has been dealing with this topic for a long time. Even so, an answer to the question "What is self-control?" could still not be found. Therefore, I am interested in your thoughts, experiences and opinions on this topic. And that's what this interview will be about. Before we begin, I would like to refer to informed consent once again. This interview is recorded verbally. The recordings will be destroyed after all data has been analyzed. Your information is kept confidential and your identity is protected. You have the right to withdraw from this study at any time without justification. Do you agree with these framework conditions? Do you have anymore questions? If there are no further questions, please find a quiet place so that our conversation is undisturbed.Brainstorming session.

2. Brainstorming exercise

   First, I would like to an brainstormin exercise with you . Please write down all your associations with the term 'self-control' (on the whiteboard). When you're done, I have written down a few more questions for further inspiration. You are welcome to add further ideas to your mindmap. What comes to mind when you think of self-control?Was sind positive Aspekte bezüglich Selbstkontrolle?

   - What are the negative aspects of self-control?
   - What are the characteristics of self-control for you?

Great that you could come up with so many ideas on self-control. To make it easier for me to understand them, could you group your associations together and then explain those groups to me? Questions about further differentiation:

- What do you mean with that?
- Could you elaborate on that?

3. Experiences with self-control

After getting an impression of what self-control means to you, I would like to talk about your personal experiences with it.

Could you tell me about a situation during the last week when you tried to use self-control and felt in control?

- What was the situation like?
- How did you use self-control?
- Would you consider your self-control as fully successful in this situation? To what extent have you been able to use your self-control successfully and to what extent not?

Please think back to another situation during your last week when you tried to use self-control and felt out of control? What was the situation like?

- How did you use self-control?
- Would you consider your self-control as fully unsuccessful in this situation? To what extent have you been able to use your self-control successfully and to what extent not?
- Generally speaking, would you consider your self-control to be constant or does it fluctuate? How do you notice fluctuations?
- Are the feelings of being in and out of control equally present in your life?

4. Ihre Meinung zu Selbstkontrolle

Thank you for sharing your experiences with me. Lastly, I would like to know your opinion on some statements of self-control.

- Some people think that self-control is a trait, which is stable (does not change) throughout life. What is your opinion on this statement? What is your experience with self-control changing/staying the same throughout your life?

- Others think that the ability to control yourself can fluctuate depending on the situation. What do you think? What are certain situational circumstances that make your self-control varying?
- Some people think that it is not possible to be successful and unsuccessful in self-control at the same time. What is your opinion? Have you ever been successful and unsuccessful at the same time?
- Others think that self-control should be seen as a continuum ranging from low to high self-control, meaning that you can also be partly successful. What do you think? Can you think of an example where you were partly successful at self-control?
    - How do you think people with different levels of self-control are different?
    - Which characteristics do you see for a high level of self-control?
    - Which characteristics do you see for a medium level of self-control?
    - Which characteristics do you see for a low level of self-control?

Then we have come to the end of the survey. I would like to thank you again for your participation.